Project Title

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

Project Lead and Members

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Organisation(s) Involved

National Cancer Centre Singapore

National University of Singapore

Project Period

Start date: September 2020

Completed date: October 2020

Aims

1. Investigate Medication Delivery Service (MDS) satisfaction of patients and caregivers in National Cancer Centre Singapore (NCCS).
2. Identify barriers and facilitators of MDS adoption, using the Theory of Planned Behaviour.
3. Recommend improvements to encourage patients and caregivers to adopt MDS.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

The advent of the COVID-19 pandemic served as a catalyst in realizing the potential of our healthcare institutions in rolling out the medication delivery service with our current infrastructure.

It was also an opportunity to revamp pharmacy services by creating a paradigm shift in the manner with which medications reach our patients (instead of waiting for prescriptions to be filled at pharmacies, patients wait in the comfort of their homes).

Conclusion

See poster appended/ below

Additional Information

Singapore Allied Health Conference (SAHC) 2021 – Best Poster Award: Innovation & Digital Strategies

Project Category

Applied Research

Keywords

Applied Research, Care Continuum, Quality Improvement, Efficient Care, Value Based Care, Patient Satisfaction, National Cancer Centre Singapore, National University of Singapore, Hospital-to-Home, Medication Delivery Service, Theory of Planned Behaviour

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

NUS National University of Singapore

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Background

- The Medication Delivery Service (MDS) in Singapore has been around since 2015[1.]
- It was not until the COVID-19 pandemic that there was a significant increase in uptake[2]
- 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[3] and unfamiliarity with the service[4].
- 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[5].
- We hypothesise that current satisfaction of MDS is suboptimal due to existing barriers.

Objectives

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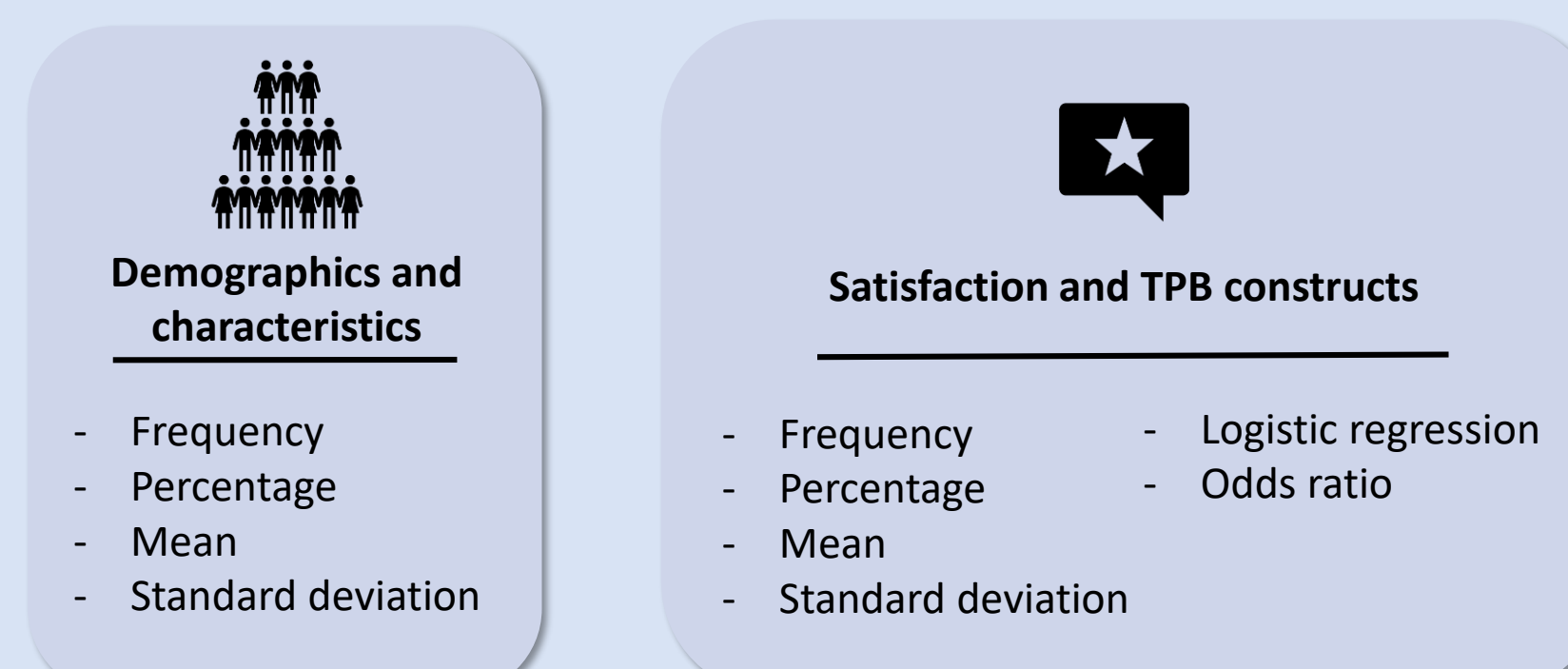
Methods

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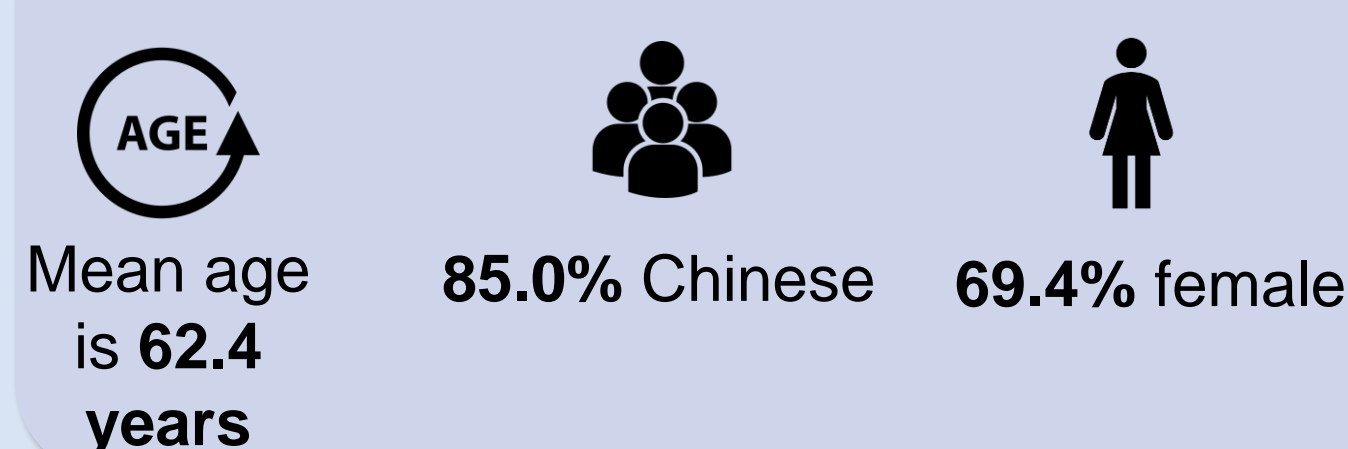**Survey:**
- Consisted of questions on demographics, satisfaction, TPB and free response.
- TPB domain of perceived behavioural control was used to identify facilitators and barriers.
- Attitude was used to identify advantages and disadvantages of using MDS.

Analysis:

Demographics and characteristics
- Frequency
- Percentage
- Mean
- Standard deviation

Satisfaction and TPB constructs
- Frequency
- Percentage
- Mean
- Standard deviation
- Logistic regression
- Odds ratio

Results and Discussions

Demographics

Mean age is **62.4 years** **85.0%** Chinese **69.4%** female

Characteristics

- **58.7%** used **MDS** before
- **66.7%** took **31-60 mins** to **travel** to hospital
- **54.7%** collected **< 3 months** of medications
- **60.5%** of MDS users had **high satisfaction** of the service
- **57.1%** took **public transport** to the pharmacy
- **82.5%** were on **SG/PR subsidy**
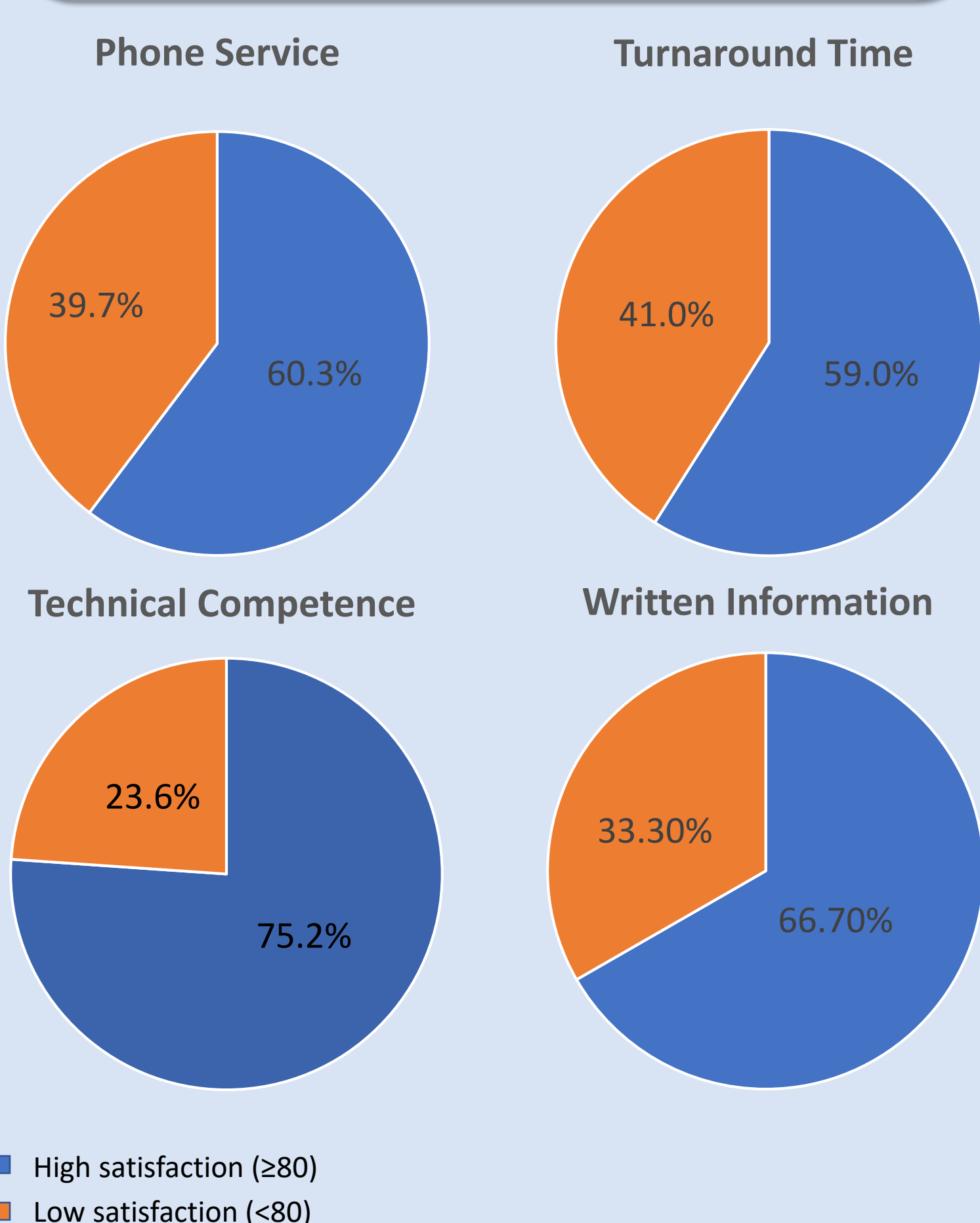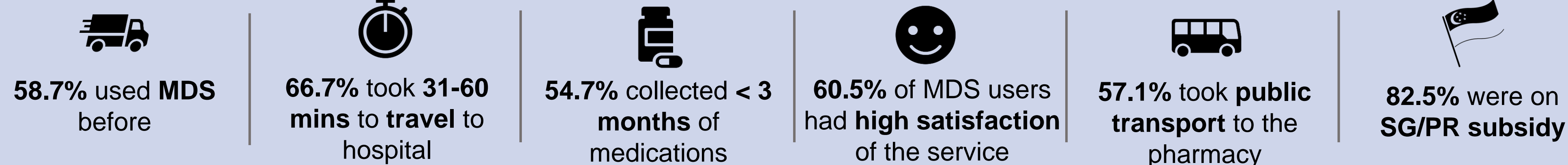
Figure 1. Proportion of high and low satisfaction across categories (n=517)

- High satisfaction (≥80)
- Low satisfaction (<80)

Phone Service: 60.3% / 39.7%
Turnaround Time: 59.0% / 41.0%
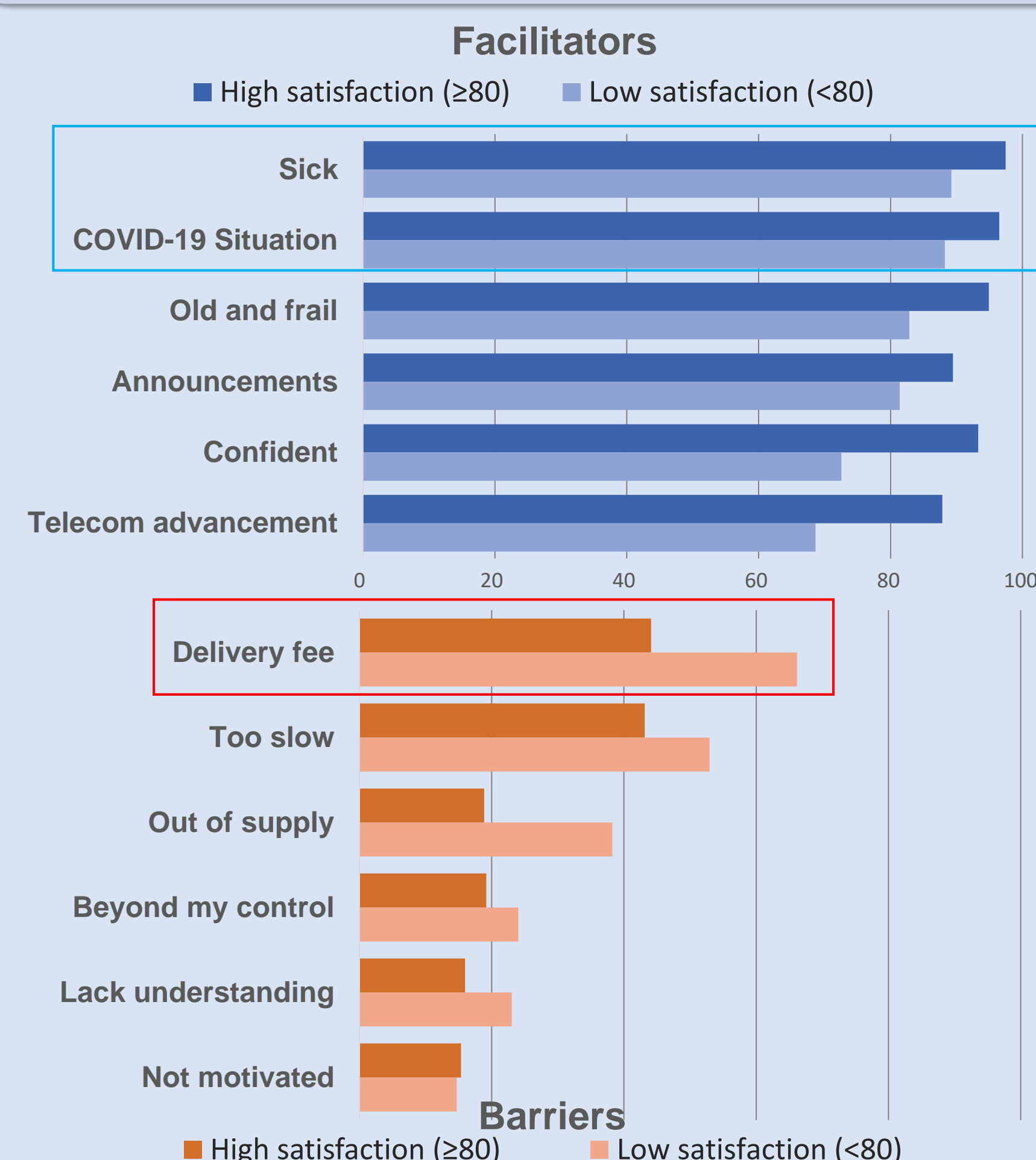Technical Competence: 75.2% / 23.6%
Written Information: 66.70% / 33.30%

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

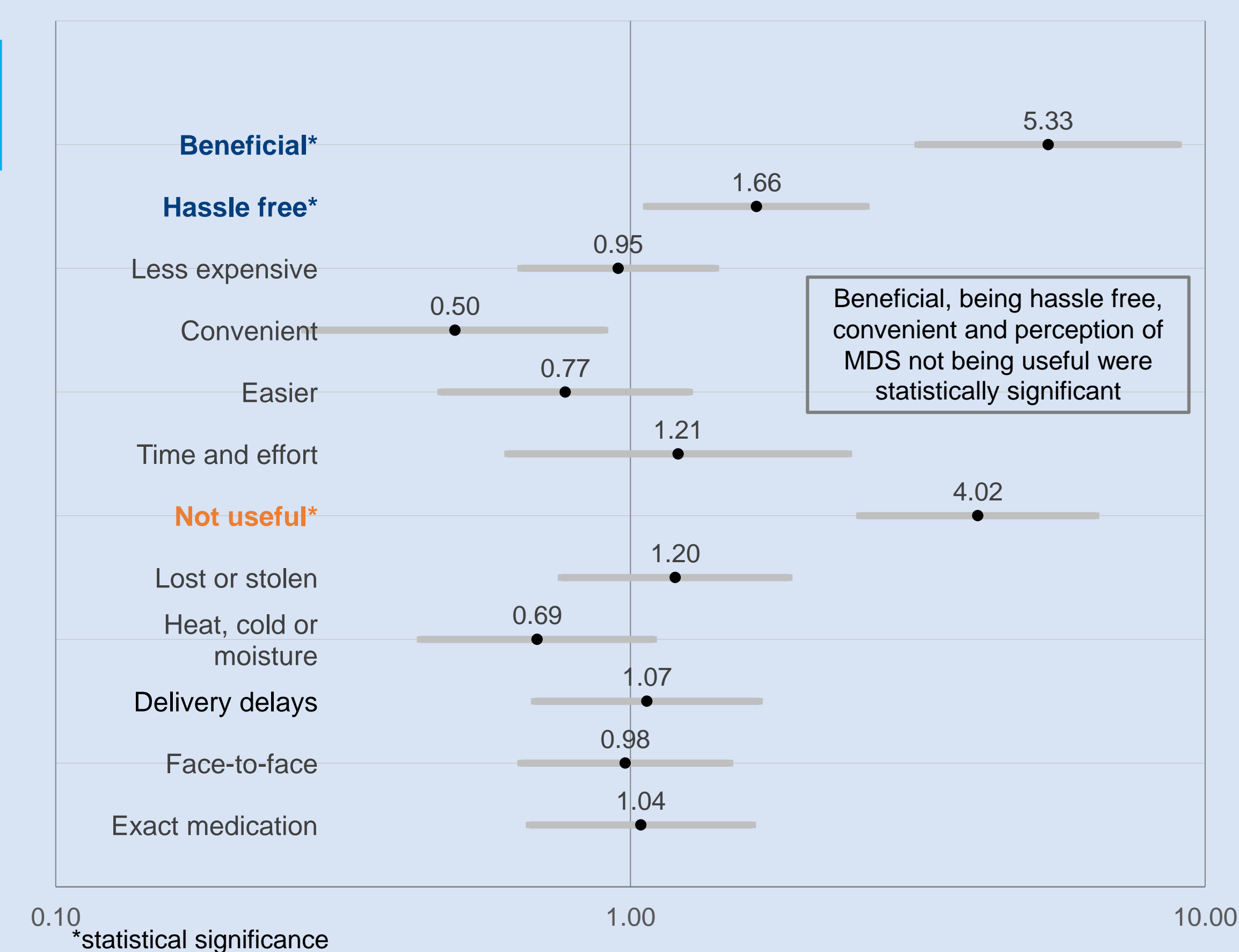Facilitators — High satisfaction (≥80), Low satisfaction (<80): Sick, COVID-19 Situation, Old and frail, Announcements, Confident, Telecom advancement

Barriers — High satisfaction (≥80), Low satisfaction (<80): Delivery fee, Too slow, Out of supply, Beyond my control, Lack understanding, Not motivated

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

Beneficial* 5.33
Hassle free* 1.66
Less expensive 0.95
Convenient 0.50
Easier 0.77
Time and effort 1.21
Not useful* 4.02
Lost or stolen 1.20
Heat, cold or moisture 0.69
Delivery delays 1.07
Face-to-face 0.98
Exact medication 1.04

*statistical significance

Beneficial, being hassle free, convenient and perception of MDS not being useful were statistically significant

Findings

Satisfaction
- Participants were mostly satisfied with MDS, more than half had high satisfaction (60.5%).
- Participants were most satisfied with technical competence^ 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
^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.
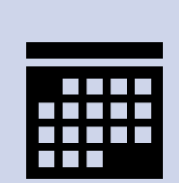
Delivery time
- Shorter intervals could be arranged between courier company and NCCS pharmacists.
- Promote use of locker stations for collection.
- Use of live tracking of parcel could keep patients in the loop for their delivery.

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
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4. Steckowych K. *J Pharm Pract.* 2019;32(6):637-647.
5. Ajzen I. *Psychol Health.* 2011;26(9):1113-1127.