

How community pharmacists are responding during COVID-19 in Malaysia: A cross-sectional survey

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Abstract

Background Coronavirus disease (COVID-19), caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), has resulted in profound health challenges across the globe. **Objective** This study aims to examine community pharmacists' views on their work environment, policies, and preparedness for safe retail patronage to prevent the transmission of COVID-19. **Setting** An online survey of pharmacists practicing in community pharmacy setting in Malaysia. **Method** A questionnaire-based, cross-sectional study was conducted in Malaysia to evaluate coping strategies of community pharmacists and pharmaceutical services provided during COVID-19 pandemic. Between May 1 and July 31, 2020, the questionnaire was distributed to pharmacists working in community setting nationwide utilizing a snowball sampling method. **Main outcome measure** Community pharmacists' perceptions on safety, resilience, organizational support, and pharmaceutical services offered during COVID-19 pandemic. **Results** A total of 217 pharmacists participated in the study. Most community pharmacists had reported a positive outlook and were able to balance working with self-care during this period. Most had reported to have access to personal protective equipment such as gloves and hand sanitizers. A large proportion of community pharmacies also installed physical barriers in doorways or in front of the counter, put markings on the ground to section areas to ensure physical distancing, and controlled the number of customers who could access the pharmacy during this period. Innovations reported to be implemented included teleconsultations and providing curb-side or drive-through delivery and pickups. **Conclusion** The findings suggest the front-line and essential roles of community pharmacists in delivering pandemic responses, creating the opportunity to determine areas where community pharmacy services can be incorporated to strengthen the public health system and improve patient health outcomes.

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Keywords

Coronavirus, COVID-19, Pandemic, Pharmacist, Public Health, Community

Impact on practice statements

- Community pharmacists can play a significant public health role in infectious disease mitigation.
- The COVID-19 pandemic has demonstrated key functions of community pharmacists in continuity of provision of medications, medication management, preventive health care services, chronic and acute disease management, and referral to care.
- Important predictors for coronavirus response include age, gender, and occupational role of pharmacists.
- Telehealth services provided through community pharmacies can transform practice and patient care.
- Future outbreak preparedness strategy should develop collaborations between community pharmacists and physicians.

Main text

Introduction

The coronavirus disease 2019 (COVID-19) pandemic is a global public health emergency that has culminated in substantial socioeconomic disruptions and distressing health consequences. This pandemic has to date resulted in excess of 1 million deaths since it was first reported in December 2019 [1], resulting in an unprecedented challenge to the health care system in every country globally, as they cope to identify and control the spread of the novel coronavirus [2]. With no effective prophylactic or therapeutic agent against the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [3, 4], prevention through supportive measures is the best approach to reduce the rate of infection such as the use of facial mask, hand hygiene, school and workplace closures, as well as physical distancing [5].

As one of the most highly accessible health care professional, community pharmacists are often the first point of contact in many health systems for the local communities who require health related advice on

COVID-19 [6]. In tandem with physicians practices rescheduling planned appointments for non-essential care, community pharmacies have now become the sole entry points to the primary health care services in many countries. Hence, it is essential that community pharmacists possess sufficient knowledge and information regarding COVID-19 to advise their patients, respond to inquiries, and be proactive in executing interventions to prevent the transmission of COVID-19 in communities.

In contrast to large health care facilities, community pharmacies do not have periodical, rigorous cleaning and disinfection to reduce environmental contamination. The tasks are inevitably undertaken by clinical staff (pharmacist), non-clinical staff (pharmacy assistants and dispensary technicians), or pharmacy management team. The availability of environmental sanitation and disinfection measures and practice of meticulous hand hygiene with readily available hand hygiene products would mitigate the risk of infection and provide some warranted reassurance of safety to both health care workers and patients. In addition, it is vital to evaluate the risk of occupational exposure to COVID-19 and provide staff with the necessary personal protective equipment such as masks, gloves, gowns, or goggles since physical distancing is often difficult to implement due to the relatively small spaces. This necessitates considerable caution, for instance, maintenance of safe physical distances between customers or staff, wearing of face masks by both customers and staff members, and frequent use of alcohol-based hand sanitizer in the community pharmacy compound. Improvement of public health requires effective leadership from the pharmacists who are central in providing rapid response, good coordination, and evidence-based approach that are well communicated between team members [7].

Aim of the study

While there have been several studies examining the community pharmacies response to COVID-19, only few studies investigated the response of private community pharmacies in Asia [8-10]. The objective of this study was to examine the community pharmacists' views on their work environment and policies, perceived risk and health, preparedness for safe retail patronage environment to prevent the transmission of infection, in addition to services and innovation offered during this period.

Ethics approval

The study was approved by the Monash Human Research Ethics Committee (Project ID: 25023).

Method

Study design and study period

This was a cross-sectional online survey conducted from May 1 until July 31, 2020 among registered community pharmacists practicing in Malaysia. Pharmacists who were working in a community pharmacy and provided informed consent were recruited. The survey comprised 34 questions formulated based upon guidance from the International Pharmaceutical Federation (FIP) health advisory [11], the Malaysian Ministry of Health, and Malaysian Pharmaceutical Society advice [12], websites from medical societies, as well as the authors' personal experience on community pharmacy practice. The questionnaire was subsequently reviewed by two pharmacy academics and pilot tested among 10 community pharmacist for clarity and ease of administration. The questionnaire was composed of four sections, including (1) services offered to the community during this period; (2) availability of workplace safety measures; (3) staff resilience; and (4) organization support received during the pandemic. A sum score for the final 3 domains was computed, with higher scores indicating better support, resilience, and ability to stay healthy during this period.

Survey administration

An invitation email together with the survey link to the online survey platform Qualtrics was sent to recruit practicing pharmacist through the Malaysian Pharmaceutical Society and the authors personal contacts. Invitations were also sent via informal pharmacist-only groups on the social media platform Facebook and Twitter, which were sharable to facilitate snowball sampling. Participants were provided with an explanatory statement describing the purpose of study, the risk and benefits; and that minimal personal information

was collected. A total of 3 reminder emails were sent to potential participants every fortnight to increase participation rates.

Statistical analysis

There were an estimated 2,000 community pharmacies that were operational in Malaysia. Assuming that there were a total of 4,000 community pharmacists working in community pharmacies, we estimated that we needed 187 responses in order to achieve a 95% confidence level and 7% confidence that these responses were representative of all pharmacists [13]. Descriptive information included participants' demographics and questionnaire response. To investigate the associations between sociodemographic profile of the participants and outcomes of level of agreement, the Spearman's rank correlation analysis was used. A *P*-value of less than 0.05 was considered to indicate statistical significance. All analyses were performed on using SPSS Statistics version 26 for Windows (IBM Corp., Armonk, NY, USA).

Results

A total of 217 community pharmacists took part in the online survey. The full questionnaire was completed by 135 respondents, representing a response rate of 62.2%. Participants were predominantly females (74.2%) and were aged 30 to 39 years (56.7%). Nearly all of the respondents were full time pharmacists (92.6%) who possessed a bachelor's degree and were either the pharmacist manager or proprietor. Characteristics associated with the study participants were described in Table 1.

Community pharmacist perceptions on safety, resilience, and support

A large proportion of participants agreed or strongly agreed that they had access to personal protective equipment to keep themselves safe (92.2%), and felt confident that they could remain healthy while working (84.6%). Participants also felt that during this pandemic, they had been able to balance working with self-care (85.2%) and kept a positive outlook on their capability to contribute (91.4%) to the society. Most participants felt that they had a good and supportive working relationships with their employer (93.4%) and were confident in their leadership team's decisions (85.6%) during this period. They also felt that they had sufficient access to the information needed for health and wellness benefits (75.0%) (Table 2).

Environmental and pharmaceutical service innovations during COVID-19

To ensure the safety of their staff and customers, most community pharmacists surveyed had modified the environment in their pharmacy to ensure safe passage of customers. These included the installation and creation of some form of physical barriers at the doorways or in front of the counter (60.0%). Some community pharmacies also added markings using tape on the ground to section areas to enable physical distancing between their customers, especially during payment or waiting for pharmacy services (70.4%). A large proportion of community pharmacies also provided disposable gloves available for staff use (61.5%), while most had also restricted the number of customers that would be allowed to enter the pharmacy (63.0%). Three in every four community pharmacies also had freely available hand sanitizers for use by customers (74.1%) and employees (81.5%). Some innovative services which were offered by community pharmacies included medication delivery (39.3%), remote consultations (31.1%), as well as curbside delivery (37.0%) and drive-through services of medications for their customers (33.3%). Interestingly, another one in four community pharmacies also started a new collaborative program with the neighboring doctors to refer their patients with chronic disease (Table 3).

Coronavirus response

We also examined how participants baseline characteristics affected their outlook and perception towards the coronavirus response. Pairwise associations using Spearman's rank correlation tests indicated strong and negative relationships between safety of work environment and age of pharmacists (Pearson correlation coefficient, $r=-0.188, P < 0.01$), staff resilience ($r=-0.229, P < 0.01$), and organizational support ($r=-0.308, P < 0.01$). The level of perceived organizational support was strongly correlated with gender ($r=0.578, P$

<0.01), whereas perceived safety of work environment was significantly associated with occupational role of pharmacists ($r=0.144, P <0.05$) (Table 4).

Discussion

To our best knowledge, this study is among the first cross-sectional study conducted in Malaysia to understand the context in which community pharmacists' responses, roles, and perceptions in the control of the COVID-19 transmission. We found that most community pharmacists were generally well prepared to cope with the pandemic, and had a positive outlook towards keeping themselves and their customers safe, which further affirm the instrumental role of community pharmacists in public health. While most community pharmacies had adapted their environment to minimize the risk of spreading infection, some community pharmacies went further in innovating new services, such as providing a drive-through as well as home delivery service to further minimize contacts among their customers. Interestingly, another key collaboration that was developed was referral services among other community pharmacies as well as with primary care doctors within the vicinity, which is rarely practiced in Malaysia due to competing commercial interests.

However, we found that less than one in every five community pharmacists in the survey reported to have installed acrylic glass barriers or perspex in front of the counter for the collection of medicine and utilized baskets to receive payments at cashier. This might be due to limited floor space and lack of infrastructure feasibility for reducing physical contact. Notwithstanding, the employees were protected with the complementary use of gloves and hand sanitizers. Furthermore, there was a growing opportunity for community pharmacists to exploit technologies to facilitate remote consultations, as presently practiced by 31.1% of the respondents. Investment has been insufficient in developing health technology industry. The COVID-19 pandemic has propelled the use of telehealth solutions to facilitate social and physical distancing, while maintaining quality of clinical care. To realize a telehealth-enabled future, novel engineering designs, products, and innovations, for instance, smart phones, wearable devices, and instrumented (smart) homes can be accoutred with environmental and biological sensors that are interconnected using 5G networks to monitor patient health and send messages to responsible clinicians and pharmacists when emergency situations are detected [14-16].

We observed an overall decrease in level of perception on the dimensions of safety, resilience, and support with increasing age of pharmacists. The majority of participants surveyed (74.7%) were mid-career pharmacists aged 30 to 49 years, while only 2.3% aged 60 years or older. It has been suggested that pharmacists' response to work-related conditions and experiences is dependent on age, with middle-age pharmacists expressing less satisfaction compared to both younger and older practitioners [17]. Our study resonated previous observations reporting that pharmacists 45 to 59 years old were more dissatisfied with their workload and attached more importance of their jobs to patients than did younger or older pharmacists [18]. We believe that this could be because senior members of the profession had prior experience to coordinate the response to past series of influenza outbreaks that were similarly been characterized by novel virus subtypes, specifically SARS outbreak of 2003, H1N1 Influenza of 2009, and New Avian Influenza Viruses H7N9 and H10N8 of 2013 [19]. As such, they could acclimatise better to the policies and work environment for which they have served over numerous years.

Data from this study also found some evidence of gender disparity in organizational support. Albeit a tactful bit of literature found no evidence for gendered differences in ability, the variation in perceptions demonstrates a potential effect of local social norms and cultural influences in achieving supportive organizational culture which is governed by the shared values and beliefs that influence workplace and employee behaviour [20]. As such, effective strategies involving legislation, allyship, leadership, and professional development of core competencies could transform organizational culture and climate towards gender equality in science, medicine, and global health, thereby optimizing health, social, and economic gains [21]. In many countries, the limited opportunities for hiring, merit, promotion, and access to productive resources of women in the fields of science and medicine warrant policy changes. This is needed in order to address and remove barriers to that will ultimately ensure engagement and participation of women in the workforce, resulting in increased satisfaction and more diverse recruitment [20].

The surprising correlation between perceived workplace safety and occupational role could be plausibly explained by external covariates, including the availability of higher operating budget, business revenue, and staff education programmes. Being the owner, partner or executive officer of a community pharmacy generally has the ultimate responsibility and authority to decide on the company's capital allocation, decision making, and operational management processes. Hence, the extent to which pharmaceutical care of patients and welfare of staff were distributed under the condition of a pandemic would stem from decisions and actions from the corporate boards.

The study has several limitations that are worth mentioning. As we did not perform a probability-based sampling method, our results may not be representative of the full diversity of the Malaysian population with respect to race and ethnicity. The questionnaire scope did not measure responses by race or ethnicity of the pharmacists, socio-economic status of the communities surrounding the pharmacies, geographical locations, and presence of public health programmes in the local settings. Nevertheless, we believe that a holistic approach to infectious disease control should embrace community pharmacies with public health agencies to address the upstream determinants of health. As such, community pharmacies represent an important infrastructure within the primary health care systems for combating the pandemic, serving a part in patient education, disease surveillance, and dealing with medical supplies to be stockpiled or redirected in an emergency [22]. The services that can be delivered in community pharmacy settings include medication dispensing for chronic and acute conditions, chronic disease management, recommendations for over-the-counter medications, medication management and adherence support, self-care recommendations, vaccinations, specimen collection, and point-of-care screening or testing services for rapid diagnosis and education of patients about results, lifestyle recommendations, and referral to specialty care if necessary [23-25].

There may be variations in responses regarding planning and preparedness of community pharmacies to disease outbreaks prior to stringent laws and stricter enforcement by the authorities since March 18, 2020 [26]. As such, the results of this study cannot explicitly refute other ecological drivers of change, which may have influenced results of this study. It is also noteworthy that the perceptions of pharmacists may change over time in response to social and physical environmental factors. Strict enforcement would improve compliance to rules and standard operating procedures introduced by the government and thus minimizing the risks of community transmission in pharmacies and public areas [27]. As compared to face-to-face interviews, our study was conducted through online survey which might lead to biased results because it could have dismissed those with high workload, scarce time, and limited connectivity.

The repercussions of lockdown are now being observed in the Malaysian society, where furloughs have turned into redundancies and recession takes effect. As such, we believe it is reasonable to anticipate not only sustained distress and considerable deterioration in supply chain and affordability of long term personal protective equipment along with pharmacy business and profit downturn, but emergence adverse health impacts of economic recessions due to the precarious job markets and weak social protection systems. The COVID-19 pandemic has engendered numerous daunting challenges for health service provision, especially with differing access to housing, food security as well as social connectivity, all which are related to public health. Therefore, appropriate and proportionate clinical duties and response to mitigate or manage coronavirus crisis require multidisciplinary high-quality pharmaceutical care from the community pharmacies, alongside sufficiently resourced services supported by government policies and programmes.

Conclusion

The findings support the readiness and integral work performed by the community pharmacists in supporting patients and local communities, particularly the critical role they have played as frontline team members during the COVID-19 pandemic. For society to control the transmission of emerging infections, it is essential that public health policies emphasized the need for technical, regulatory, and financial support from the government to improve protection of health care workforce and their communities against infectious disease, incorporating community pharmacists into nationally synchronized commitment to responding to any disease outbreak in collaboration with multidisciplinary teams of health care providers and specialists.

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