

Project Title

Identify Older Adults with Malnutrition in Community and Provide Effective Interventions to Improve Quality of Life

Project Lead and Members

Project lead: ANC Wang Ling

Project members: Dieticians Ms Ong Hui Wen and Ms Ng Puay Shi,

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Operations executive Ms Lee Si Hui

Advisors: APN Dr Chen Wei Ting & NC Ms Joey Yeo

Organisation(s) Involved

Community Health - Division for Central Health (DCH)

Healthcare Family Group(s) Involved in this Project

Nursing, Nutrition and Dietetics

Applicable Specialty or Discipline

Community Health Team (CHT)

Project Period

Start date: 11/1/2022

Completed date: 30/11/2022

Aims

- This study aims to identify older adults who were malnourished or at risk, and improve their health status and wellbeing by nutritional interventions.

Background

- Malnutrition is a serious problem among older adults as it is known to be closely associated with higher mortality and morbidity rates, physical decline, fatigue, reduced quality of life and increased healthcare cost (Phillips et al, 2010).

Methods

- Population and Sampling: In collaboration with Integrated Dementia (Home-based) Assisted Living project (IDeAL@115),
 - 30 residents were recruited during community nurse post (CNP) @115.
- Inclusion:
 - Participants age 60 years and above
- Exclusion:
 - Participants who rejected enrolment to CNP
 - Participants who are cognitively and mentally unstable
 - Participants who are unable to give informed consent
- Data collection:
 - This study aims to perform Nutri-care assessment upon initial CNP enrolment, 1st month and 6th month post enrolment.
 - As this study is still on-going (at time of SHBC'22), only data collected over the first 5 months period (January 2022 to May 2022) was presented.
- Instruments:
 - Nutritional Screening Tool (NST)
 - Problem Rating Scale for Outcome (PRSO) in Omaha system

Concepts	1	2	3	4	5
Knowledge: Ability of the client to remember and interpret information	No knowledge	Minimal knowledge	Basic knowledge	Adequate knowledge	Superior knowledge
Behavior: Observable responses, actions, or activities of the client fitting the occasion or purpose	Not appropriate behaviour	Rarely appropriate behaviour	Inconsistently appropriate behaviour	Usually appropriate behaviour	Consistently appropriate behaviour
Status: Condition of the client in relation to objective and subjective defining characteristics	Extreme signs/symptoms	Severe signs/symptoms	Moderate signs/symptoms	Minimal signs/symptoms	No signs/symptoms

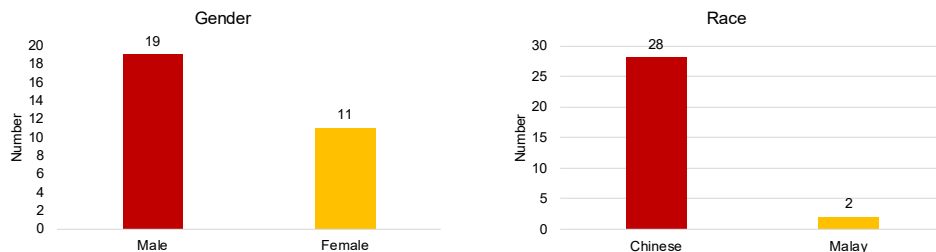
- Patient-reported outcome measure and patient-reported experience measures (PREMS & PROMS) modified from 'The Nutrition and Dietetic Patient Outcomes Questionnaires Adult Patient (NDPOQ-A)'

	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
1) Helped you understand better of your condition					
2) You were able to put into practice					
3) Made you feel confident in the choices you make in choosing your food					
4) Helped you to better understand how to manage your condition					
5) Helped your general well-being improve					
6) Are you motivated to make long-term lifestyle changes?					

- Nutritional Interventions:
 - Targeted brochures
 - Nutritional counselling by dietician/nurse
 - Healthy lunch prepared by central kitchen in IDeAL@115
 - The interventions were individualized to participants' NST score.

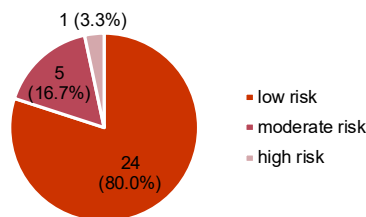
Results

- Demographic: A total of 31 residents had participated in the study
 - Mean age 70.9 years old
 - One resident has passed on and data was excluded from analysis



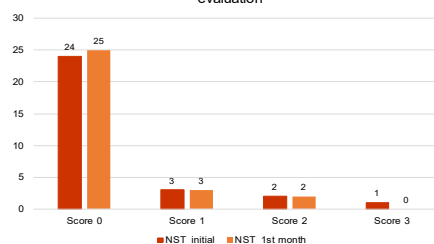
- Results- Nutritional Screening Tool (NST)
 - Initial assessment
 - 24 (80%) were scored at low risk (NST=0)
 - 5 (16.7%) at moderate risk (NST=1&2)
 - 1 (3.3%) at high risk (NST=3)

Figure 1: Outcome of NST (Baseline)

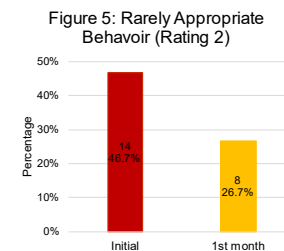
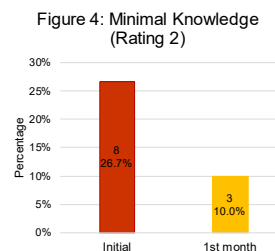
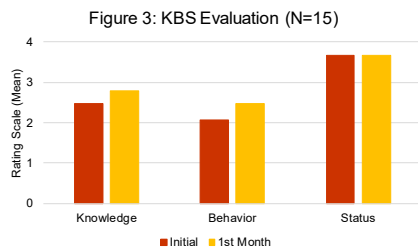


- A positive reduction in risk of malnutrition was seen during 1st month assessment

Figure 2: NST difference between initial and 1st month evaluation



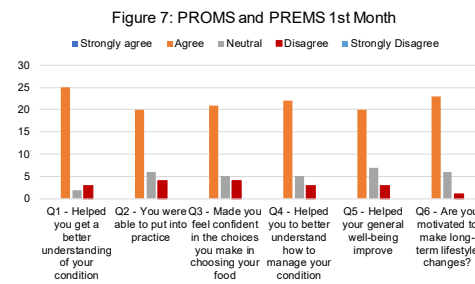
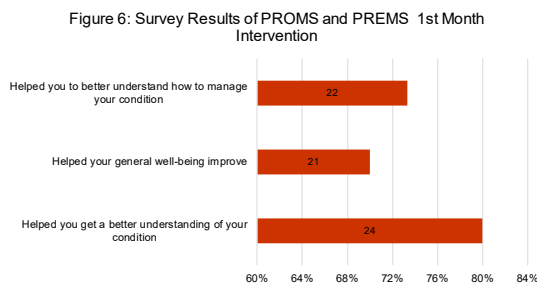
- Results-Omaha System (OS) Problem Rating Scale for Outcome (PRSO)Initial assessment
 - Figure 3 shows an overall improvement in:
 - mean KBS scores at baseline to 1st month assessment and
 - OS PRSO initial assessment, there were 8 (26.7%) residents with “minimal knowledge”, 14 (46.7%) with “rarely appropriate behaviour”. Subsequent KBS scoring at 1st month assessment, 3 (10%) presented with minimal knowledge and 8 (26.7%) with rarely appropriate behaviour (Figure 4 & 5).



Results- Patient-reported Outcome Measures and Patient-reported Experience Measures (PREMS & PROMS)

Based on post-intervention PROMS and PREMS at 1st month assessment,

- 22 (73.3%) verbalised they understood how to manage their condition better.
- 22 (73.3%) verbalised they understood how to manage their condition better.
- 21 (70%) verbalised their general wellbeing were improved.
- 24 (80%) verbalised they understood their condition better (Figure 6).
- Figure 7 shows a breakdown of participants' responses to the PROMS and PREMS questions at 1st month, which majority agreed on the usefulness of the interventions.



Lessons Learnt

- Low socioeconomic status, limited social contact, loss of interest in self-care were factors identified in this small sample that might have contributed to the residents' poor dietary choices, resulting in a higher NST score.
- Future studies at other CNPs will have to explore alternative interventions for comparable results as IDEAL@115 came with a central kitchen and provided fresh food ration to residents free of charge.
- Researchers could also explore clinical outcome measures such as
 - chronic diseases blood indices e.g.: HbA1c and lipid panel,
 - monitoring of blood pressure, BMI and
 - functional outcomes e.g.: Short Physical Performance Battery.

Conclusion

- The findings of this study based on the improvement in NST, KBS and PROMS & PREMS scores, suggested individualised nutritional interventions have positive impact on patient's nutritional status, knowledge, behaviour as well as self-reported insight, motivation, confidence and general well-being.

Additional Information

Singapore Health & Biomedical Congress (SHBC) 2022: Best Poster Award (Nursing)
(Posters category) – (Bronze Award)

Project Category

Care Continuum

Primary Care, Preventive Care, Community Health

Applied /translational Research

Mixed Methods

Keywords

Malnutrition in Older Adults

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Identify older adults with malnutrition in community and provide effective interventions to improve quality of life

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1. BACKGROUND / AIM

Community Health Team (CHT) nurses operate Community Nurse Post (CNP) across central region in Singapore to conduct comprehensive geriatric assessment and residents screened receive holistic health advice, intervention and case management.

CHT collaborated with Integrated Dementia (Home-based) Assisted Living project (IDeAL@115)^(1,4), a residential rental block allocated for frail and vulnerable residents with multiple comorbidities, enroll them for regular review at CNPs, support them to age in place and promote wellness.

CHT Nutri-Care was introduced to incorporate nutritional screening and interventions during the CNP sessions as malnutrition in older adults was often associated with high mortality, morbidity, physical decline, reduced quality of life and increased healthcare cost⁽³⁾.

2. METHODS

Research design

Prospective Descriptive Study (Pilot)

Sampling

30 residents were recruited via convenience sampling

Inclusion criteria:

- IDeAL@115 residents who consented to be enrolled to CNP
- Age 60 years old and above

Data collection

Preliminary data was collected over a 5 months pilot from January 2022 to May 2022. Research team conducted CHT Nutri-Care assessment upon initial CNP enrolment, at 1st month and 6th month post enrolment using the following tools. Data was collated into a Microsoft excel file and analyzed.

Instruments:

(1) Nutritional Screening Tool (NST) which received internal validation by TTSH Nutrition and Dietetics Department⁽²⁾, consists of 3 components, assessor will grade physical appearance, enquire on self reported change in appetite or intake over past 5 days or more and any unintentional weight loss over past 6 months, and categorised the malnutrition risk categories accordingly.

(2) Omaha System (OS) Problem Rating Scale for Outcome (PRSO) was used for care planning and evaluation. PRSO consists of three five-point, Likert-type scales to grade residents' Knowledge, Behaviour, and Status (KBS) over a range of severity⁽⁵⁾.

(3) Patient-reported outcome measures and patient-reported experience measures (PREMS & PROMS) consist of three five-point, Likert-type scales was modified from 'The Nutrition and Dietetic Patient Outcomes Questionnaires Adult Patient (NDPOQ-A)' and administered.

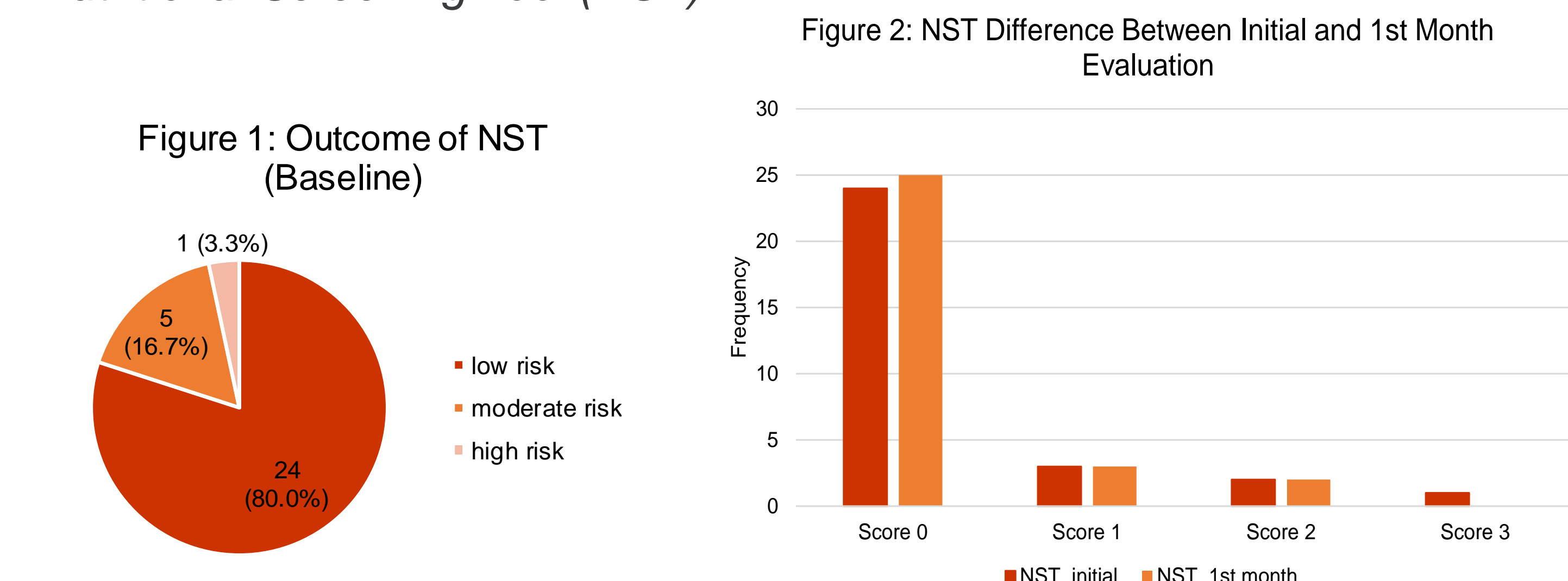
Additionally, targeted brochure and nutritional counselling were provided by the research team based on the NST score. Healthy lunch was prepared by a central kitchen in IDeAL@115 and provided free of charge to residents during weekdays.

Ethical Considerations Data was kept in an electronic file with password only known to research team. Participation of the survey was voluntary and anonymous. Consent was obtained from participants before recruitment.

Demographics: 31 residents participated in the study which consist of 12 female and 19 male with mean age at 71. 1 resident passed on hence data was excluded from analysis.

3. RESULTS

Nutritional Screening Tool (NST)



The study team reported during initial assessment on the 30 residents enrolled, 24 (80%) were scored at low risk (NST=0), 5 (16.7%) at moderate risk (NST=1&2) and 1 (3.3%) at high risk (NST=3). A positive reduction in risk of malnutrition was seen during 1st month assessment. (Figure 1 & 2).

Omaha System (OS) Problem Rating Scale for Outcome (PRSO)

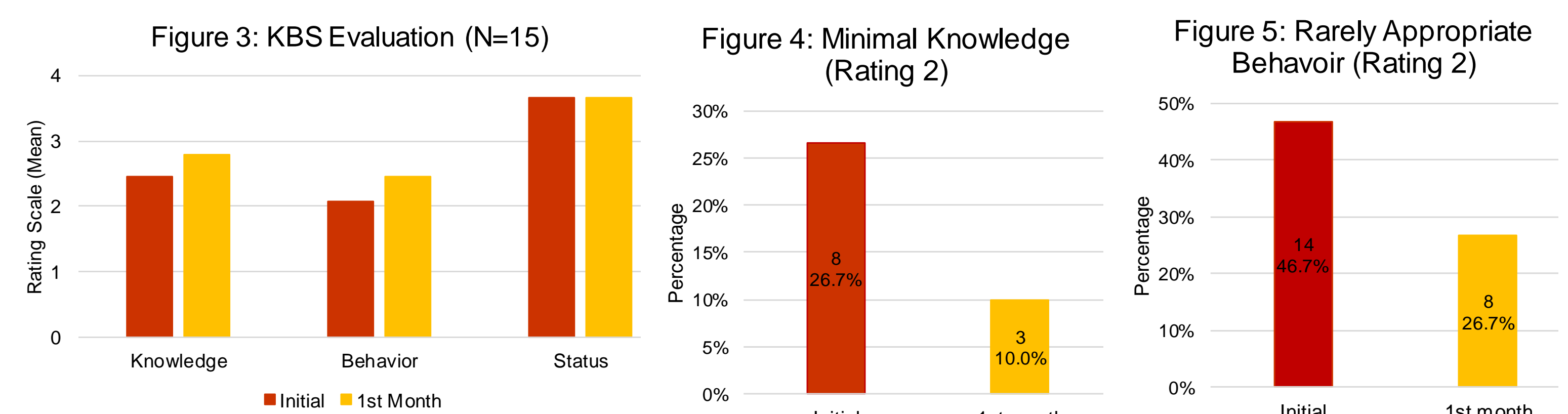
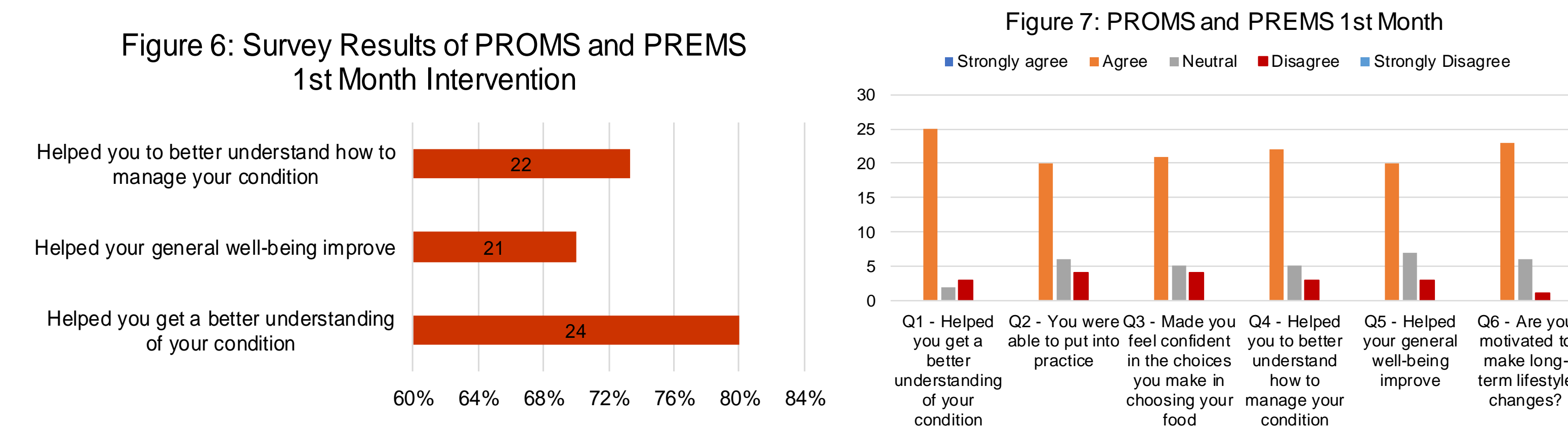


Figure 3 shows an overall improvement in mean KBS scores at baseline to 1st month assessment. In OS PRSO initial assessment, eight (26.7%) residents with "minimal knowledge", 14 (46.7%) with "rarely appropriate behaviour". It showed improved KBS scoring in 1st month assessment with 3 (10%) presented with minimal knowledge and 8 (26.7%) with rarely appropriate behaviour (Figure 4 & 5).

Patient-reported outcome measures and patient-reported experience measures (PREMS & PROMS)



Based on post-intervention PROMS and PREMS at 1st month assessment, 22 (73.3%) verbalised they understood how to manage their condition better. 21 (70%) verbalised their general wellbeing were improved. 24 (80%) verbalised they understood their condition better (Figure 6). Figure 7 shows a breakdown of participants' responses to the PROMS and PREMS questions at 1st month, which majority agreed on the usefulness of the interventions.

4. DISCUSSION

Low socioeconomic status, limited social contact, lost of interest in self-care were factors identified in this small sample that might have contributed to the resident's dietary choice. Further studies should be conducted on these influencing factors.

The findings of this study based on the improvement in NST, KBS and PROMS & PREMS scores, albeit preliminary, do somewhat suggest that nutritional interventions such as counselling and providing free healthy meals do have potential to positively impact on patient's nutritional status, knowledge, behaviour as well as self reported insight, motivation, confidence and general well-being.

Longitudinal impact on change in knowledge and behavioural change in dietary choices, remain to be studied. This study hopes to complete its 6 months evaluation and also to replicate in other community health post sites.

5. LIMITATIONS AND IMPLICATIONS

Future studies at other CNP will need to explore alternative support interventions for comparable results as IDeAL@115 came with a central kitchen which will prepare healthy balanced lunch and provide fresh food ration to residents free of charge. Researchers could also explore clinical outcome measures such as chronic diseases blood indices e.g.: HbA1c and lipid panel, monitoring of blood pressure, BMI and functional outcomes e.g.: Short Physical Performance Battery.

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