

Development of a Therapeutic Board Game (Karung Guni) for the Older Adults in Singapore

Organisation(s) Involved

Tan Tock Seng Hospital
National Healthcare Group

Project Lead and Members

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Project Period

01/02/2024 - 31/12/2024

Background

Singapore's population is aging rapidly, with the proportion of citizens aged 65 and above accounting for nearly 1 in 5 citizens in 2022, and almost 1 in 4 Singaporeans in 2030 (Prime Minister Office Singapore, 2023). For the older adults, regular participation in recreational physical activities is important to promoting health and well-being (Langhammer, Bergland, & Rydwik, 2018). Social interaction is also important in maintaining cognitive function, as well as reducing the risk of loneliness and depression (Gough et al., 2021). In Singapore, it has been found that though the elderly is living with their families, many are still feeling socially isolated (The Straits Times, 2021). Playing games is a mental, physical, social activity that greatly benefits seniors' emotional and physical health (Orange Valley, 2021). However, in our personal knowledge, we have noticed that the market lacks a variety of board games that are designed for the older adults in Singapore.

The purpose of this project is to trial and refine a board game prototype 'The Karung Guni Boss'. This board game was first created by two Occupational Therapists during the OT Day 2023 Game Design Competition, organised by the Occupational Therapy (OT) Department in Tan Tock Seng Hospital. 'The Karung Guni Boss' won first place during that competition.

'The Karung Guni Boss' is a local (Singapore) themed board game that caters to the older adult population in Singapore. The game play has action tasks which incorporates physical, cognitive, and social aspects, which encourages the older adults to participate in physical activity, cognitive engagement and social participation. Through gameplay, this game also hopes to improve the overall mood of the older adults in Singapore. This will also allow the older adults to engage in reminiscence as they put themselves in the shoes of a Karung Guni collector to 'collect' items which are visually appealing and easily recognisable due to their familiarity. Moreover, we hope that this board game can be a platform and means for families to engage with their loved ones, connecting across generations. We also envision it to be used in the community sector where older adults can engage in this activity independently with their peers in the community.

Aims

- To test the feasibility of the game prototype on the older adults in Singapore, with the hope that the game will be feasible as a source of therapeutic game play for the older adults in Singapore
- To understand the impact of the game prototype on the older adults in Singapore and identify areas for improvement, in order to refine the game prototype, with the hopes of exploring the use of the game in the wider communities of older adults in Singapore
- To optimise the cost of production to increase accessibility and affordability of 'The Karung Guni Boss' for the older adults in Singapore

Methodology

Firstly, our team worked with an external vendor 'Studio Grain', a creative consultancy specializing in brand strategy and design. They assisted in designing the packaging and art illustrations to accompany the instructions on the action and event cards. Translation services were also provided in areas of accompanying Mandarin texts to the current English texts, and developing the Mandarin, Malay, and Tamil versions for the rule sheet. A game consultant's expertise was also sought to ensure a smoother overall gameplay.

Secondly, we conducted a total of 14 group sessions (consisting of 2-5 players each session) at Tan Tock Seng Hospital Integrated Care Hub (TTSH-ICH) from August – September 2024.

- Inclusion criteria:** Aged >65 years old, able to follow simple one step instructions consistently, fair to good safety awareness, minimal assistance for transfers, fair to good static sitting balance, able to tolerate 1 hour of sitting tolerance (i.e. no known postural hypotension)
- Exclusion criteria:** Medically unstable, contact precaution, moderate to severe dementia, behavioural issues, poor sitting balance, poor sitting tolerance (i.e. known postural hypotension, non-weight bearing status for any limbs)

A participant survey form is conducted with every participant to understand their satisfaction of the game (eg. What they enjoyed about the game, improvements in mood), design of the game (eg. Size of the words on the cards), social aspect of the game (eg. Number of players in the game) and the overall gameplay (eg. Level of difficulty of the action). Facilitator's observations of the sessions are also recorded down to provide feedback on the gameplay.

Results

Success indicator 1: Using gameplay to improve mood

- Current outcomes: NA
- Expected outcomes: 70% of participants rate an improvement in their mood after playing the game
- Actual outcomes: 92% of participants agreed or strongly agreed that there is an improvement in their mood after playing the game, which exceeded our expectations by 22%

Success indicator 2: Rating the replay value

- Current outcomes: NA
- Expected outcomes: 70% of participants rate that they will want to replay the game again
- Actual outcomes: 82% of participants agreed or strongly agreed that they would love to play the game again, which exceeded our expectations by 12%

Success indicator 3: Ease of understanding

- Current outcomes: NA
- Expected outcomes: 70% of participants will rate that they are able to understand the game
- Actual outcomes: 94% of participants agreed or strongly agreed that the game rules were easy to understand and follow, which exceeded our expectations by 24%

Success indicator 4: Time spent using gameplay as means to boost physical, cognitive and social engagement

- Current outcomes: NA
- Expected outcomes: Our participants will spend additional time (1 hour/week) engaging in therapeutic game play through the board game 'Karung Guni' outside of clinical therapy sessions
- Actual outcomes: Our participants engaged in at least 30 mins to 1 hour/session of therapeutic game play through the board game 'Karung Guni' during their time outside of clinical therapy sessions

Success indicator 5: Observations of participants during gameplay

- Current outcomes: NA
- Expected outcomes: NA
- Actual outcomes:
 - Game Design: We observed that certain colours on the game components were difficult to distinguish them apart. We also observed that certain word use in the game were difficult for participant to pronounce.
 - Game Setup: We observed that the game components were disorganized on the table and would benefit from visual cues for proper placement of game components.
 - Game Play: We observed that participants who were not able to read or speak varying language/lack a common language required a facilitator to assist in explaining the instructions on the action and event cards to them. We also observed that there were an excessive number of "negative" event cards, causing the game to take a longer time to finish and causing the participants to feel discouraged easily. We also observed that sessions with repeated participants were ran more smoothly as they had a better understanding and familiarity of the game play.

Lessons Learnt / Discussion

Challenges Faced

Delay in Project Timeline

The project experienced delays due to the additional time needed for the process of sourcing and acquiring services from our external vendor.

Challenges in Patient Recruitment

The recruitment process faced setbacks as referring therapists encountered difficulties in identifying patients based on the predefined inclusion & exclusion criteria that were designed to ensure patient safety. Moreover, the majority of the patients at Integrated Care Hub usually stay for 2-4 weeks, limiting the new participant pool available for recruitment. To address this, adjustments were made to the exclusion criteria, allowing the inclusion of participants with varying weight-bearing precautions, as long they only require minimal assistance for transfers. Past participants who were interested were also permitted to take part in this game trial.

Varying different levels of physical and cognitive ability of ICH patients

Some were unable to read, sometimes there is a mixture of varying languages within a group which may result in a barrier for some participants. We resolved this by providing a facilitator to bridge the gaps

Lessons learnt

The Power of Peer Support in Gameplay

During the sessions, participants actively supported one another, whether by assisting with reading difficulties or reminding others of their turn. This demonstrated the significant role of peer support fostering engagement and a sense of community.

Enhanced Social Interaction & Well-being in Hospital Settings

'The Karung Guni Boss' provided participants with a rare opportunity to interact with one another during their hospital stay, reducing feelings of boredom and isolation. Many expressed increased positivity, laughter, and a sense of connection, illustrating the therapeutic value of social participation in healthcare environments.

Conclusion / Plans Ahead

Conclusion

The results obtained from the participant survey forms after the group sessions conducted at TTSH-ICH from August – September 2024 have shown us that the use of gameplay through our 'Karung Guni' board game led to an improvement in mood. The results also showed that the ease of understanding the game rules and the keenness to replay the game by the participants were fairly high.

The project 'Karung Guni Boss' board game was also revised and refined after taking into consideration of the feedbacks gathered through the participant survey forms and facilitator's observations during the group sessions conducted at TTSH-ICH from August – September 2024.

There are discussion plans to commercialise the 'Karung Guni Boss' board game, hence an IP disclosure form have been initiated and we are currently in works with NHG HQ for the IP disclosure form. The form has been endorsed by our HOD and pending DOR endorsement. NHG HQ is also assisting with sourcing for vendors to assist with the printing and licensing of 'The Karung Guni Boss'.

Plans Ahead

We are also considering platforms and avenues to promote visibility for 'The Karung Guni Boss' board game, such as 'TTSH/NHG Corp Comm' and the 'Singapore Association of Occupational Therapists'.

There are also initial discussion plans to incorporate 'The Karung Guni Boss' board game as part of a project to develop a cognitive programme for 'Active Ageing Centres'. This cognitive programme is a joint initiative by the OT departments across the NHG institutions, with plans to apply for funding under the 'Lien Foundation'. The cognitive programme is likely to be a paid service rendered to the centres.

Healthcare Family Group(s) [optional]

Allied Health

Specialty or Discipline(s) [optional]

Occupational Therapy

Funding Source [if any]

Ng Teng Fong Healthcare Innovation Project (NTF HIP)
Strategic Innovation Project (SIP)
Every Moment a Rehabilitation Moment (EMRM)