

## **Project Title**

Patient-Reported Outcome Measures of the Geriatric Service Hub: A Mixed Methods Evaluation

## **Project Lead and Members**

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## **Organisation(s) Involved**

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2 Department of Geriatric Medicine & Institute of Geriatrics and Active Aging, Tan Tock Seng Hospital, Singapore

3 Institute of Policy Studies, National University of Singapore, Singapore

4 Healthcare Services & Outcomes Research Department, National Healthcare Group, Singapore

## **Healthcare Family Group(s) Involved in this Project**

Allied Health, Doctor

## **Applicable Specialty or Discipline**

Geriatric Medicine

## **Project Period**

Start date: 01-Apr-2019

Completed date: 31-Mar-2023

## **Aims**

To determine the GSH's effectiveness by assessing changes in patient-reported outcome measures (PROMs) in view of patients' perceived experiences.

## **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Lessons Learnt**

- Participants reported improved Quality of life post-GSH enrolment, which supports the GSH as a care model for managing frailty in the community
- Participants shared motivations and difficulties in adhering to recommended care plans, which can be taken into account for implementation and effectiveness of future care models
- Moving forward, we believe that more emphasis could be recommended to stakeholders on patient education to further motivate and sustain behavioral changes.

## **Conclusion**

See poster appended/ below

## **Additional Information**

Singapore Health & Biomedical Congress (SHBC) 2022: Singapore Young Investigator Award (Health Services Research) (Oral category) – (Gold Award)

### **Project Category**

Applied/ Translational Research

Quantitative Research, Qualitative Research

Care & Process Redesign

Value Based Care, Patient Reported Outcomes Measures

### **Keywords**

Frailty Care, Comprehensive Geriatric Assessment, Care Coordination,  
Multidisciplinary Team Care

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# Patient-Reported Outcome Measures of the Geriatric Service Hub: A Mixed Methods Evaluation

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## Introduction

- Singapore has an ageing population, which could lead to a growing number of frail older adults. Hence, there is a need for the Singapore healthcare system to identify and manage frailty.
- The Geriatric Service Hub (GSH) is a novel care model that identifies and manages frailty among community-dwelling older adults. GSH includes comprehensive geriatric assessments (CGAs), development of individualised care plans (ICPs), care co-ordination by a multi-disciplinary team and a variety of services to cater to healthcare and social needs.
- **Study Aim:** To determine the GSH's effectiveness by assessing changes in patient-reported outcomes measures (PROMs) in view of patients' perceived experiences.

## Methods

### Quantitative Methods

- **Study design:** Prospective single-arm pre-post design without controls. Interviewer administered a survey at baseline, 3- and 6-months post-enrolment for patient activation (13-item Patient Activation Measure ;PAM-13), functional status (Barthel Index; BI), quality of life (QoL; EuroQoL 5-dimension 5-level; EQ-5D-5L) and healthcare experience (Consumer Assessment of Healthcare Provider System; CAHPS).
- **Participants:** 168 GSH enrollees, aged 65 and above, Clinical Frailty Scale (CFS) Score 4-7, with no cognitive or hearing impairment.
- **Data Analysis:** Analysis for PAM-13, BI and EQ-5D-5L was via general linear mixed-models with nesting at participant level.
  - Model 1 (M1): Model with time as predictor (unadjusted).
  - Model 2 (M2): M1 with predictors including demographic (age, gender, ethnicity, education, living accommodation) and GSH site. CFS was included as a predictor for PAM-13 and EQ-5D-5L while PAM-13 was included as a predictor for BI and EQ-5D-5L.
- Analysis for CAHPS was done by computing weighted mean scores and difference percentages as recommended by AHRQ.

### Qualitative Methods

- **Participants, study design and procedure:** Face-to-face in-depth interviews (IDIs) were conducted in English or Mandarin for 30 GSH enrollees. Interview aimed to document the patient journey, experiences and challenges faced. Interviews were recorded and transcribed verbatim. Results were used to support PROMs.

## Results

Table 1. Health-related PROMs of GSH participants (n=168)

		B (S.E.) (95% CI)			
		PAM-13	BI	EQ-5D-5L	
M1	Time	0.8 (0.8) (-0.7 to 2.4)	-0.1 (0.1) (-0.3 to 0.1)	<b>0.022 (0.008)</b> <b>(0.007 to 0.037)</b>	
	Time	0.8 (0.8) (-0.7 to 2.4)	-0.10 (0.1) (-0.3 to 0.0)	<b>0.022 (0.008)</b> <b>(0.007 to 0.037)</b>	
M2	CFS (Ref: 4)	5	-9.0 (2.3) <b>(-13.6 to -4.4)</b>	-	-0.090 (0.024) <b>(-0.138 to -0.042)</b>
		6-7	-13.5 (3.7) <b>(-20.8 to -6.2)</b>	-	-0.267 (0.040) <b>(-0.345 to -0.189)</b>
	PAM-13	-	0.0 (0.0) (-0.0 to 0.0)	0.000 (0.000) (-0.001 to 0.001)	

Note: Significant effects are bolded. The remaining predictors did not show consistent significant effects.

- Results suggest **significant improvements** in participants QoL and **maintenance** of patient activation and functional status. Support from patient IDI results

### Low motivation in maintaining physical exercises

"...I ask him to walk up and down. He doesn't want to, only sleep..." PAT-C-08, Caregiver to GSH patient

### Challenges complying with recommended exercises

"...I live alone, to stand here and pull the band – I can't stand for so long so I don't dare..." PAT-C-10

- **Frailty as a significant predictor** of patient activation and QoL.
- **Lack of effect of patient activation** as predictor for functional status and QoL. IDI results also suggest that mixed results regarding patient activation.

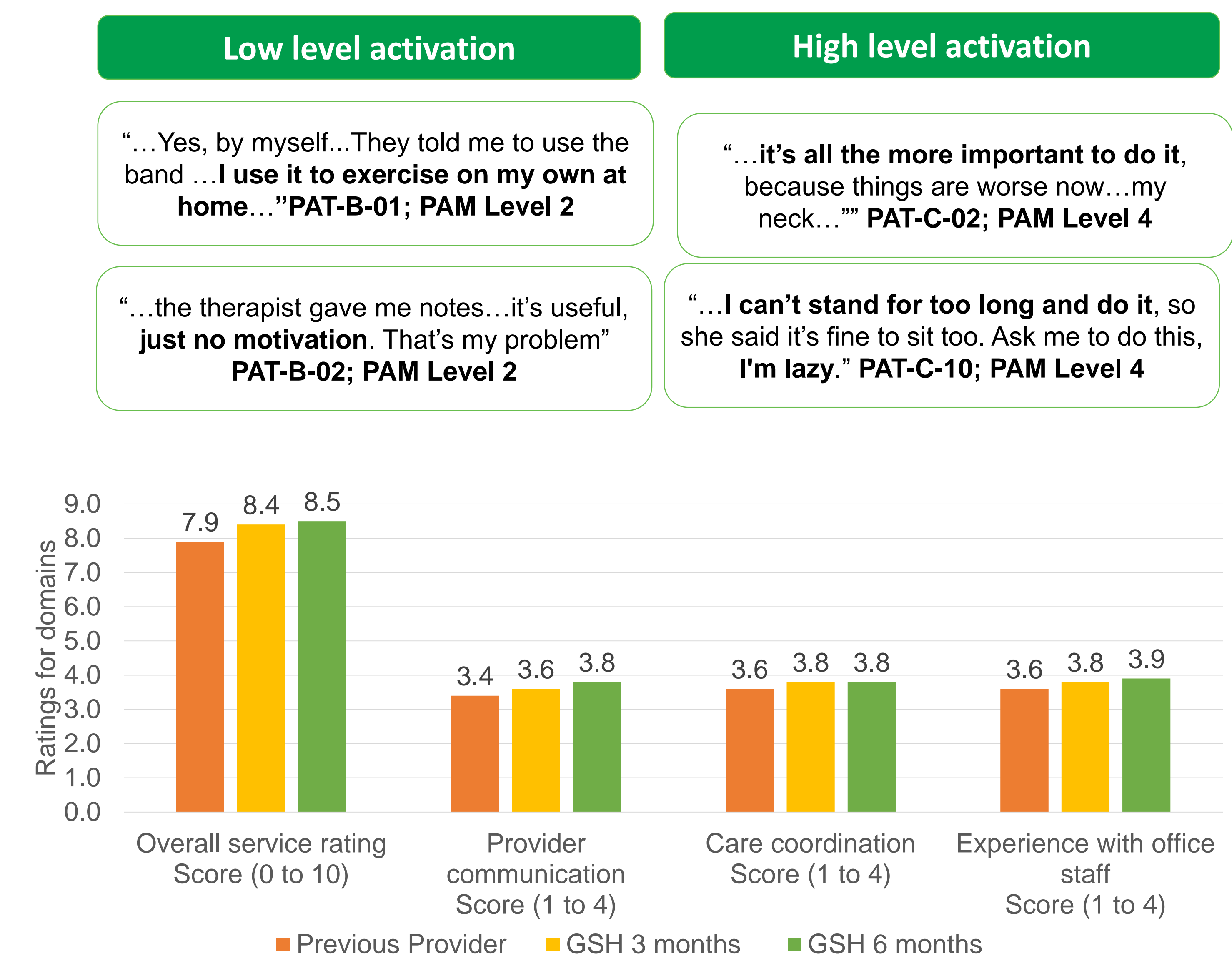


Figure 1. CAHPS composite scores and percentage differences relative to usual care (n=168)

- Consistent with results from patient IDI, **participants report better healthcare experience rating** for the GSH than their previous provider.

"The geriatrician was **nice**... also saw a allied health profession...(she) **gave quite useful information**...is quite nice, **patient and friendly**..." (PAT A-02)

"The primary care doctor is **very good**, (she) **has a lot of suggestions**... recommendations are **very good and helpful**..." (PAT B-06)"

## Discussion

- Our findings of improved quality-of-life and healthcare experience post-enrolment support the GSH care model for managing frailty in the community.
- Participants with lower CFS seem to report better patient activation and QoL than other groups. Suggests that GSH model might be more effective in identifying and managing the mildly frail.
- Mixed results of participants' activation could explain maintenance and lack of predictability of functional status and QoL
- Further discussions with MOH and stakeholders to identify patient motivation and difficulties, and to include patient education to motivate and sustain behavioural changes.

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