Project Title

Tele- OMFT (Phase 1): AnAgileQITM Way to Improve the Orofacial Myofunct ional Therapy (OMFT) Consult at ion Process for Obst ruct ive Sleep Apnea (OSA)

Project Lead and Members

Project lead: Dr Phua Chu Qin

Project members: Dr Stephanie Yeap, Ryan Loh Lye Yan, Lee Heng Lun, Fong Sin Lee, William Yap

Organisation(s) Involved

Sengkang General Hospital

Healthcare Family Group(s) Involved in this Project

Allied Health, Nursing

Applicable Specialty or Discipline

Respiratory Therapy

Project Period

Start date: not indicated

Completed date: not indicated

Aims

Develop a mobile application that allows staff to remotely educate and train patients on OMFT exercises (Tele-OMFT), with the same level of effectiveness as in-person sessions and improving the OSA consultation process.

Background

Obstructive Sleep Apnea (OSA) is a condition where a person experiences repeated blockage to breathing during sleep. 30.5% of Singaporeans have moderate to severe OSA.

Orofacial Myofunctional Therapy (OMFT) is an evidence-based training exercise for the upper airway that has been shown in systematic reviews and meta-analyses to improve snoring and OSA. However, the current OMFT model of in-person training sessions and phone consultations, is unsustainable.

Methods

See poster appended/ below

Results

- Volume of bill printing had greatly reduced from 100% (Jan 2023 reference) to 6.43% (average of 8 months) from February 2023 to September 2023.
- With decreased in bill printing, cost of consumables and maintenance is estimated to reduce by $22,627 annually.
    - Consumables consists of Postage, Envelope, Toner and Paper
    - Lower priced maintenance plan was opted due to lower reliance of mail sealer machine
- Increased in productivity and operational efficiency with workflow streamlined.
- 390 man-hours saved per year in sorting and enveloping. Potential savings of $10,998.
- eBill resulted in a spillover effect on Mobile Pay (mPay) in Health Buddy. The take-up rate of patients paying through mPay is now higher with mPay transactions increasing by about 18% from February 2023 to July 2023.

Conclusion

Tele-OMFT demonstrates effectiveness equivalent to traditional in-person sessions, as confirmed by Sleep Unit staff. This modality possesses significant scalability and sustainability potential due to:

1. Eliminated patient travel time and reduced training disruptions especially during pandemic outbreaks.
2. Optimized staff utilization by redirecting repetitive training resources towards higher-value activities.

Phase 2:

Features validated in the mobile beta-test application will be integrated into the Health Buddy platform. This integration will empower Sleep Unit staff to gather real-time data and feedback from recruited OSA patients, thereby enabling further Tele-OMFT functionality enhancements.

Project Category

Technology

Digital Health, Mobile Health, Digital Apps, Digitalisation

Care & Process Redesign

Value Based Care, Utilisation

Keywords

Obstructive Sleep Apnea, blockage, breathing, Orofacial Myofunctional Therapy, Mobile application, remotely, videos, sustainability

Name and Email of Project Contact Person(s)

Name: Dr Stephanie Yeap

Email: Stephanie.yeap@mohh.com.sg

Singhealth

Sengkang General Hospital
SingHealth

Tele-OMFT (Phase 1): An AgileQI™ Way to Improve the Orofacial Myofunctional Therapy (OMFT) Consultation Process for Obstructive Sleep Apnea (OSA)

Dr Stephanie Yeap[1], Ryan Loh Lye Yan[2], Lee Heng Lun[2], Fong Sin Lee[3], William Yap[4], Dr Phua Chu Qin[1]

[1] Department of Otolaryngology Head & Neck Surgery, Sengkang General Hospital

[2] Sleep Unit, Sengkang General Hospital

[3] Quality and Risk Management Office, Sengkang General Hospital

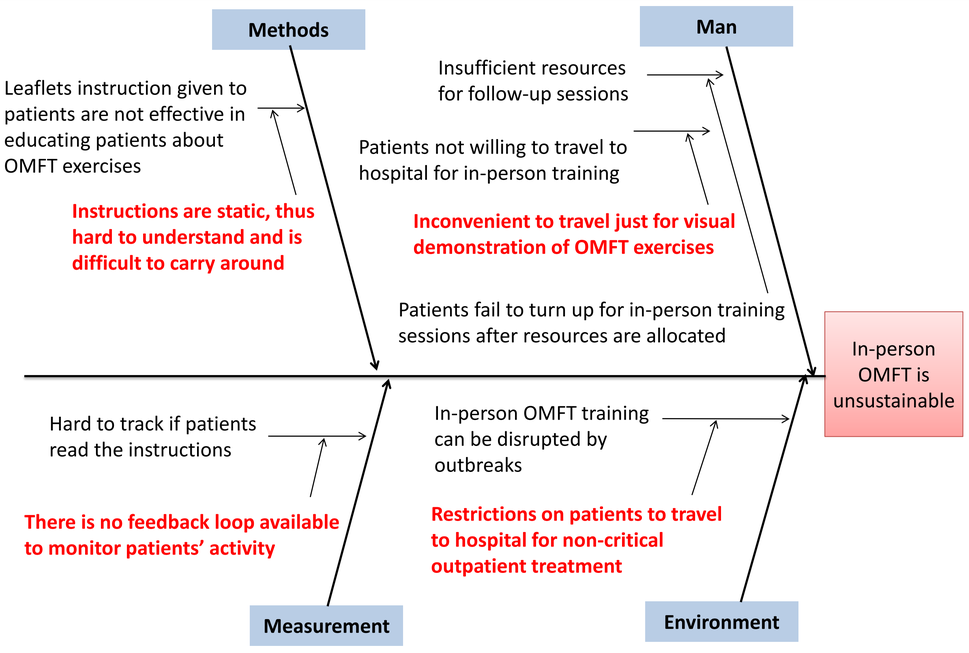
[4] SingHealth Institute for Patient Safety & Quality (IPSQ)

Background

Obstructive Sleep Apnea (OSA) is a condition where a person experiences repeated blockage to breathing during sleep. **30.5% of Singaporeans** have moderate to severe OSA.

Orofacial Myofunctional Therapy (OMFT) is an evidence-based training exercise for the upper airway that has been shown in systematic reviews and meta-analyses to improve snoring and OSA. However, the current OMFT model of in-person training sessions and phone consultations, is unsustainable.

Root Cause Analysis



Aims

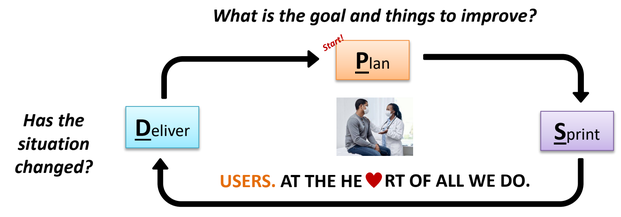
Develop a mobile application that allows staff to remotely educate and train patients on OMFT exercises (Tele-OMFT), with the same level of effectiveness as in-person sessions and improving the OSA consultation process.

Methodology

We developed the OMFT application iteratively using **AgileQI™** values and the **Plan-Sprint-Deliver (PSD) cycles**, incorporating user feedback after each "Sprint". Sleep Unit staff, outside the project team, were recruited as users to provide unbiased feedback and verification to optimise the application's functionality.

Values of AgileQI™

- Individuals and interactions
- Working solution
- Customer collaboration
- Responding to change



AgileQI™ is a quality improvement methodology that incorporates the Agile mindset and principles, focusing on the purpose, people and interactions; and brings value to the end user (customer), giving flexibility for the user's changing needs.

Sprint 1: Creation of OMFT Videos

Plan

User Stories from Project Backlog

a. Users can follow videos to perform OMFT exercises on their own.
b. Videos have audio and countdown timer.

Sprint

Tasks done to achieve User Stories

a. Film and edit exercise videos into suitable formats.
b. Overlay audio, instructions and timer.

Deliver

Gather user feedback

a. Users were able to follow videos and instructions to perform exercises.
b. Suggested improvements include:
   - Inclusion of subtitles
   - Positioning of countdown timer

Results: All users (N=6) successfully followed the videos and performed the exercises correctly

Sprint 2: Creation of Beta-Testing App

Plan

User Stories from Project Backlog

a. Users can access videos easily on mobile devices.
b. Users' progress can be monitored by Sleep Unit staff.

Sprint

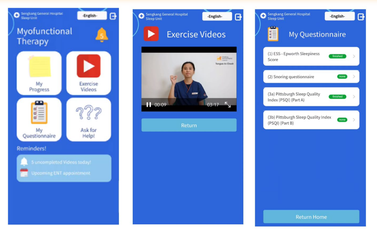
Tasks done to achieve User Stories

a. Develop platform for users to search and view videos on mobile devices.
b. Incorporate dashboard to track users' progress.

Deliver

Gather user feedback

a. Users were able to access and view all videos **within stipulated timeframe of 5 to 7 minutes** per video.
b. Suggested improvements include:
   - Improve readability
   - Improve user interface



Results: All users (N=6) successfully navigated the features in the app and completed viewing each video within **5 to 7 minutes**

Sprint 3: Administering Questionnaires

Plan

User Stories from Project Backlog

a. Users can access and answer clinical questionnaires easily.
b. Users' answers can be aggregated

Sprint

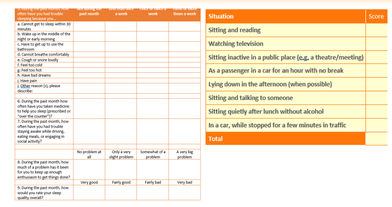
Tasks done to achieve User Stories

a. Add validated clinical questionnaires into application for patients to answer.
b. Add in function to aggregate results for further evaluation

Deliver

Gather user feedback

a. Users can access and answer all questionnaires **within the stipulated timeframe of 6 minutes.**
b. Gather insights to improve duration to complete questionnaires.



Situation	Score
Sitting and reading	
Watching television	
Sitting inactive in a public place (e.g. a theatre/meeting)	
As a passenger in a car for an hour with no break	
Lying down in the afternoon (when possible)	
Sitting and talking to someone	
Sitting quietly after lunch without alcohol	
In a car, while stopped for a few minutes in traffic	
Total	

Results: All users (N=4) could complete the questionnaires **within 6 minutes.**

Conclusion

Tele-OMFT demonstrates **effectiveness** equivalent to traditional in-person sessions, as confirmed by Sleep Unit staff. This modality possesses **significant scalability and sustainability potential** due to:

1. **Eliminated patient travel time** and **reduced training disruptions** especially during pandemic outbreaks.
2. **Optimized staff utilization** by redirecting repetitive training resources **towards higher-value activities**.

Phase 2:

Features validated in the mobile beta-test application will be integrated into the Health Buddy platform. This integration will empower Sleep Unit staff to gather real-time data and feedback from recruited OSA patients, thereby enabling further Tele-OMFT functionality enhancements.