

Do Incentives Mediate the Willingness of Civil Defence Force Volunteer Members to Respond in Pandemic and Stay as Volunteers?

Siti Hasliah Salleh, Nor Ashikin Mohamed Yusof, Shadiya Mohamed Saleh Ba Qutayan,
and Intan Sazrina Saimy

Faculty of Artificial Intelligence, Universiti Teknologi Malaysia, Jalan Sultan Yahya Petra, 54100 Kuala Lumpur, Malaysia

*Corresponding author: sitihasliah@utm.my

Article history: Received: 2 Jan. 2024 | Received in revised form: 8 May 2024 | Accepted: 8 May 2024 | Published online: 6 Dec. 2024

Abstract

During the COVID-19 pandemic, Malaysia opened over thirty Low-Risk COVID-19 Quarantine and Treatment Centre (PKRC). These PKRCs needed many volunteers to help first responders with non-medical services and patient management. Luckily many new volunteers signed up for this risky work. These volunteer hours were paid. How willing are they to volunteer? Will they stay? Did the incentive mediate volunteering and staying? To illuminate, this research was done. 391 respondents involved. They were the volunteers registered with the Civil Defence Force (the Force). They were chosen by voluntary sampling technique. An online survey was used for data collection. The survey instrument contains two main variables: willingness to respond and intention to stay, and a mediator: incentives. The instrument adapted the Expectancy Theory of Motivation and the Extended Parallel Process Model. The study found that their willingness to respond during pandemics was at a moderate level. Their intention to stay, however, is low. The availability of incentives has been identified as a significant mediator in influencing volunteers' willingness to respond during pandemics and retain them as Civil Defence Force volunteer members. This was significant because many people lost their jobs when the pandemic occurred. Their job alternative at that time was paid volunteering. Thus, it is relevant for the government to offer incentives if a huge number of volunteers is required during a long-term disaster.

Keywords: Paid volunteer; willingness; retention; incentives; pandemic; disaster response

© 2024 Penerbit UTM Press. All rights reserved

■ 1.0 INTRODUCTION

Disaster response efforts heavily rely on the invaluable contributions of volunteers from communities, who are essential in upholding the concept of "defending the public by the public." These volunteers play critical roles in various capacities, including search and rescue operations, providing medical assistance, and distributing aid (Wang *et al.*, 2021). The Civil Defence Force, hereinafter referred to as the Force, has traditionally shouldered the responsibility within the national defence system as a key player in preparing and fortifying local communities to effectively respond to chaotic situations (Uzun, 2024). This mandate aligns with Section 2(h) of Schedule 9 in the Federal List of the Federal Constitution, emphasizing the Force's role in readiness and resilience building within communities (Emaliyawati *et al.*, 2021).

Despite having approximately 2.1 million volunteer members within the Force as of April 2019, the actual number of active volunteers stands at 300,000, with only 5,876 serving as full-time volunteers (Alan *et al.*, 2022). This discrepancy becomes stark when considering Malaysia's population of around 32.66 million people, where a single full-time volunteer would need to attend to 5,558 victims in the event of a large-scale disaster nationwide (Sultan *et al.*, 2020). The recruitment and retention of volunteers for disaster response pose significant challenges, with factors such as the peace-time syndrome contributing to a perceived lower importance of disaster preparedness among communities (Munasinghe *et al.*, 2022).

The evolving landscape of disasters, driven by factors like unplanned urbanization, global warming, and climate change, necessitates a shift in mindset towards proactive disaster preparedness (Mellish *et al.*, 2024). The Asia-Pacific region is projected to experience an increase in the frequency and intensity of natural disasters in the coming years, underscoring the urgency for robust volunteer systems and community resilience initiatives (Zewudie *et al.*, 2021). The lessons learned from the 2019 novel coronavirus (COVID-19) pandemic highlight the need for adaptable volunteer frameworks capable of responding to diverse and widespread crises (Hong *et al.*, 2022).

In response to the COVID-19 pandemic, Malaysia swiftly established over thirty Low-Risk COVID-19 Quarantine and Treatment Centres to curb the virus's spread, requiring a surge in volunteer support (Pirani *et al.*, 2022). The Force mobilized all full-time volunteers to various states simultaneously to bolster response efforts alongside other agencies, with volunteers receiving compensation for their service (Bhattarai *et al.*, 2023). This strategic deployment aimed to acknowledge volunteers' contributions and attract community members, particularly those affected by economic challenges during the pandemic (Yükseler, 2023).

The continuity of volunteer service within the Force is crucial for maintaining operational efficiency and leveraging volunteers' familiarity with response protocols (Azarmi *et al.*, 2022). However, the long-term commitment of volunteers post-pandemic remains uncertain, necessitating further research to understand their intentions and motivations (Narwal & Jain, 2021). While existing studies in Malaysia have focused on community preparedness in disaster management, specific research on volunteer perceptions within the Force is lacking (Kesgin & Durmuş, 2022).

International studies on the influence of incentives in recruiting and retaining volunteers have yielded mixed results, with some highlighting the effectiveness of financial incentives in attracting volunteers from low-income backgrounds (Jannat *et al.*, 2023). However, other studies have questioned the efficacy of financial incentives in volunteer recruitment, indicating the need for a nuanced approach to volunteer incentivization (Uhnoo & Persson, 2022). Addressing these knowledge gaps, this study aims to explore the perceptions of Force volunteer members regarding incentives, willingness to respond during the COVID-19 pandemic, and intentions to remain as volunteers post-crisis (North & McDonald, 2023).

Lastly, understanding the dynamics of volunteerism within disaster response frameworks is essential for enhancing community resilience and optimizing volunteer management strategies (Ma *et al.*, 2021). By delving into volunteers' perspectives on incentives, response willingness, and post-pandemic retention intentions, this study seeks to inform future volunteer engagement practices and bolster disaster preparedness efforts within the Force and beyond (Safarpour *et al.*, 2020). The insights gleaned from this research are pivotal for fostering sustainable volunteer systems and fortifying communities against the escalating challenges posed by natural and man-made disasters.

■ 2.0 LITERATURE REVIEW

The role of incentives in influencing volunteers' willingness to respond during pandemics and retain them as Civil Defence Force volunteer members is a critical aspect of disaster preparedness and response. Understanding the factors that motivate individuals to volunteer during crises, particularly in the context of a pandemic like COVID-19, is essential for optimizing volunteer engagement strategies and ensuring the sustainability of volunteer systems. This literature review synthesizes relevant studies to explore the impact of incentives on volunteers' willingness to respond during pandemics and their retention as members of the Civil Defence Force.

A study by Lazarus *et al.* (2021) examined the willingness of undergraduate medical students in Indonesia to volunteer and practice during the COVID-19 pandemic. The findings indicated that monetary incentives were not significantly associated with increased willingness to volunteer, highlighting the selfless nature of volunteers in crisis situations (Lazarus *et al.*, 2021). This suggests that while incentives play a role in volunteer engagement, other factors may have a more substantial influence on volunteers' willingness to respond during pandemics.

Takahashi (2024) investigated the effects of fear of COVID-19 on older volunteers' willingness to continue their activities. The study emphasized the importance of understanding how the pandemic affected volunteers' willingness to remain active in their communities, shedding light on the complex interplay between fear, motivation, and volunteer retention (Takahashi, 2024). This underscores the need to address psychological factors and concerns among volunteers to ensure their continued engagement during crises.

Mahsusi (2024) conducted a global review of the willingness to volunteer among medical and health students during the pandemic, highlighting the influence of sociocultural factors on students' decisions to volunteer. The varying findings across studies underscore the importance of considering cultural contexts and individual motivations in shaping volunteers' willingness to engage in crisis response efforts (Mahsusi, 2024). This emphasizes the need for tailored approaches to incentivizing and retaining volunteers based on their unique backgrounds and circumstances.

In a study by Alshutwi (2021), concerns and willingness among senior nursing students and interns to treat patients with COVID-19 were explored. The research emphasized the importance of providing additional incentives and hazard protections to healthcare workers to maintain and increase frontline staff willing to care for patients during the pandemic (Alshutwi, 2021). This highlights the role of incentives in ensuring the safety and well-being of volunteers, thereby enhancing their willingness to engage in challenging and high-risk environments.

Umar *et al.* (2022) conducted a systematic literature review on health professional students' volunteering activities during the COVID-19 pandemic. The review aimed to identify factors influencing students' decisions to volunteer and the benefits of undertaking volunteer roles. The findings underscored the multifaceted nature of volunteering motivations and the positive impact of volunteerism on students' professional development and community engagement (Umar *et al.*, 2022). This suggests that incentives can play a pivotal role in attracting and retaining volunteers by aligning with their personal and professional goals.

Rafi *et al.* (2021) investigated the willingness of physicians in Bangladesh to work during the initial lockdown due to the COVID-19 pandemic. The study identified predictors of willingness to work, including age, previous pandemic experience, and compliance with personal protective equipment recommendations (Rafi *et al.*, 2021). These findings highlight the importance of addressing practical concerns and providing necessary support to healthcare workers to enhance their willingness to respond during crises.

In a study by Dominic (2024), students' attitudes about work requirements before and during COVID-19 were explored. The research emphasized the role of institutions in facilitating greater willingness among students to volunteer during epidemics and avoiding mandatory volunteerism (Dominic, 2024). This underscores the significance of creating supportive environments that encourage volunteerism while respecting individuals' autonomy and preferences.

Goniewicz *et al.* (2022) examined the moral, ethical, personal, and professional challenges faced by physicians during the COVID-19 pandemic. The study highlighted the complex considerations that influence healthcare workers' decisions to volunteer, including ethical obligations, autonomy, and the need for incentives such as protective equipment and training (Goniewicz *et al.*, 2022). This underscores the importance of addressing multifaceted challenges to ensure volunteers' well-being and commitment during crises.

Overall, the literature reviewed demonstrates the multifaceted nature of volunteers' willingness to respond during pandemics and the critical role of incentives in shaping their engagement and retention. While monetary incentives play a role in motivating volunteers, other factors such as fear, cultural norms, personal motivations, and ethical considerations also influence volunteers' decisions. Understanding these complex dynamics is essential for designing effective volunteer management strategies that promote sustainable volunteer engagement and enhance community resilience during crises.

■ 3.0 RESEARCH METHODOLOGY

This study applied quantitative approach. A self-developed survey instrument is used to develop the profile of volunteer members on their participation in disaster response based on the influence of incentives. The development of this instrument is guided by Theory of Reasoned Action, Theory of Planned Behavior and Extended Parallel Process Model. Here, the willingness (independent variable) of volunteers to get involve in emergency and disaster response and recovery is studied from two contexts, namely perceived threat, and perceived efficacy. Their intention (dependent variables) is studied from the context of volunteer's recruitment and retention. It means, volunteers' recruitment and retention are enhanced by, or may even depends on their willingness to respond. Relationship between willingness to respond, and intention to recruitment and retention in turn is moderated by incentives, which can range from monetary and non-monetary incentives.

Content validity of the survey instrument was confirmed by subject matter experts. The instrument was improved as suggested by the experts. Reliability of the instrument is tested using Rasch Measurement Model. The findings show that the item reliability values for all constructs meet the set reliability standard of 0.8. However, 2 constructs are having an individual reliability value of less than 0.8 and 1 construct of less than 0.6. However, for this study, item reliability was prioritized over individual reliability. In terms of the construct validity, the value range is between 66.3 percent and 52.2 percent. This indicates that the instrument can measure more than 50% of the constructs measured, which indicate all constructs are unidimensional.

The population of study is volunteer members of APM in Malaysia. As of 2019, the number is 5,876. In referring to Krejcie & Morgan (1970) table, the study should have at least 382 respondents. They are selected using purposive sampling method. The study initially planned to distribute the questionnaire through face-to-face approach. However, due to COVID-19 issue and majority of respondents provided volunteer works at the COVID-19 recovery centres, the data collection approach changed to online survey. A poster was used to improve the respondents' attention to the survey. They were given token of appreciation, which is MYR10 Kentucky Fried Chicken voucher. This initiative increased the response rate within less than three days. The data collected is analysed using statistical software including SPSS, SMARTPLS, and Winsteps.

4.0 FINDINGS AND RESULTS

4.1 Profile of Participants

The study involved 390 respondents, with a notable gender disparity as 60.8% were male, while 39.2% were female. The age distribution indicated that a significant proportion (44.4%) fell within the 21 to 30 age group, with diminishing percentages in older categories. In terms of education, 58.4% held SPM/STAM qualifications, with only 1.5% having a master's degree. A substantial portion (70.5%) lacked a fixed income. The majority earned RM1,001 to RM2,000 monthly (56.5%). Regarding marital status, 43% were single, and 53.4% were married. Of those married, 69.51% had spouses not in frontline roles. Data on childcare choices indicated that 62.9% opted not to use a babysitter. Geographically, Kelantan, Kedah, and Selangor had the highest representation. Volunteer service length varied, with most (31.5%) serving less than a year. Work hours per week ranged from 3 to over 10, with the majority (52.94%) working 7 to 9 hours. Contractual volunteering was prevalent (56.52%), with 33.3% having never served as contract volunteers.

4.2 Perception of Volunteer Members Towards the Relative Importance of Incentives they Received in Disaster Response Profile of Participants

Table 1 shows the perception of volunteer members toward the value or importance of incentives that the Force provides to them. The data analysis revealed that volunteer members place a high value on non-monetary incentives, particularly those that provide educational and training opportunities. Specifically, disaster-related and emergency-related courses and training programs were identified as highly important, suggesting that volunteers are primarily motivated by opportunities to enhance their knowledge and skills. This finding indicates that the primary motivation for these volunteers is not financial gain or job advancement but rather personal and professional development through skill acquisition and knowledge enhancement.

Table 1 Analysis of the relative importance of incentives to the volunteer members

Incentives		Value		Level of importance
Type	Category	Size	Probability	
Job promotion	Non-monetary	2.16	0.00	Very low
Medal	Non-monetary	2.03	0.00	Very low
Token/consolation	Monetary	1.90	2.50	Very low
Bonus	Monetary	1.19	20.25	Very low
Compensation	Monetary	0.72	32.00	Low
Certificate	Non-monetary	0.02	49.5	Low
Career development	Non-monetary	-0.86	71.5	Moderate
Allowance	Monetary	-0.95	73.75	Moderate
Disaster-related courses	Non-monetary	-1.19	79.75	High
Emergency-related courses	Non-monetary	-1.24	81.00	High
Emergency-related training	Non-monetary	-1.25	81.25	High
Disaster-related training	Non-monetary	-1.29	82.25	High

Conversely, monetary incentives such as bonuses, tokens, and job promotions were perceived as very low in importance, highlighting a lesser degree of motivation driven by financial rewards. Even compensation, while more significant than other monetary incentives, was still categorized as low in importance. This indicates that while financial incentives may play a role, they are not as effective in motivating volunteer members compared to non-monetary incentives. These insights suggest that policy measures aimed at retaining volunteers should focus more on providing robust training and development programs to meet the primary motivations of volunteers.

4.3 Level of Willingness to Respond and Intention to Stay as Volunteer Members of the Force

This study examines the level of willingness of volunteer members to participate in disaster response and their intention to remain as volunteer members. The analysis was conducted using SPSS software, focusing on three constructs for willingness such as response efficacy, self-efficacy, and perceived threat, and one construct for intention to stay, namely retention. The findings are summarized in Table 2, illustrating the probability values and corresponding levels of these constructs. The analysis revealed that the willingness of volunteers to respond to disasters, measured through the constructs of response efficacy, self-efficacy, and perceived threat, is at a moderate level. The probability values for these constructs are 63.85, 63.8, and 63.9 respectively, indicating a consistent moderate willingness across these dimensions. This suggests that volunteers feel reasonably confident and capable of responding to disasters, perceive the threat of disasters as significant, and believe in their ability to effectively contribute to disaster response efforts.

However, the intention to stay as volunteer members, as measured by the retention construct, is at a low level, with a probability value of 43.85. This indicates a notable gap between the volunteers' willingness to engage in disaster response activities and their intention to remain in the volunteer force over the long term. The lower retention level suggests that despite their moderate willingness to respond, factors such as burnout, satisfaction with the volunteer experience, or external commitments might influence their decision to stay. This finding underscores the need for targeted retention strategies to sustain volunteer engagement and ensure a stable volunteer force for future disaster response efforts.

Table 2 Analysis of the level of willingness to respond and intention to stay in the Force

Construct	Size value	Probability value	Level
Response efficacy	2.77	63.85	Moderate
Self-efficacy	2.76	63.80	Moderate
Perceived threat	2.78	63.90	Moderate
Retention	-0.41	43.85	Low

4.4 The Influence of Incentives as a Mediator to Willingness to Respond and Intention to Stay

This study examines the mediating role of incentives in the relationship between the willingness of Civil Defence Force volunteer members to respond to disasters and their intention to remain as volunteer's post-pandemic. The analysis was conducted using Smart-PLS software to determine the direct and indirect effects of these variables. Figure 1 presents the analysis.

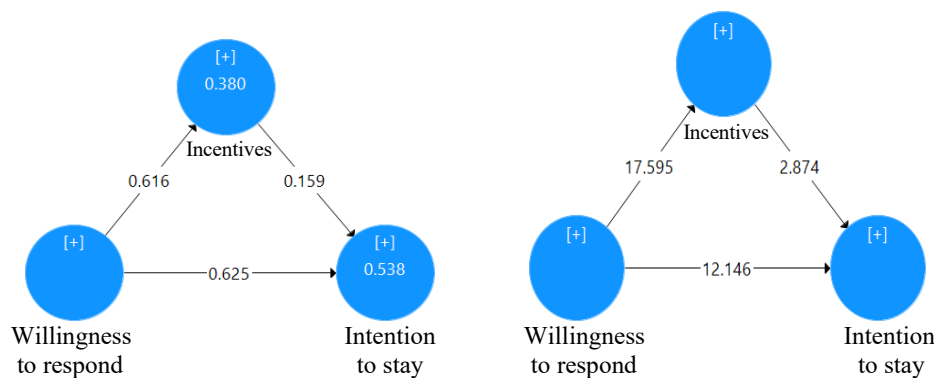


Figure 1 The value of β and the value of t show the relationship between willingness to respond, incentives, and intention to stay as volunteer members.

The findings indicate that willingness to respond has a direct effect on intention to stay ($\beta = 0.625$, $t = 12.146$). Additionally, willingness to respond has a direct effect on the perception of incentives ($\beta = 0.616$, $t = 17.595$), and incentives in turn have a direct effect on intention to stay ($\beta = 0.159$, $t = 2.874$). The analysis shows that the total indirect effect of willingness on intention through incentives is significant but smaller than 0.05. This suggests that while willingness directly influences the intention to stay, incentives play a significant mediating role in this relationship. Specifically, incentives enhance the effect of willingness on retention, highlighting their importance in volunteer management strategies. The findings underscore the importance of incorporating incentives as a key component of volunteer engagement strategies. By providing appropriate incentives, organizations can enhance the willingness of volunteers to respond and significantly improve their retention rates. This insight is crucial for developing effective policies aimed at sustaining a committed volunteer force during and after pandemics.

■ 5.0 DISCUSSION

The significance of incentives in mediating respondents' willingness and intention to stay, as highlighted in this research, holds particular relevance in the context of the COVID-19 pandemic, during which many individuals experienced job losses or limited employment opportunities. The economic downturn caused by the pandemic has heightened financial insecurity for numerous people, potentially impacting their decisions regarding volunteerism and retention in organizations such as Civil Defence Forces.

In this scenario, the findings emphasizing the importance of non-monetary incentives over monetary rewards provide crucial insights. As individuals grapple with financial uncertainty, the allure of financial incentives may be diminished compared to opportunities for personal and professional development, such as educational and training programs. These non-monetary incentives not only offer avenues for skill enhancement but also serve as valuable resources for individuals seeking to adapt to changing job markets and enhance their employability during and post-pandemic. Moreover, the mediation effect of incentives on the willingness-intention to stay relationship underscores the strategic importance of incentive structures in volunteer management, particularly in times of economic instability. While willingness to respond to disasters may remain high among volunteers, the decision to continue volunteering post-pandemic may hinge significantly on the perceived value of incentives offered by the organization. In this context, policies and strategies that prioritize the provision of non-monetary incentives, such as training opportunities and career development programs, can play a pivotal role in retaining volunteers and sustaining

organizational resilience during periods of economic uncertainty.

Furthermore, the study's insights challenge conventional wisdom regarding volunteer motivation, which often assumes a primary focus on monetary rewards. By highlighting the nuanced role of incentives, particularly non-monetary ones, the research prompts a re-evaluation of volunteer management practices, advocating for a more comprehensive approach that aligns with the evolving needs and motivations of volunteers, especially in the wake of significant socio-economic disruptions like the COVID-19 pandemic. Overall, the research underscores the relevance of incentives in shaping volunteer behaviour and organizational outcomes, particularly within the context of the COVID-19 pandemic's economic ramifications. Recognizing the pivotal role of incentives in mediating respondents' willingness and intention to stay provides policymakers and organizations with valuable insights to inform strategic decision-making and enhance volunteer engagement and retention efforts in challenging times.

■ 7.0 CONCLUSION AND RECOMMENDATIONS FOR FUTURE STUDIES

In conclusion, this research challenges prevailing notions by revealing a pronounced preference among disaster response volunteers for non-monetary incentives, emphasizing the significance of training and courses over traditional financial rewards. The intricate interplay between willingness to respond, intention to stay, and the mediating role of incentives suggests a need for a re-evaluation of existing models in disaster volunteer management. Future studies should explore specific aspects of non-monetary incentives, conduct comparative analyses across diverse contexts, employ longitudinal approaches to study volunteer retention, actively engage with policymakers for direct policy implications, develop the profile of volunteers, and explore technological innovations in volunteer training and management. These recommendations aim to refine policies and practices, ensuring the optimization of volunteer engagement and retention in disaster response efforts.

REFERENCES

- Al-Shehri, Y. (2015). *Relationship between personality trait and multi-national construction workers safety performance in Saudi Arabia* (Doctoral dissertation, Loughborough University).
- Alan, H., Eskici, G. T., Sen, H. T., & Bacaksiz, F. E. (2022). Nurses' disaster core competencies and resilience during the COVID-19 pandemic: A cross-sectional study from Turkey. *Journal of nursing management*, 30(3), 622-632.
- Alshutwi, S. S. (2021). 'Senior nursing students and interns' concerns and willingness to treat patients with COVID-19: a strategy to expand national nursing workforce during the COVID-19 pandemic. *Risk Management and Healthcare Policy*, 39-48.
- Azarmi, S., Pishgooe, A. H., Shariffar, S., Khankeh, H. R., & Hejrypour, S. Z. (2022). Challenges of hospital disaster risk management: A systematic review study. *Disaster medicine and public health preparedness*, 16(5), 2141-2148.
- Bhattacharai, H. K., Hung, K. K. C., MacDermot, M. K., Hubloue, I., Barone-Adesi, F., Ragazzoni, L., ... & Graham, C. A. (2023). Role of community health volunteers since the 2015 Nepal Earthquakes: a qualitative study. *Disaster Medicine and Public Health Preparedness*, 17, e138.
- Dominic, C., Ashcroft, J., & Byrne, M. H. (2024). Understanding students' attitudes about work requirements before and during Covid-19. *Medical Education*.
- Kesgin, S. and Durmuş, N. (2022). Volunteering in Disasters and Crises. In M. Senturk (Ed.), *Volunteerism and Working with Volunteers* (pp. 247-269). Istanbul University Press. <https://doi.org/10.26650/b/ss49.2022.007.11>
- Emaliyawati, E., Ibrahim, K., Trisyani, Y., Mirwanti, R., Ilhami, F. M., & Arifin, H. (2021). Determinants of nurse preparedness in disaster management: a cross-sectional study among the community health nurses in coastal areas. *Open access emergency medicine*, 373-379.
- Goniewicz, K., Goniewicz, M., Włoszczak-Szubzda, A., Lasota, D., Burkle, F. M., Borowska-Stefańska, M., ... & Khorram-Manesh, A. (2022). The moral, ethical, personal, and professional challenges faced by physicians during the COVID-19 pandemic. *International journal of environmental research and public health*, 19(9), 5641.
- Hong, E., Jung, A., & Woo, K. (2022). A cross-sectional study on public health nurses' disaster competencies and influencing factors during the COVID-19 pandemic in Korea. *BMC Public Health*, 22(1), 731.
- Jannat, F., Khorasani-Zavareh, D., Allahbakhshi, K., Aghazadeh-Attari, J., Nateghinia, S., & Mohebbi, I. (2023). The Policy Gap and Inefficiency in Public Volunteers' Response to Assist the Hospitals After Natural Disasters in Iran: A Grounded Theory Methodology. *Disaster Medicine and Public Health Preparedness*, 17, e142. <https://doi.org/10.1017/dmp.2022.53>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Lazarus, G., Findyartini, A., Putera, A. M., Gamalliel, N., Nugraha, D., Adli, I., ... & Widyahening, I. S. (2021). Willingness to volunteer and readiness to practice of undergraduate medical students during the COVID-19 pandemic: a cross-sectional survey in Indonesia. *BMC Medical Education*, 21, 1-12.
- Ma, Y., Zhu, W., Zhang, H., Zhao, P., Wang, Y., & Zhang, Q. (2021). The factors affecting volunteers' willingness to

- participate in disaster preparedness. *International journal of environmental research and public health*, 18(8), 4141.
- Mahsusi, M., Huda, S., Nuryani, N., Fahmi, M., Tsurayya, G., & Iqhrammullah, M. (2024). Global Rate of Willingness to Volunteer Among Medical and Health Students During Pandemic: Systemic Review and Meta-Analysis. *JMIR Medical Education*, 10, e56415.
- Mellish, S., Ryan, J. C., & Litchfield, C. A. (2024). Short-term psychological outcomes of Australia's 2019/20 bushfire season. *Psychological Trauma: Theory, Research, Practice, and Policy*, 16(2), 292-302. <https://doi.org/10.1037/tra0001323>
- Munasinghe, N. L., O'Reilly, G., & Cameron, P. (2022). Establishing the domains of a hospital disaster preparedness evaluation Tool: a systematic review. *Prehospital and Disaster Medicine*, 37(5), 674-686.
- Narwal, S., & Jain, S. (2021). Building resilient health systems: patient safety during COVID-19 and lessons for the future. *Journal of Health Management*, 23(1), 166-181.
- North, C. S., & McDonald, K. (2023). A prospective post-disaster longitudinal follow-up study of emotional and psychosocial outcomes of the Oklahoma City bombing rescue and recovery workers during the first quarter century afterward. *Disaster medicine and public health preparedness*, 17, e331.
- Pirani, D., Safi-Keykaleh, M., Farahi-Ashtiani, I., Safarpour, H., & Jahangiri, K. (2022). The challenges of health volunteers management in COVID19 pandemic in Iran. *Journal of Health Organization and Management*, 36(7), 933-949.
- Rafi, M. A., Hasan, M. T., Azad, D. T., Alam, S. F., Podder, V., Hossain, S., ... & Hossain, M. G. (2021). Willingness to work during initial lockdown due to COVID-19 pandemic: Study based on an online survey among physicians of Bangladesh. *Plos one*, 16(2), e0245885.
- Safarpour, H., Fooladlou, S., Safi-Keykaleh, M., Mousavipour, S., Pirani, D., Sahebi, A., ... & Dehghani, A. (2020). Challenges and barriers of humanitarian aid management in 2017 Kermanshah earthquake: a qualitative study. *BMC public health*, 20, 1-10.
- Sultan, M. A. S., Løwe Sørensen, J., Carlström, E., Mortelmans, L., & Khorram-Manesh, A. (2020, October). Emergency healthcare providers' perceptions of preparedness and willingness to work during disasters and public health emergencies. In *Healthcare* (Vol. 8, No. 4, p. 442). MDPI.
- Takahashi, T., Matsunaga, H., Sagara, T., Fujita, K., Fujihira, K., Ogawa, S., ... & Fujiwara, Y. (2024). Effects of fear of COVID-19 on older volunteers' willingness to continue their activities: REPRINTS cohort study. *Geriatrics & gerontology international*, 24, 370-376.
- Uhnoo, S., & Persson, S. (2022). The flip side of the coin: Perils of public-private disaster cooperation. *Journal of Contingencies and Crisis Management*, 30(4), 440-450.
- Umar, T. P., Samudra, M. G., Nashor, K. M. N., Agustini, D., & Syakurah, R. A. (2022). Health professional student's volunteering activities during the COVID-19 pandemic: a systematic literature review. *Frontiers in Medicine*, 9, 797153.
- Uzun, M. B., Gülpınar, G., & Iqbal, A. (2024). Exploring Volunteer Pharmacists' Experiences in Responding to 2023 Türkiye Earthquakes: A Qualitative Phenomenological Study. *Disaster Medicine and Public Health Preparedness*, 18, e60.
- Wang, L., Norman, I., Xiao, T., Li, Y., & Leamy, M. (2021). Psychological first aid training: a scoping review of its application, outcomes and implementation. *International journal of environmental research and public health*, 18(9), 4594.
- Yükseler, M., & Yazgan, J. (2022). Spontaneous Volunteers in Emergencies and Disasters. In *Natural Hazards-New Insights*. IntechOpen.
- Zewudie, A., Regasa, T., Kebede, O., Abebe, L., Feyissa, D., Ejata, F., ... & Mamo, Y. (2021). Healthcare professionals' willingness and preparedness to work during COVID-19 in selected hospitals of southwest Ethiopia. *Risk Management and Healthcare Policy*, 391-404.