Role of Community Pharmacists in Engaging Digital Technology and Telehealth Services in Singapore

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ABSTRACT

Telehealth is an emerging sector in Singapore. During the Coronavirus Disease 2019 pandemic, telehealth enabled patients to access medical and medication-related services while supporting social distancing efforts. In this article, we provided an overview of the roles of community pharmacists in telehealth in Singapore. In collaboration with various telehealth providers, Watsons Singapore offered medication-related services including reviewing electronic prescriptions and optimizing medication regimens, for both local and international patients. While there were challenges to resolve, these collaborations allowed community pharmacists to continue to utilize their specialized skills in medication management and optimization in the new digital telehealth workflows.
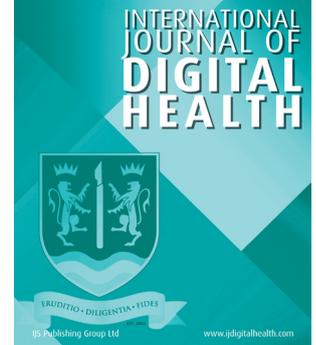
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Telehealth is the use of electronic communications to share medical information from one site to another, for the purpose of improving patient's health [1]. Since 2018, the Singapore Ministry of Health (MOH) [2], as part of a regulatory sandbox [3, 4], had worked together with various telehealth providers to provide digital options to medical services. The regulatory sandbox enabled MOH to maintain dialogue with industry players who were trialing new and innovative models of care, to allow these services to be developed and refined in a safe and controlled environment [5, 6]. With the arrival of the Coronavirus Disease 2019 (COVID-19) pandemic, telehealth served to support social distancing while enabling patients to access medical-related and medication-related services. In the United States, pharmacists had utilized telehealth to provide ambulatory care services [7]. In Singapore, pharmacy services (which included dispensing and sale of pharmacy medicines) were considered essential and community pharmacies operated as usual during the pandemic [8]. In this article, we provide an overview of the roles of community pharmacists in telehealth in Singapore, along with some challenges and learning points.

Electronic prescriptions have been used internally for many years in Singapore's public healthcare sector [9, 10]. In the private community sector, with the rise of telehealth services in recent years, paperless prescriptions are also becoming increasingly common. Doctors issue electronic prescriptions after remote consultations with patients and Watsons' pharmacists play an intermediary role in dispensing these prescriptions. An electronic prescription must be part of a closed loop system where the information has to remain complete, protected from unauthorized alteration, and patients cannot fill their medications beyond the quantity and instructions prescribed. In the community pharmacy setting, this is a major challenge due to the variety of digital interfaces used by different stakeholders. Hence, the pharmacy must have clear protocols discussed with the telehealth providers and regulatory bodies to ensure the uniqueness and authenticity of the electronic prescriptions [11, 12, 13]. With the proper protocols in place, community pharmacists can continue to perform their 'traditional' role of screening and optimizing the prescribed medications as well as counselling patients.

As a community pharmacy, Watsons Singapore explored potential partnerships with different digital healthcare partners, such as app-based telehealth providers WhiteCoat and HiDoc, which allowed patients to video-consult doctors and obtain electronic prescriptions [14, 15]. To facilitate new collaborations, a group of pharmacists also formed a digital healthcare team to focus on digital healthcare innovations.

The availability of telehealth services via partnership in Watsons pharmacies since January 2020 allowed the pharmacists to cater to a wider range of telehealth customers in Singapore. As of December 2020, 81% of Watsons pharmacies had dispensed WhiteCoat electronic prescriptions. From pharmacists' observations, more than 50% of patients were international patients residing in Singapore and were unable to travel due to border restrictions. This group of patients chose to utilize telehealth to access healthcare and medication services from pharmacies in Singapore.

Patients ranged from those wishing to minimize exposure to COVID-19 during clinic visits, to those who simply preferred the convenience of telehealth consultations at the time and location of their choice. Before dispensing, just as with physical prescriptions, pharmacists would screen for potential drug-related problems, discuss with doctors for potential regimen optimization, provide counselling to patients and offer non-pharmacological advice.

Due to COVID-19 border restrictions, many international medication delivery services became a helpful alternative for international patients who relied on Singapore for their medication supply, be it due to preferences or the unavailability of the medications in their country. Watsons partnered with Gmedes, a medication home delivery service provider delivering to Singapore, Asia Pacific, United States, United Kingdom and Middle East. Singaporeans and international patients could video-consult Singapore-registered doctors who might issue an electronic prescription. When Watsons received the electronic prescription, a pharmacist would proceed to review it, generate the medication usage instructions and pack the medications for pick-up and delivery by Gmedes [16]. Pharmacists also made sure border requirements were met for the medication packages.

In February 2020, Watsons pharmacists had served a total of 37 telehealth customers. The mean age was 34 ± 16 years old. The largest age group (65%) was 20–39 years old, who based on our pharmacists' observations, generally purchased contraceptive pills or acute medications such as for pain management. The second largest group (40–59 years old) utilized the telehealth services for long term chronic conditions such as high cholesterol and diabetes. The wide age range of 1–109 years old indicated that telehealth could be utilized across age groups, including adults who accessed telehealth services for their young children or elderly family members (*Figure 1*). The number of customers had since increased greatly over the subsequent months as more people became accustomed to video-consultation and telehealth services.

The adoption of digital technology in community pharmacy dispensing was not without its challenges. Pharmacists had to familiarize themselves with new software interfaces and workflows. Technical issues, especially during initial implementation of the telehealth related services in Watsons, disrupted normal workflows,
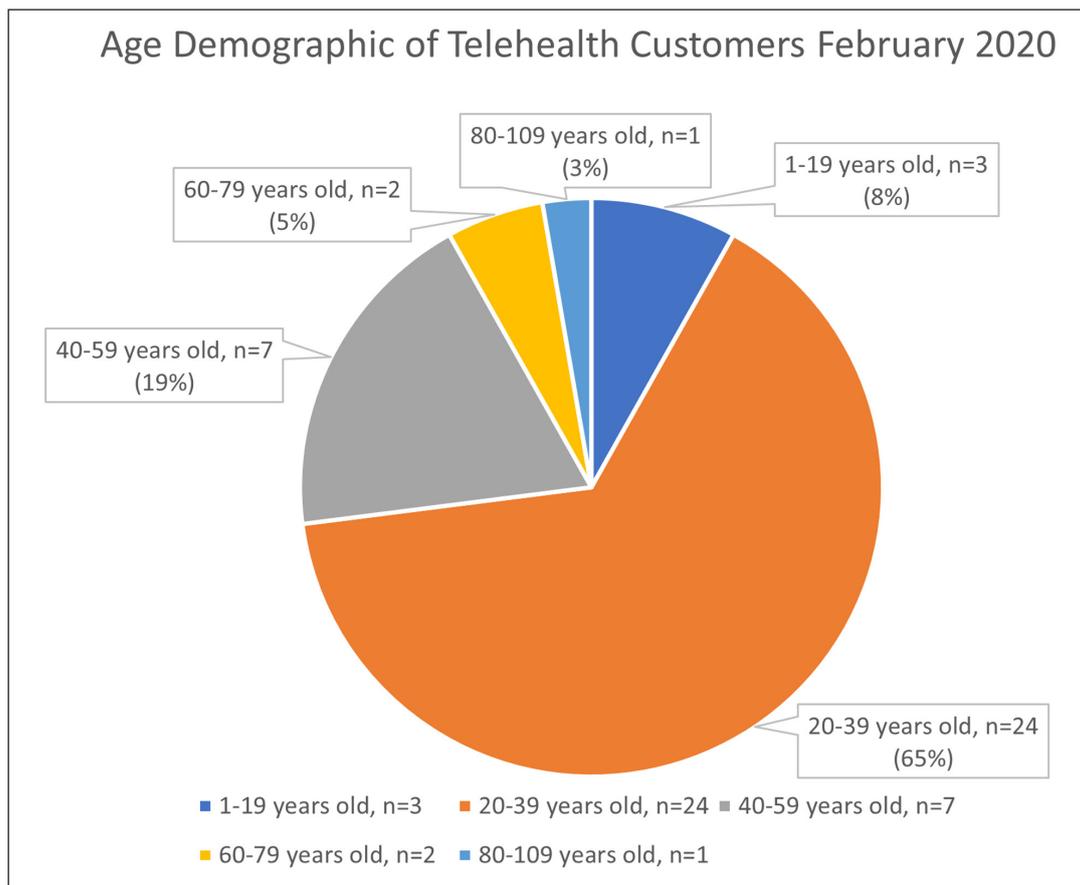
Figure 1 Age Demographic of Watsons Pharmacy Telehealth Customers February 2020 (n = 37).

leading to inconveniences and longer medication processing times. For example, pharmacists had to handle situations where patients were unable to present electronic prescriptions due to a technical glitch of a telehealth provider's app. Occasionally, due to patients' unfamiliarity with technology, pharmacists had to teach patients how to use the apps in order to access the telehealth services.

Nevertheless, digital technologies have allowed for new models of patient care through telehealth services. In the current pandemic, these services have minimized the risk of exposure from physical contact, providing reassurance to patients while maintaining the quality of care. To facilitate the adoption of these telehealth services, pharmacists must embrace change, be willing to learn new skills, collaborate with stakeholders and regulators, develop new protocols and educate patients on how to utilize these services. Through these new digital workflows, pharmacists can continue to add value to patient care with their specialized skills in medication management and optimization.

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REFERENCES

1. **Dowling RA.** Telemedicine: Are We Reaching A Tipping Point? *https://www.urologytimes.com/view/telemedicine-are-we-reaching-tipping-point*, 2015 (Accessed 28 February 2021).

2. **Ministry of Health Singapore.** *https://www.moh.gov.sg/*, 2021 (Accessed 23 March 2021).

3. **Ministry of Health Singapore.** MOH Launches First Regulatory Sandbox to Support Development Of Telemedicine. *https://www.moh.gov.sg/news-highlights/details/moh-launches-first-regulatory-sandbox-to-support-development-of-telemedicine*, 2018 (Accessed 13 March 2021).

4. **Allen** and **Gledhill.** Covid-19 and Issues Facing the Healthcare Community: How Can Telemedicine Help? *https://www.allenandgledhill.com/perspectives/articles/14781/sgkh-covid-19-and-issues-facing-the-healthcare-community-how-can-telemedicine-help*, 2020 (Accessed 13 March 2021).

5. **Smart Nation and Digital Government Office.** Telehealth. *https://www.smartnation.gov.sg/what-is-smart-nation/initiatives/Health/telehealth*, 2020 (Accessed 20 January 2021).

6. **Ministry of Health Singapore.** Licensing Experimentation and Adaptation Programme (LEAP) -A MOH Regulatory Sandbox. *https://www.moh.gov.sg/home/our-healthcare-system/licensing-experimentation-and-adaptation-programme-(leap)---a-moh-regulatory-sandbox*, 2020 (Accessed 20 January 2021).

7. **DeRemer CE, Reiter J, Olson JL**. Transitioning Ambulatory Care Pharmacy Services to Telemedicine While Maintaining Multidisciplinary Collaborations. *https://academic.oup.com/ajhp/advance-article-abstract/doi/10.1093/ajhp/zxaa427/6024778*, 2020 (Accessed 18 February 2021). DOI: *https://doi.org/10.1093/ajhp/zxaa427*

8. **Ministry of Trade and Industry Singapore.** Tightened List of Essential Services and Measures for Workplaces Which Remain Open. *https://www.mti.gov.sg/-/media/MTI/Newsroom/Press-Releases/2020/04/Tightened-List-of-Essential-Services-and-Measures-for-Workplaces-Final-Revision.pdf*, 2020 (Accessed 11 March 2021).

9. **Integrated Health Information Systems (IHiS).** Yearbook 2011. *https://www.ihis.com.sg/About_IHiS/Documents/Publications/IHiS%20Yearbook%202011-2012.pdf*, 2012 (Accessed 10 March 2021).

10. **KK Women's** and **Children's Hospital.** A Paperless Vision. *https://www.kkh.com.sg/news/faces-of-healthcare/a-paperless-vision*, 2019 (Accessed 10 March 2021).

11. **Singapore Attorney-General's Chambers.** Definitions and Regulations of Prescription, Health Products (Therapeutic Products) Regulations 2016, Part I Definitions and Part II Division 3. *https://sso.agc.gov.sg/SL/HPA2007-S329-2016#legis*, 2016 (Accessed 10 March 2021).

12. **Singapore Attorney-General's Chambers.** Electronic Transactions Act 2011, Provision of Originals. *https://sso.agc.gov.sg/Act/ETA2010#pr10-*, 2011 (Accessed 10 March 2021).

13. **Health Sciences Authority.** Guidance Notes on Supply of Registered Therapeutic Products through E-Pharmacy. *https://www.hsa.gov.sg/docs/default-source/hprg-ald/guide-mqa-032.pdf*, 2020 (Accessed 10 March 2021).

14. **WhiteCoat Holdings Pte Ltd.** *https://whitecoat.com.sg/*, (Accessed 18 February 2021).

15. **HiDoc Pte Ltd.** *https://www.hidoc.sg/*, (Accessed 18 February 2021).

16. **Gmedes Pte Ltd, Why G-MEDS.** *https://www.gmedes.com/Doctor/Why-G-MEDS-doctors-care-traveling-patients/#pharmacy*, 2019 (Accessed 22 January 2021).