

# Patient satisfaction and behavioural intention in using the home medication delivery service in an oncology centre



Keegan Lin<sup>1</sup>, Shao Jie Yeo<sup>2</sup>, Leow Jo Lene<sup>1</sup>, Lita Chew<sup>1,2</sup>  
<sup>1</sup>Department of Pharmacy, National Cancer Centre Singapore, Singapore  
<sup>2</sup>Department of Pharmacy, Faculty of Science, National University of Singapore



## Background

- The Medication Delivery Service (MDS) in Singapore has been around since 2015<sup>1</sup>.
- It was not until the COVID-19 pandemic that there was a significant increase in uptake<sup>2</sup>
- Voluntary use of MDS can increase adherence to medications and result in improvement in clinical outcomes, especially for patients with chronic diseases.
- Despite the benefits, patients using MDS have experienced barriers such as the lack of face to face encounter with the pharmacist<sup>3</sup> and unfamiliarity with the service<sup>4</sup>.
- To keep up with the sustained increase on reliance of MDS, there is a need to measure the satisfaction, as well as barriers and facilitators of patients and caregivers using MDS.
- Theory of Planned Behaviour (TPB) measures the relation of patient's intention and behaviour<sup>5</sup>.
- We hypothesise that current satisfaction of MDS is suboptimal due to existing barriers.

## Objectives

- Investigate MDS **satisfaction** of patients and caregivers in National Cancer Centre Singapore (NCCS).
- Identify **barriers and facilitators** of MDS adoption, using the Theory of Planned Behaviour.
- Recommend improvements** to encourage patients and caregivers to adopt MDS.

## Methods

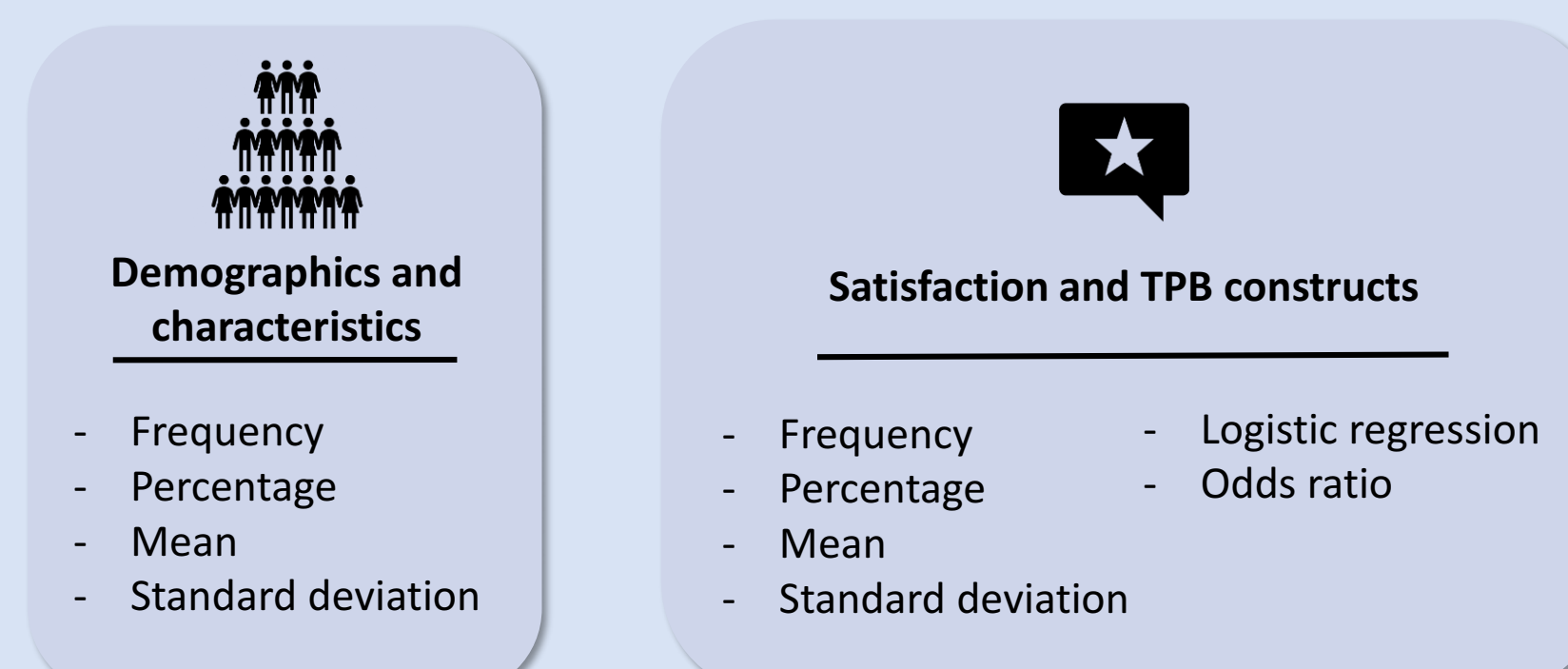
**Study Design:** A cross-sectional study was carried out on patients in NCCS.

**Participants:** From a registry of patients who signed up for MDS in NCCS.

### Survey:

- Consisted of questions on demographics, satisfaction, TPB and free response.
- TPB domain of perceived behavioural control was used to identify facilitators and barriers.
- Attitude was used to identify advantages and disadvantages of using MDS.

### Analysis:



## Results and Discussions

### Demographics



### Characteristics

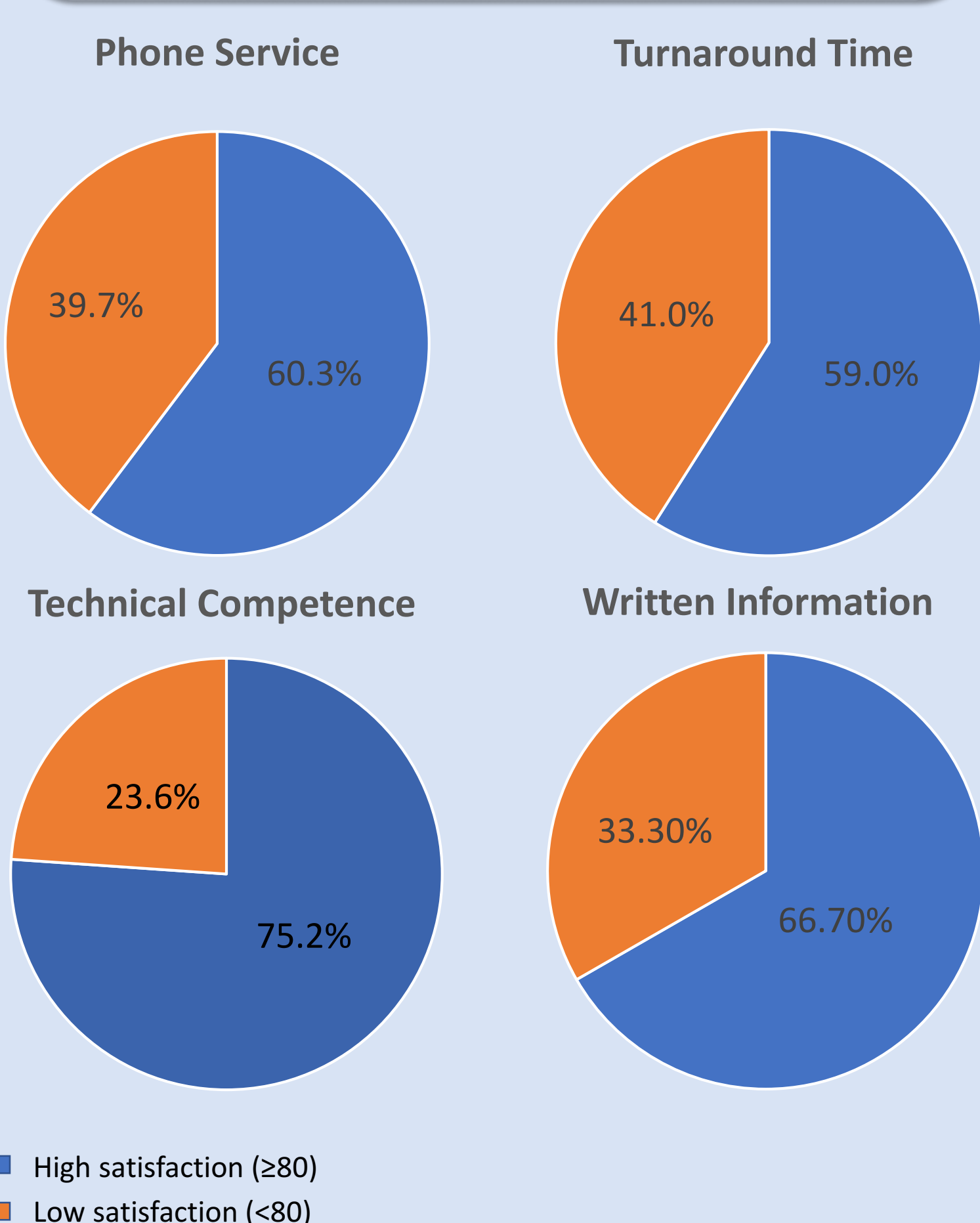
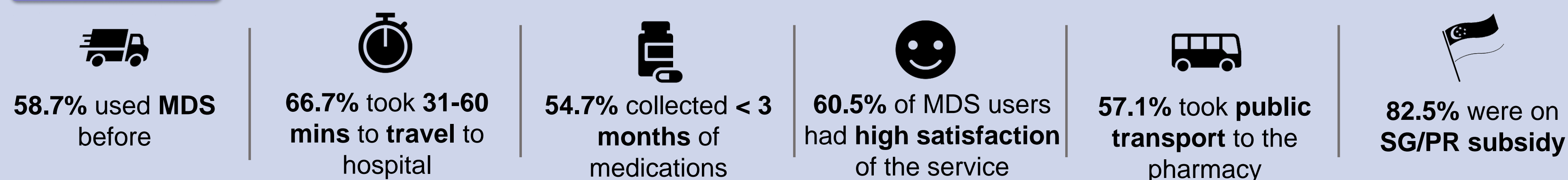


Figure 1. Proportion of high and low satisfaction across categories (n=517)

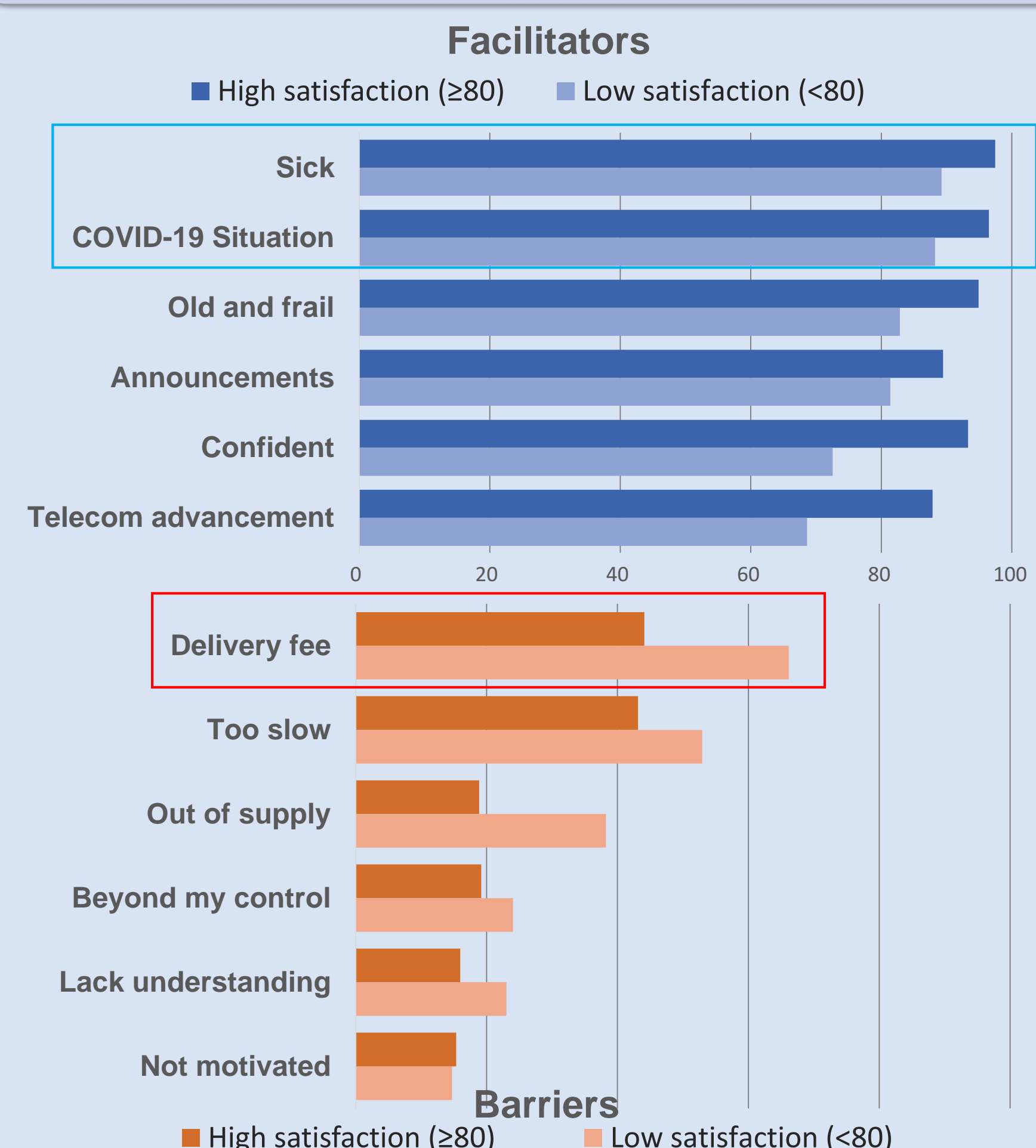


Figure 2. Agreement of facilitators and barriers of MDS between High Satisfaction (n=314) and Low satisfaction (n=203)

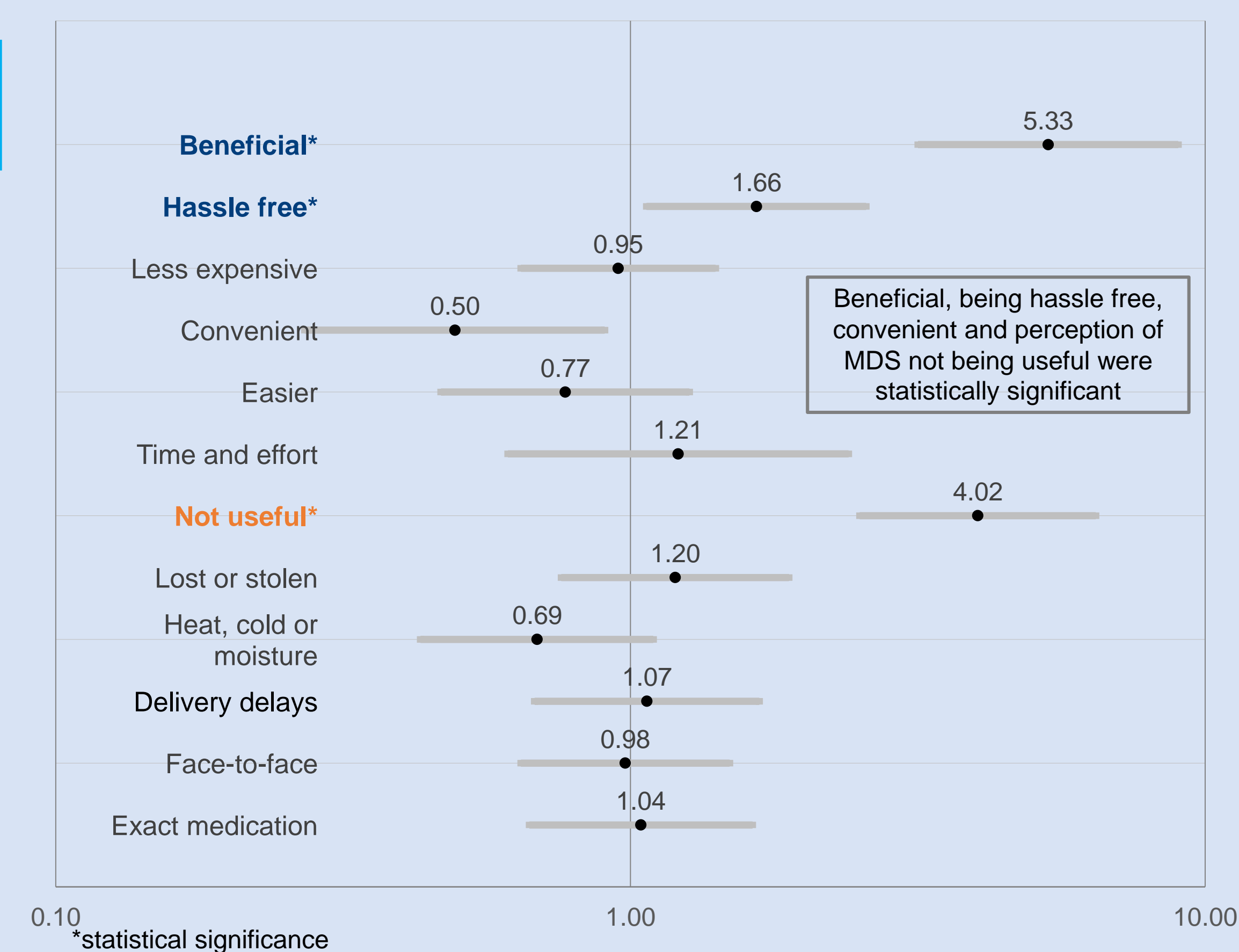


Figure 3. Odds ratio of attitude items with high satisfaction (n=517).

## Findings

### Satisfaction

- Participants were mostly satisfied with MDS, more than half had high satisfaction (60.5%).
- Participants were most satisfied with technical competence<sup>a</sup> but least satisfied with turnaround time (figure 1).
- Delivery delays was significant – participants concerned with delivery delays were less likely to feel satisfied with MDS.
- For phone service, participants were least satisfied on time spent with the pharmacist

<sup>a</sup>Technical competence includes confidence of pharmacy to prepares all medications correctly, reviewed and accuracy of the delivered medications.

### Facilitators

- Participants felt that MDS was safer than collecting at the pharmacy when they were sick or during the COVID-19 pandemic (figure 2).

### Barriers

- Participants with low satisfaction were found to have the most concerns with delivery fees (figure 2).
- In the free response, participants raised concerns of the cost and would reconsider MDS if the free delivery was removed.

### Advantage/Disadvantage

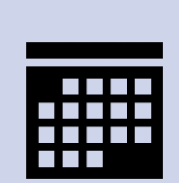
- Advantage/disadvantage ( $p < .001$ ) was found to be statistically significant using logistic regression analysis.
- Items on benefit, being hassle free and convenient were significant – a participant who perceived MDS as beneficial, hassle free and convenient would have a higher odd of high satisfaction with the service (figure 3).
- Participants who perceived that MDS as not useful to them had a higher odd of being less satisfied with the service (figure 3).

## Recommendations



Cost of service

- Cost of delivery should be within reasonable range to encourage adoption of MDS.
- Implementation of a delivery plan could help reduce cost and increase usage of service.



Delivery time

- Shorter intervals could be arranged between courier company and NCCS pharmacists.
- Promote use of locker stations for collection.
- Use of live tracking of parcel could keep patients in the loop for their delivery.



Ease of accessibility

- Appointment of support staff to help with the phone services.
- More telephone lines within pharmacy to cater for the increased demand of MDS.
- Promotion of Health Buddy app for making medication orders.

## Limitations

- The survey on MDS was conducted in NCCS. Results from this study on MDS will not be generalisable to a larger context within Singapore.
- While the study was able to measure the satisfaction and behaviour of many of the patients who had used the service, the survey had left out a majority of non-MDS patients who were not part of the registry.

## Conclusion

- Most participants were satisfied with MDS.
- More could be done to improve satisfaction on turnaround time and phone service.
- Barriers identified were delivery fees and the waiting time of the delivery.
- Recommendations were made on cost of the service, delivery time and ease of service.
- Findings from this paper would be useful in guiding future research and plans as adoption of MDS in Singapore is set to increase.

## References

- Singapore Enterprise. Factsheet on existing medication delivery services in Singapore. 2020.
- Tay TF. <https://www.straitstimes.com/singapore/coronavirus-public-healthcare-institutions-waive-medicine-delivery-fees-for-patients>. Accessed on 20 Oct, 2020.
- Werner P, Karnieli E. *J Telemed Telecare*. 2003;9(5):264-272.
- Stecokowych K. *J Pharm Pract*. 2019;32(6):637-647.
- Ajzen I. *Psychol Health*. 2011;26(9):1113-1127.

## Acknowledgments

I would like to thank the volunteers in the pilot survey and participants in the survey for their time and effort.

The research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The author(s) declare(s) that there is no conflict of interest.