



DISCOVERING ELDERCARE AND MENTAL HEALTH NEEDS

Insights brief for emerging social needs in Singapore

An initiative by

Introduction

If you have been wanting to make a difference or are thinking of advancing your journey in doing so, we are glad that you are part of this journey with us. LeapForGood was specially developed to involve YOU in addressing emerging social needs in Singapore, through innovation and social entrepreneurship.

We hope that by putting who matters most and what matters most to them at the heart of the journey, we can inspire solutions that are more tailored to their needs, and business models that support them. Driven by this purpose, LeapForGood takes a human-centred design approach in providing end-to-end support through the programme. The programme journey covers four phases: 1. social needs discovery, 2. ideation, 3. prototyping and, 4. piloting solutions.

The focal social needs themes this year are eldercare and mental health. This “Insights Brief” aims to raise awareness of the needs in these communities and provide useful thought starters for participants to identify potential opportunities for social entrepreneurship. It is designed to facilitate the social needs discovery process by presenting emerging trends in the macro-environment and user personas inspired by individuals from the communities. The personas are composites from interviews and observations of these individuals and those who interact with them on a daily basis. It is meant to provide a glimpse into lived experiences, including daily barriers and life aspirations, from which design challenges are drawn to evoke possible solutions. We hope that these, along with your own experiences and observations, will be considered in designing your solutions.

It is our dream that the programme will encourage you to take the leap in transforming innovative ideas into real solutions and sustainable social enterprise ventures, spurred on by the spirit of human-centred design and open collaboration.

We are excited to work with you in this journey towards an inclusive and caring society through social entrepreneurship!

Seow Hui Hong
Head, Programmes and Partnership, raiSE
On behalf of the LeapForGood Team

About the Organiser



Centre for Social Enterprise

The Singapore Centre for Social Enterprise (raiSE) was set up to raise awareness on social entrepreneurship and raise support for social enterprises in Singapore. raiSE hopes to strengthen the social enterprise sector in Singapore and encourage the growth of social enterprises as a sustainable way to address social needs.

raiSE provides a range of support to help social enterprises from start to mature stages, such as funding, advisory services, training, relevant resources and networks. raiSE also looks to encourage collaboration and sharing of information between social enterprises and voluntary welfare organisations. raiSE welcomes the support of corporations and individuals who would like to contribute or play a role in the social enterprise sector.

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LeapForGood Programme Design

Our design challenges are derived using a human-centred design approach that allows practitioners to gain empathy and insights into the latent needs and motivations of users. The programme's multi-phase process encourages collaborations among different stakeholders (users, service providers, designers, business owners) to create concepts and test prototypes rapidly. Instead of having users change and accommodate their behaviours, products and services can be tailored to solve actual needs.

The four pillars on the right outline the programme which brings participants through the discovery of user insights, ideation of innovative solutions, testing and validation of ideas through prototyping and piloting of their social enterprise ventures.

DISCOVERY

Gain insights on emerging social needs

Through the sharing of thoughtful ethnographic research and engagements with industry experts, you are encouraged to set aside preconceptions and step into the shoes of those in need. By sharing knowledge and human-centred insights on emerging social needs in Singapore, we help you appreciate existing challenges and uncover opportunities for a better tomorrow.



IDEATE

Convert innovative concepts into sustainable business models

Drawing on human-centred insights and macro-environment trends, you will find inspiration to develop innovative concepts and plant the seeds for solutions that last through sustainable business models. By the end of this stage, individual participants and organisations may put forth applications detailing the concept of their proposed social enterprises to be in the running to receive support and funds to make them a reality.



PROTOTYPE

Take your ideas beyond the blueprint, test and validate your concepts

Shortlisted applicants will enter the Prototyping phase with an "Idea Fund" of \$1,000 each. You may choose to recruit team members or work with your pre-existing teams to prototype solutions and test and validate your concept. You will receive support to equip you with tools to further develop your solutions and business models. There will also be facilitated learning or consultation with relevant technical experts, potential partners and key stakeholders. These will culminate in a Demo Day, where you will make your pitch to secure funding for your social enterprise.



PILOT

Develop and implement your social enterprise

Selected social enterprises that emerge from the process will each receive a LeapForGood grant of up to \$100,000 and incubation support from raiSE over the following six months to catalyse the implementation of their solutions and social enterprise ventures. These will give you a solid foundation for piloting your prototyped ideas and sustaining social impact.



Methodology

Desk Research

Secondary research and literature reviews were conducted to understand the context, latest trends and best practices. The research enabled us to evaluate the societal impact of the various issues and point us towards the areas of most potential.

Field Research

Observation

To form a deeper understanding of elderly persons and persons with mental health issues, 42 research participants (Including 22 research participants from the project "Empathetic Technology for Ageing" commissioned by DesignSingapore Council) were shadowed for at least four hours over the course of a day to observe their daily routines, lifestyles and behaviours in places including their homes, workplaces, treatment and activity centres. The observations also included documentation of interactions between the participants and their family, peers and the community as they are important influencers in their daily lives.

In-depth interview with users

In-depth interviews were conducted to probe deeper into the research participants' attitudes and motivations. Questions on topics such as lifestyles, health, treatment processes and aspirations were asked so that their perspectives, decision pathways and concerns could be understood.

Expert interviews

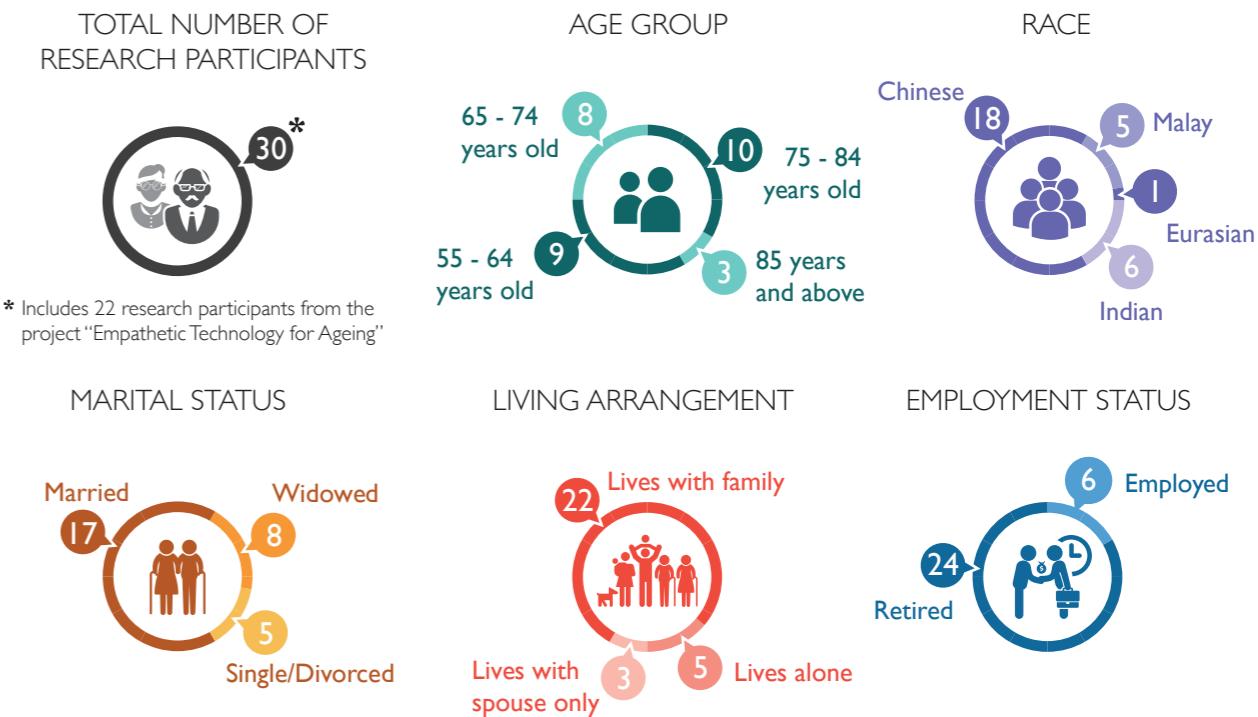
Experts and professionals in the eldercare and mental health care sectors were consulted and interviewed to understand the key challenges and opportunities.

Synthesis and Insights

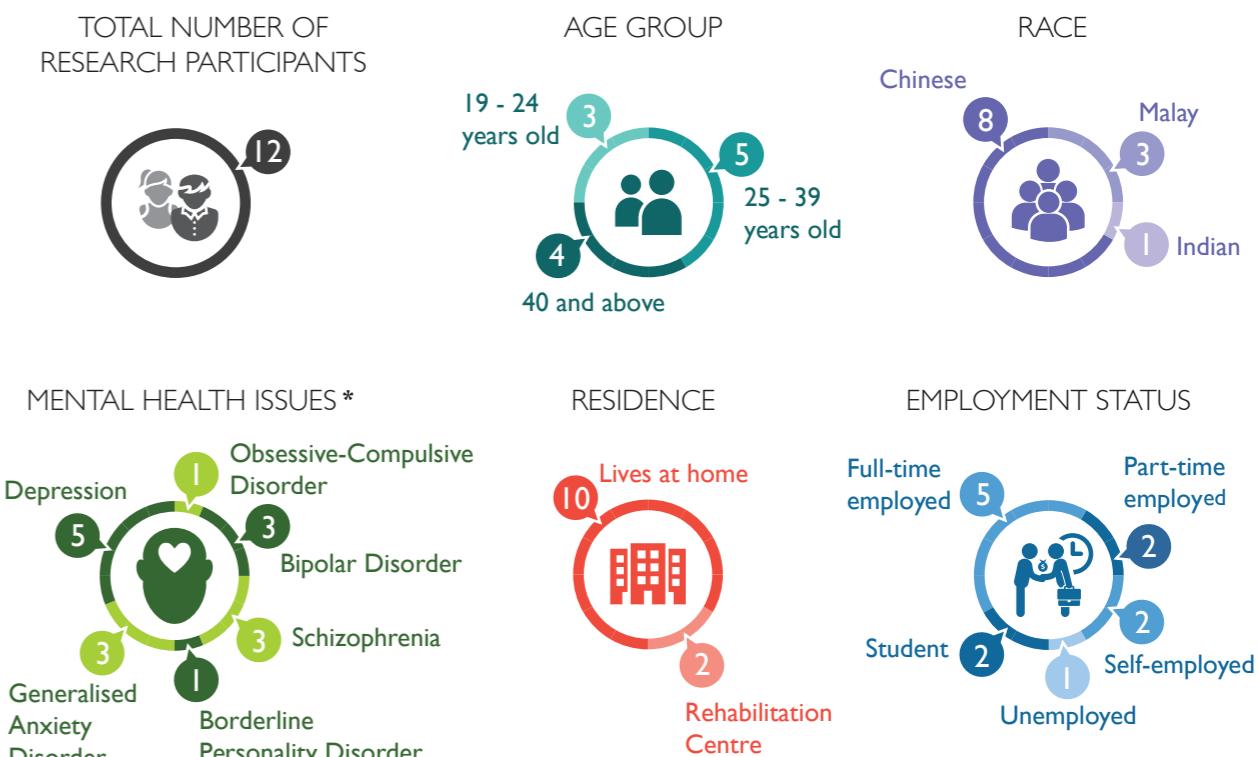
The findings from the ethnographic research were carefully analysed to identify key areas of needs and challenges. The insights were crafted into eight design challenges outlining the areas of greatest potential.

Demographics of Research Participants

Research Participants for Eldercare



Research Participants for Mental Health Care



* Some research participants have more than one mental health issue

Theme I
Eldercare

Elderly persons living alone or with family may require support in their psychological, social and emotional needs. In Eldercare, we rethink what it means to age well and empower elderly persons to live a fulfilling life in the community.

In Theme I, we are interested to explore solutions that benefit elderly persons aged 65 and above.

A close-up photograph of an elderly man with dark hair and a receding hairline. He is wearing a light-colored, long-sleeved shirt with a fine plaid pattern. He is looking down and to his right, intently focused on a white document with red and black text that is partially visible. The background is slightly blurred, showing an indoor setting with a window and some furniture.

“If I retire I sit down here and watch TV, I’ll go crazy, won’t I? There’s nothing to do, nothing to look forward to. When you go out and you work, you meet friends you know?”

- Research participant and active community volunteer, 73 years old, talking about retirement

Landscape of Eldercare

Singapore's population is ageing rapidly. The issue is hitting Singapore on multiple fronts, including economic, social and personal. This page outlines the landscape of Eldercare in Singapore, while the following three pages provide detailed data and trends in three areas of greater needs.



Annual admissions and outpatient attendance rate of elderly persons in public sector hospitals is the highest at **307 per 1000**, about 5 times of those aged younger.²



9 in 10 Singaporeans aged 55 and above have at least one chronic health condition.³



I in 10 Singaporeans aged 60 years and above has dementia. The likelihood of dementia increases with age.⁴



About **I in 3** elderly persons are at risk of being malnourished.⁶



77% of potential jobseekers aged 60 years old and above prefer part-time employment.⁷



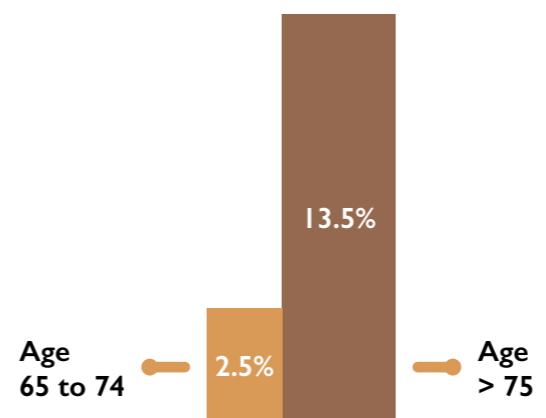
Elderly persons who were living alone increased from 9% in 1990 to **17%** in 2010.⁸ They have the **highest propensity for depression** compared to elderly persons with other household living arrangements.⁹

Emerging Care Needs

Elderly persons may require more support in their activities of daily living. It is important to provide support when required to empower the elderly persons' autonomy as far as possible, for independent living.



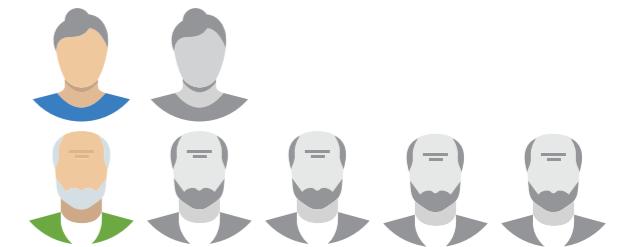
By 2030, the old-age support ratio is expected to be **2.1**, down from 5.7 in 2015.¹⁰



2.5% of elderly persons aged 65 to 74 years old have mobility limitations requiring physical assistance and this increases five-fold to **13.5%** for elderly persons aged 75 years and above.¹²



Although an elderly person at 65 years old is expected to live for another 20 years, **one third** of their elderly life is not in good health.¹⁴



I in 2 older women and **I in 5** older men have **at least one limitation** in carrying out their activities of daily living.¹¹

"Elderly who live alone have **no motivation to cook for themselves**. Most of the time, they will just eat biscuits or plain bread for their main meals, which is **poor nutrition**."¹³

-Teo Soo Lay, Dietitian, Singapore General Hospital



Malnourished elderly persons are **5 times** more likely to be in the risk of death after one year.¹⁵

Searching for Identity and Purpose

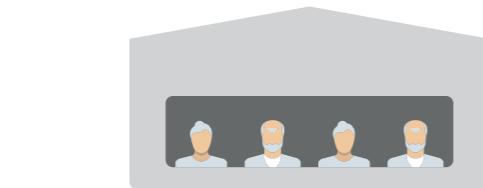
Beyond autonomy over their daily lives, elderly persons are looking for a sense of identity and purpose. Be it wishing to continue living in their homes where they feel a sense of belonging, or trying to contribute to their family and the community, these motivations influence the elderly persons' lifestyles.



Employment growth for the elderly persons between 2012 to 2015 was **slower at 3.6%** as compared to 8.7% between 2009 to 2012.¹⁶



I in 2 elderly persons relied on allowance given by children as their main source of financial support.¹⁸



80% of elderly residents in public housing would like to age in place in their existing homes.

11% of elderly persons have never thought about retirement living options.

9% of elderly persons are open to any living options except for elderly home and retirement village.¹⁷



2 in 5 elderly persons intend to be engaged in volunteer work.¹⁹

For older persons aged 50 to 74 years old living in 3 room flats and above:²⁰



I in 3 surveyed older persons intend to learn new things through an online course.



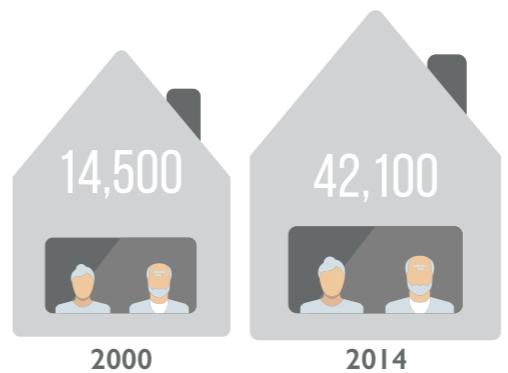
2 in 5 surveyed older persons intend to learn a new skill.

"For the Pioneer Generation, working beyond the retirement age is not an issue. Some are still working at 70 years old. Besides the income it provides, being **able to work and connect with the society at large is also important to them."**²¹

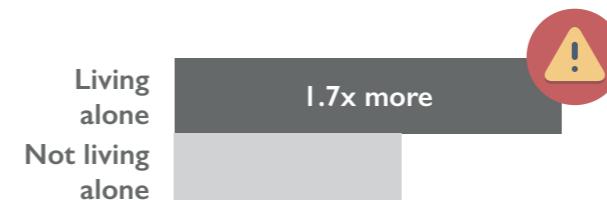
- Choo Jin Kiat, Executive Director, O'Joy Care Services

Longing for Social Connectedness

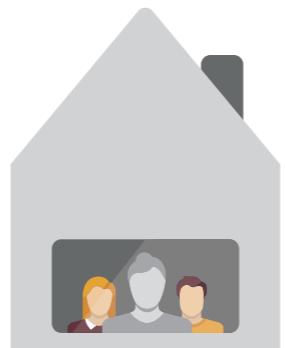
As Singapore's population continues to age, there are more elderly persons living in isolation. Our research has revealed that elderly persons living alone face a higher mortality rate. In addition, we found that those living with family may also face social isolation. Improving familial ties with elderly persons and helping them to be socially connected becomes increasingly important.



The number of elderly persons living alone almost **tripled** from 2000 to 2014.²²



Elderly persons living alone are **1.7 times** more likely to face mortality risk, compared to those who do not.²⁴



9 in 10 elderly persons aged 75 and above who indicated that they were sad, lonely or in low spirits, did not live alone.²⁶



I in 10 older residents received visits from their married children less than once a month.²⁵

"Outside the home, there are community events and government initiatives to engage the elderly. However, for **elderly confined to their homes, is there anything we can do to help keep them engaged?** Having volunteers to **provide the human touch would be best**, but these **volunteers can't be there for them 24/7.**"²³

- Dr Foo Fung Fong, Executive Director, Filos Community Service

DESIGN CHALLENGE

I

Ageing Goes Beyond Prevention

Rethinking ageing well

Auntie Yasmin



“I have savings, I have my hobbies. I think I can manage ageing on my own. I don’t want to depend on other people, they wouldn’t like it too.”

Age	68	Living Arrangement	Living alone
Health	In relatively good health, goes for yearly check-ups. Indicates general fatigue that the doctors are not able to attribute to any reasons	Financial Status	Financially stable with savings
Education	Degree holder	Family Support	Infrequent visits from relatives

Story

Auntie Yasmin had a long and busy career prior to her retirement. As a result, she is financially self-reliant. Throughout her career, she was single-mindedly focused on her work. Her social interactions mostly comprised of exchanges with her colleagues.

Presently, she no longer meets and converses with other people. To pass her time, she picked up dressmaking and spends her days mastering the craft. She has been making and stocking up an assortment of dresses, hoping that one day she will be able to sell them off.

In trying to achieve her goal, Auntie Yasmin has minimal contact with her friends and family. “I am so busy every day, so many dresses to make, where got time to socialise?” she says.

Auntie Yasmin is fearful of ageing alone. She desires companionship but lacks the motivation and means to foster meaningful relationships.

Traditionally, retirement planning focuses on preventive measures. We save up to ensure that we have the financial resources to survive. We measure our vital signs and do regular check-ups to ensure we do not fall ill. Often times, however, elderly persons may not have considered other aspects of their lives, including their safety, diet and nutrition or even their social involvements.

How might we help elderly persons consider a more holistic approach to ageing?



She lives alone and hardly contacts her family as she feels she should be independent and not interrupt their busy lives.



Although she wishes she had meaningful relationships with those around her, most of her interactions are with stall owners and shopkeepers with whom she only has brief conversations.



She also spends hours browsing and reading articles about fashion. However, she has not explored avenues of sharing her interest with others.



Her doctors are not able to explain her increase in general fatigue. She accepts it to be part of ageing and takes no further action.



She recently fell at home doing household chores but managed to seek help as she was conscious. She is fearful of being unconscious should she fall again with no one around to help.



While she initially felt she had sufficient savings, she now worries about a sustainable retirement. Reluctantly, she considers selling her apartment to move into a smaller place.

Opportunities

- 1** How might we help elderly persons to transit from passively coping with illnesses to actively planning and managing their health and wellness?
- 2** How might we create opportunities for elderly persons to find their purpose and to pursue their aspirations through employment, volunteering and other engagements?
- 3** How might we enable more elderly persons to build their social circles and/or stay socially engaged on their own terms?

DESIGN CHALLENGE

2

From Helping to Enabling Care

Rethinking assistance for greater independence



"My health is so bad. What can I do? The subsidies help, but it is not enough. There are so many things I need to buy."

Age	Jayesh is 65, Priya is 63	Living Arrangement	Living by themselves
Health	Jayesh is a wheelchair user with one amputated leg. Priya has been managing her chronic illness	Financial Status	Reliant on subsidies
Education	GCE O' Levels	Family Support	Two children are away and do not provide support

Story

Uncle Jayesh used to work as a cleaner. He largely neglected his health throughout his working years, drinking and eating unhealthily. Eventually, he developed diabetes, leading to the amputation of his right leg.

Due to his limited mobility, he is unable to return to work as a cleaner. His wife, Auntie Priya, who has always been a housewife, helps him with his daily tasks and getting to doctor's appointments. After his amputation, they received various subsidies to help them get through difficult times.

However, they have grown reliant on the monetary assistance for their monthly expenses and have no savings.

Focusing mainly on meeting their immediate daily needs, they wish that they could find more subsidies to help them live better. "We are so poor, my husband has no leg, what to do?" Auntie Priya complained.

Even with savings and planning for ageing, sudden illness and other unexpected incidents may cause the elderly persons to fall into difficult times. While subsidies and financial aid help elderly persons when they are in need, it is important to ensure they can be motivated to have ownership over their life choices. As the population of Singapore ages, we believe the provision of help needs to become more sustainable.

How might we enable elderly persons to access help and support to transit from receiving help to progressing with help?



Disheartened that he is unable to return to his job as a cleaner, Uncle Jayesh laments his loss of income. He has not been actively searching for an alternative, mainly because he feels he lacks the skills and experience.



Various walkers and wheelchairs were donated to Uncle Jayesh. In spite of all these mobility aids, Uncle Jayesh still feels physically confined to his home and has no motivation to independently carry out activities of daily living.



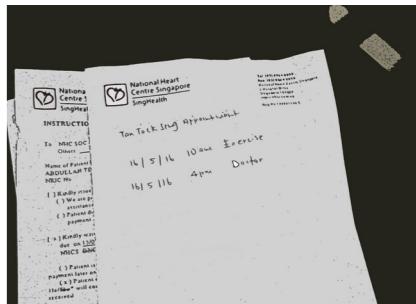
Although solely reliant on financial aid, the couple do not exercise any financial planning and they have no savings.



Uncle Jayesh relies on Auntie Priya's support to get in and out of his wheelchair. Without her around, daily tasks would be difficult. Auntie Priya finds it hard to leave home because Uncle Jayesh expects her to be around throughout the day.



The couple feels they are unfit for employment and therefore have continually been searching for new subsidies to supplement the financial aid they are currently receiving.



Due to multiple health conditions, he is required to visit three hospitals at different locations. However, he dreads these appointments as he finds it difficult to comply with multiple doctors' recommendations.

Opportunities

- 1 How might we facilitate early detection of health issues and timely intervention before situations become dire?
- 2 How might we enable elderly persons to better manage their needs (including health and medical care, transport mobility and financial stability) and achieve greater independence?
- 3 How might we enable better distribution and delivery of resources so that more elderly persons can receive timely and relevant assistance?

DESIGN CHALLENGE

3

Redefining Roles and Responsibility

Rethinking sustainable caregiving arrangements

Grandpa Tan



“If I can, I want to go back to the days when I was healthy and my family was happy. My only wish now is for my condition to be stable, and not adding more burdens.”

Age	75	Living Arrangement	Living with wife, son and daughter-in-law
Health	Stroke patient with mobility issues and cognitive deficits	Financial Status	Living off savings
Education	GCE O' Levels	Family Support	Family has strong sense of duty and tries to do their best

Story

Since retirement, Grandpa Tan has been living with his wife, son and daughter-in-law. Grandpa Tan had a stroke four years ago, making him less mobile with cognitive deficits. His family had to adapt quickly to his condition. He found himself feeling helpless for suddenly imposing his reliance upon them.

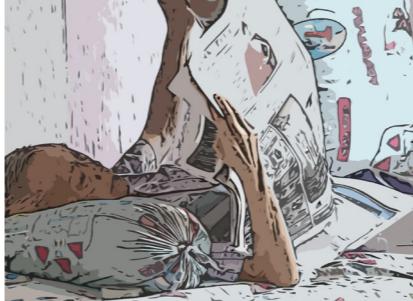
Despite the financial burden on the family, Grandpa Tan's daughter-in-law had to quit her full-time job to take care of him at home. She rarely has time for herself and people outside the family. His son takes on

two jobs to provide for the family. Grandpa Tan's wife also takes it upon herself to be responsible for his well-being, but struggles to meet his needs.

Despite the challenges, Grandpa Tan's family do not believe that care service providers will be able to take care of him. As a result of the many sacrifices his family makes, Grandpa Tan feels a sense of guilt. His biggest wish is to relieve his family from the burden of taking care of him.

Filial piety is an important value in Asian culture. There is a strong sense of duty and responsibility for family members to take care of their elderly relatives as much as they can. Such a mindset propels family members to make great personal sacrifice at work and their social lives to care for elderly persons. For the elderly persons, there is a strong sense of guilt and fear of adding further burden to the family. The joy and happiness that bond the family slowly gets replaced by task-lists of caring duties.

How might we support more sustainable caregiving relationships?



After the onset of his stroke, he tried to help with household chores but got injured several times. Now due to his family members' concerns for his safety, he spends most of his time doing sedentary activities such as reading the papers.



Grandpa Tan's son is now the sole breadwinner, but has trouble providing financially for the household. He works long hours and is usually drained by the time he gets home.

Grandpa Tan rarely requests his family to assist him in anything unless absolutely necessary. He feels guilty for the emotional and financial toll his condition has taken on the family. He keeps his needs and concerns mostly to himself.

Opportunities

- 1 How might we enable caregivers to maintain sustainable caregiving arrangements?
- 2 How might we develop solutions that can activate the community or latent resources to provide for caregiving needs?
- 3 How might we create opportunities and avenues for elderly persons and their caregivers to enjoy time with each other and build healthier relationships?



Beyond Ageing in Place

Rethinking ageing friendly environments

John and Grace

“I want to stay at home. All my memories are here. If I can’t even stay at my own place, what else do I have left?”

Age	John is 76, Grace is 70	Living Arrangement	Living with son who is working full-time and seldom at home
Health	John is frail and barely able to take care of himself. His wife is in an early stage of dementia	Financial Status	Support from son's income for daily expenses
Education	PSLE Certificate	Family Support	Their other children contribute whenever they can, but they are not able to provide much day to day support

Story

John and Grace are an elderly couple living with their son. When Grace started to display signs of dementia five years ago, the family decided against moving Grace to a dementia day care centre, wanting to take care of her from home instead.

Deeply affected by his wife's condition, John willingly assumes most of the daily caregiving responsibilities while his son continues to work full-time as a dispatcher to support the family. However, as age begins to catch up with John, his ability to provide for his wife's needs is

diminishing. His son calls home regularly in the daytime to check on John and Grace but feels torn between the demands of his workplace and the helplessness of not being home to take care of his elderly parents.

As the elderly couple's daily activities become increasingly challenging for them, the risk of leaving them both at home unattended grows. At the same time, the closely knit family wants nothing more than to continue living together under one roof.

For many elderly persons, ageing in place is the best way to age. They can remain in their lifelong homes and be with their loved ones. While ageing in place is desirable, it is important to ensure the environment is conducive for ageing that the elderly persons is safe at home, enjoy a good quality of life and do not cause undue stress and burden for their loved ones.

How might we create environments that encourage elderly persons with support needs to age well?



Sometimes their son returns home to find Grace injured due to her dementia-induced scratching of herself. He wishes he could be around to prevent it, but given his work commitments, he is unable to.

Even though John and Grace live with their son, they spend most of their time alone at home. John often feels lonely and depressed. However, he has no friends to talk to and neither is he interested to participate in activities at the senior activity centres.



John and Grace usually eat biscuits for lunch due to the hassle of cooking proper meals. They believe biscuits are a good enough substitute.

Their son calls home regularly in the day to check up on John and Grace. However, he is never fully certain if John and Grace are safe or eating properly.

The son wants to send John and Grace to the care centre located near their flat, but the elderly couple refuse as they feel like they are being abandoned.

Opportunities

- 1** How might we enhance their environment so that it encourages a healthy diet and safe living?
- 2** How might we provide a diversity of desirable living options for elderly persons so that they feel empowered to plan and shape their lifestyles?
- 3** How might we maintain connections and provide peace of mind for the family members while elderly persons are away from them?

Theme 2

Mental Health Care

Mental health is a fundamental and indispensable component of one's health and wellness. It is more than the absence of mental illness. The World Health Organisation (WHO) defines mental health as "a state of well-being in which the individual realises his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community".¹

In Theme 2, we are interested to explore solutions for the persons who are either diagnosed with mental health issues or are at risk as determined by community care professionals.

(Refer to Appendix 1 for examples of mental health issues.)

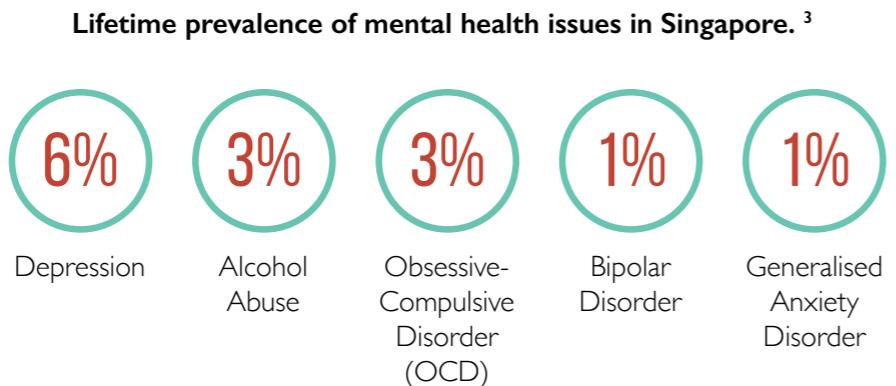


"It will be a lifelong challenge to manage my mental health condition. The things I am struggling with will always be invisible and known to myself only. The challenge is to help people see the invisible. It is an uphill task, but nevertheless, it is necessary."

- Research participant, 33 years old, talking about managing his Bipolar Disorder

Landscape of Mental Health Care

1 in 8 Singaporeans will suffer from at least one mental health issue in their lifetime. However, partly due to social stigma and lack of awareness, the issue often goes unnoticed and under-served. This page outlines the landscape of mental health care in Singapore, while the following three pages provide detailed data and trends in three areas of greater needs.



The global cost of mental health care is projected to surge to **US\$6 trillion** by 2030 from US\$2.5 trillion in 2010.⁴



Globally, mental health conditions account for **37%** of healthy life years lost from Non-Communicable Diseases.⁵



Singaporean adult women are almost **twice as likely** to be affected by Major Depressive Disorder.⁶



Only **1 in 4** with mental health issues seek professional help.⁷



51% of those with a mental health issue have a chronic medical condition.⁸



Youths face the highest risk for depression. **8% of youths** aged between 18 to 34 years suffered from Major Depressive Disorder (MDD).⁹



Majority of mental health issues occur by the age of **29 years**.¹⁰



The rate of unemployment is **twice as high** for those with mental health issues as compared to those without mental health issues.¹¹

Persistent gap in help-seeking and getting treatment

When symptoms of mental health issues first surface, many do not seek help or get treatment due to the lack of awareness and knowledge. This results in an extended period of time when the issues goes undiagnosed. As diagnosis and treatment are delayed, mental health conditions can deteriorate over time.

A persistent gap remains in help-seeking and treatment for mental health care.¹²



Years taken
to seek help



86.5% of those in the workforce do not seek help for problems relating to mental health.¹⁴



50% of respondents would not want anyone to know if they are suffering from a mental illness.¹⁵

Mental & physical health issues often co-exist, adding complexity in providing treatment.

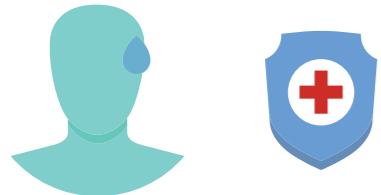
31% of local diabetes sufferers in a specialist outpatient clinic also had depression.¹⁷

"There is a misconception that seeing a counsellor or seeking treatment means that there is something wrong with the person and that it is something shameful. This stops people from coming forward to seek help."¹⁶

- Claudia Ma, Counsellor, Silver Ribbon Singapore.

Living with mental health issues

After seeking professional help, a journey of diagnosis, treatment and rehabilitation is required. People with mental health issues have to constantly manage their triggers and unforeseen relapses in their recovery journey.



40% of hospitalised schizophrenic patients experience a relapse within a year of being hospitalised.¹⁸

50% of people with depression experience relapse after full remission.¹⁹

Challenges hindering successful rehabilitation include:



Financial Issues



Defaulting psychotherapy & medication without consultation



Psychotherapy assignments not completed between sessions



Difficulty in gauging the right dose of medication

Triggers of relapse include:



"When patients have a goal or reason to get well and a health worker who works alongside them to help them meet their life goals, we find it easier for them to follow through with treatment as there is something they want to aspire to."²⁰

- Dr Wei Ker-Chiah, Consultant and Chief of Department of Community Psychiatry, Institute of Mental Health

Lingering social stigma

With proper treatment and support, people with mental health conditions can manage their conditions, have an active social life and contribute meaningfully to society. However, misconceptions about the people with mental health issues can prevent them from successful re-integration.

Only **1 in 10** Singaporeans recognise schizophrenia as a mental disorder.²¹



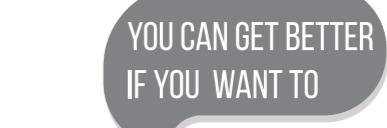
Public awareness for other mental health issues is slightly higher:



Lingering social stigma.



In a public survey, stigma for mental health issues were still prevalent with people with Major Depressive Disorders being more likely to be perceived as "weak not sick".²²



9 out of 10 people believe that those with a mental health issue "could get better if they wanted to".²³

"We hire them (persons with mental health issues) because they are able to fulfil the job demands, able to carry out the job responsibilities and able to perform well at the workplace. If we are able to be objective and give the chance and opportunity, we will realize that it is not so much different from any job interview and job intake."²⁴

- Vincent Budihardjo, Head of Social Enterprises, Singapore Anglican Community Services.

DESIGN CHALLENGE

I

From Awareness to Help-Seeking

Rethinking mental wellness and intervention



"I don't have any control over my life anymore. I feel like I'm on a rollercoaster, being brought along for the ride. Will this really pass with time?"

Age	19	Living Arrangement	Lives with parents and siblings
Health	Has Bipolar Disorder	Financial Status	Family is financially healthy
Education	Diploma student	Family Support	Parents are annoyed with his behaviour but are unaware of his mental health issues

Story

Outgoing and cheerful, Jasper does well in his studies and excels in numerous school activities. While he is proud of his achievements, he sometimes wonders how he finds the energy to engage in so many activities.

Yet on other days, he feels like a different person. Extremely depressed and exhausted, he finds that he lacks the motivation to get anything done. Feeling helpless and vulnerable to the whims of his emotions, he coops himself in his room and avoids all activities.

Frustrated by his extreme emotional states, he seeks help from his family, friends and the school counsellor. However, they give him different explanations for his behaviours, confusing him about who he truly is.

He yearns for stability, and tries to believe that his emotional turbulence will pass with time. However, without diagnosis and treatment, his mental health continues to deteriorate.

Many of us are unable to detect the early symptoms of mental health issues. When persons with mental health issues reach out for help, we often brush them aside, attributing their behaviour as transient mood swings, character flaws or asking them to simply "stop thinking about it and it will go away." This results in a gap between the onset of mental health issues and professional help-seeking, leading to unnecessary emotional turmoil and serious consequences to their conditions.

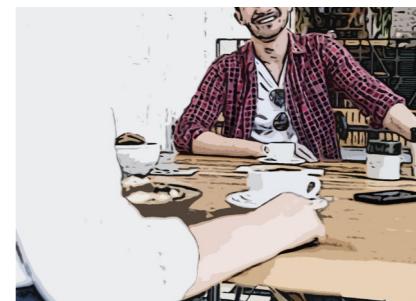
How might we increase awareness, encourage and facilitate earlier detection of mental health issues?



Some of his classmates like him for his zealous enthusiasm, but others avoid him believing that he is inconsistent and burns out easily.

Despite doing well in school, he feels depressed and exhausted frequently. Reluctantly, he skips classes on those days. But his parents believe that he is trying to play truant and scold him, adding on to his stress.

With no avenue to de-stress, he turns to gaming to distract himself. Even though it does little to help him feel better, he continues as he does not know any better options.



Due to his regular absence in school, he was assigned to see a school counsellor. However, as he was doing well in his studies, the counsellor believes that his inconsistency in school attendance is due to his gaming habits.

He confides his issues to his friends and tries to accept their consolation that his emotional struggle is "just part and parcel of growing up."

Over time, his condition deteriorates to the extent that he even locks himself in his room for up to a week, barely eating and cleaning himself. Realising that something is amiss, his parents forcefully bring him to the hospital.

Opportunities

- 1 How might we reduce stigma for mental health so that it will be part of healthy living?
- 2 How might we empower communities to detect early signs of mental health issues?
- 3 How might we encourage persons with mental health issues and their loved ones to seek professional help early?

DESIGN CHALLENGE

2

Embarking on Recovery

Rethinking the treatment journey

Zach

“Why do I have to go through all these treatments? I just want to resume life as per normal.”

Age	25	Living Arrangement	Lives with parents
Health	Has Obsessive-Compulsive Disorder	Financial Status	Struggles to manage cost of treatment with unstable employment
Education	Diploma holder	Family Support	Does not want to share with his family about his condition due to fear of burden and stigmatisation
Job	Looking for stable employment (falls in and out of jobs)		

Story

Upon graduating from a diploma course two years ago, Zach has been falling in and out of jobs. To those around him, it is a combination of not trying hard enough and bad luck.

Little did they know, Zach has been struggling with his mental health treatment for the past two years. Coming to terms with his diagnosis of Obsessive-Compulsive Disorder is difficult. “Why me? I am perfectly normal, not crazy” Zach pondered.

He avoids going for his medical appointments unless he can no longer tolerate the physical and emotional pain. After a bad relapse episode, he finally convinces himself to start taking the medication. However, the side effects make him dread the medication and he skips it regularly, causing his condition to deteriorate further. He is uncertain if he will ever recover, as he does not see immediate improvements to his condition. Till now, he is still not sure why he is suffering. All Zach wishes for is to get better and resume life as per normal.

Reaching out for professional help marks the start of a long recovery journey for people with mental health issues. Many struggle through diagnosis, acceptance and treatment before being able to manage their condition confidently. As the cause and manifestation of mental health conditions are different for each individual, it can take a long time to find the right diagnosis and tailored treatment for recovery.

How might we enable persons with mental health issues to have a smoother recovery journey?



He keeps the medication in his drawer, believing that he does not need it. He only takes the medication reluctantly on occasions when he feels terrible.



The side effects from his medication causes nausea, making it difficult for him to carry out his daily activities.



Feeling anxious due to consistent noise from his new neighbours, he struggles to cope alone, while waiting for his monthly appointment with his psychiatrist.



During his various appointments, he is eager to share. However, he has to repeatedly describe his symptoms to multiple mental health professionals, causing him emotional stress.



With little understanding of his condition, he does not know how to keep track and manage his triggers.



Disrupted by his frequent relapse episodes, he relies on ad hoc job positions, each lasting a few days. However it is insufficient to cover the cost of his treatments. As such, he chooses to skip some appointments.

Opportunities

- 1 How might we enable a more comprehensive understanding of their situations and challenges so that they can receive appropriate support?
- 2 How might we enable persons with mental health issues to stay motivated and cope with the ups and downs of their recovery journey?
- 3 How might we provide continuous care and support across different transition points in their stages of recovery?

Developing Empathetic Social Support

Rethinking supportive social engagements for recovery



“My parents keep telling me not to think about it, but it does not help at all. Nobody understands me, I just try to cope by myself.”

Age	33	Living Arrangement	Lives with parents and siblings
Health	Has Schizophrenia	Financial Status	Getting by with no savings
Education	Degree holder	Family Support	Family members accept her condition and try to support, although ineffectively
Job	Managed to get a full-time administrative position after much effort		

Story

Having been through the diagnosis and treatment process with her, Sarah's family has come to accept her mental health condition. She is thankful for their willingness to support her. However, deep within, she feels lonely and wonders if they can truly understand how she feels.

Once a sociable person, Sarah barely keeps in touch with her old friends now. She thinks that not all of them can accept and understand her mental health issue.

Her biggest source of comfort comes from her peers in recovery. They make her feel like she is not alone in her recovery journey. She feels especially empowered when she can also help them by sharing her own experiences.

She finds the treatment process tiring, and hopes that her family and friends can support her in the way that she really needs.

For persons with mental health issues, the recovery journey can be a lonely one. It is difficult for people around them to fully understand their condition. Without the awareness and knowledge, those around do not know how and when to provide support, even though they are willing to do so.

How might we enable empathetic social support to enhance their psychological well-being during the recovery process?



She chats about her issues with her family members who are among the few aware of her condition. But she feels that she does not get much support when they just tell her not to think about her issues because they do not know how to help.



She lacks the motivation to attend her counselling sessions because she feels that her counsellor does not fully understand what she is going through.



On rare occasions when she meets up with her relatives, she struggles to look fine even if she feels unwell. She worries that they might judge her.



When she is feeling unwell, she sometimes texts her peers in recovery for support. However, as they are busy and usually do not reply immediately, she struggles to cope alone.



Sometimes, she stays in her room hoping to get some rest after a long day. But worried that she might have a relapse again, her parents knock on her door constantly to check on her. This creates more anxiety within her.



She pulls herself through the week, knowing that she can look forward to the weekend when she catches up with her peers in recovery. They enjoy activities such as painting together to reflect about the positive things in their lives.

Opportunities

- 1 How might we help persons with mental health issues communicate with their family members and friends about their needs more effectively?
- 2 How might we create connections for persons with mental health issues to share their experiences and receive timely support?
- 3 How might we facilitate the transition between social interaction and solitude, so that persons with mental health issues feel comfortable?



Sustaining and Thriving in Community

Rethinking societal integration and pursuit of aspirations



“I really love my job. That’s why I’m afraid to share my condition with my boss. What if I’m stigmatised?”

Age	42	Living Arrangement	Lives with wife and two children
Health	Managing General Anxiety Disorder	Financial Status	Financially stable
Education	Degree holder	Family Support	Family is supportive and knows how to avoid his triggers and manage his relapse episodes
Job	Senior Executive		

Story

As the senior executive in an advertising company, Steve is passionate about his work and strives to deliver good results. His condition has stabilised over the years, but the fear of relapse keeps him on his toes. Past episodes have disrupted his life greatly, resulting in him quitting his jobs and missing out on family occasions. Now, he follows a strict daily regime and is always vigilant in watching out for his triggers.

Even though he is capable of delivering excellent work, he avoids presentations and networking with

colleagues and clients. He tried multiple times to push himself through presentations and networking sessions but it often resulted in relapses. After a while, he just avoided them as much as he could. His colleagues are upset with him, thinking that he is trying to avoid work responsibilities. Steve struggles to manage his condition and their expectations.

Despite the challenges he faces at work, he aspires to bring his career to greater heights. All he wants is some guidance and support in his workplace.

Persons with mental health issues have aspirations and dreams, just like anyone else. Their careers and aspirations can be a great source of motivation in their lifelong management of their mental health issues. Helping them to discover and fulfil what they want to do is as important as building on what they can do. With the right support and opportunities, many can achieve their aspirations and contribute meaningfully to our society.

How might we enable persons with mental health issues to pursue their goals and contribute meaningfully to the society?



Afraid of forgetting his triggers, he writes down his past triggers to avoid such situations.

His family and him make an action plan to manage his relapses at home. This gives him a peace of mind, but he worries about having a relapse when he is outside of his home.

Even though his condition has stabilised, he carries his medication with him all the time, not knowing when he might need them again.



Overwhelmed with work, he shares his condition with some of his colleagues, hoping to get some understanding and support, but they do not know how to react and grow distant. He tries to manage by discreetly taking his medication, knowing that no one can help him should he have a relapse at work.

Despite his difficulties at work, he aspires to excel at his job and see progress in his career. However, he feels lost on how to achieve that.

Outside of his work, he minimises his social activities. He is unsure if he can take the pressure of being in a social environment and does not want to risk having a relapse. At times, he feels lonely and wishes to have someone to talk to.

Opportunities

- 1 How might we help to create a supportive workplace environment that is friendly to mental health needs?
- 2 How might we improve work readiness, enhance employment opportunities and facilitate progression for persons with mental health issues to achieve their aspirations?
- 3 How might we empower persons with mental health issues to make adjustments and cope with mental health needs so they can better integrate into society?

Design Principles

Design Principles were defined to stimulate ideation and guide the development of empathetic solutions for elderly persons and persons with mental health issues. From providing timely engagement to fulfilling aspirations, the principles cover different physical, psychological and financial needs. It is not necessary to take every design principle into consideration, but those which are most relevant to the target users.



Credits

Partners

Organising Partner



The DesignSingapore Council was established in 2003 to help develop the nation's design sector. This follows from the Economic Review Committee's report which identified the creative industry as one of the three new sectors (including education and healthcare) for economic growth. The DesignSingapore Council is part of the Ministry of Communications and Information.

Capacity and Capability Building Partner



Tote Board's vision is to uplift the community by Giving Hope to vulnerable groups and Improving Lives of all in Singapore. The Board works collaboratively with stakeholders and partners to identify gaps and curate impactful programmes to address social challenges. We strongly support the social enterprise sector, and are committed to build the capacity and capabilities of the sector, to deliver quality services to the community.

Community Partners



Bethesda CARE Centre:

An IPC-certified VVO that was established in 1996, providing community assistance to the poor and underprivileged living in the North East of Singapore. Bethesda Care enriches the lives of individuals through services and activities for children, seniors and families.

Interest areas for collaboration:

Collaborating with organizations to provide training and jobs for people with mental health problems. Looking for partners to provide advisory and opportunities in setting up a social enterprise.



Singapore Anglican Community Services:

A VVO that serves the community through the provision of psychiatric services, senior services and services for special groups. SACS is part of the community service arm of the Diocese of Singapore and is managed by a dedicated team of professional volunteers and staff.

Interest areas for collaboration:

Internship and employment opportunities for support groups and increasing visibility and support of Social Enterprise merchandise and e-commerce platform.



Silver Ribbon:

A VVO launched by Former President S R Nathan in 2006 to combat mental health stigma and encourage early treatment, Silver Ribbon (Singapore) works closely with patients, caregivers, policymakers, government agencies, grassroots organisations, VVOs and other stakeholders across various sectors in reaching out to all age groups through innovative means.

Interest areas for collaboration:

Educating the general public, enhancing mental health literacy, empowering people with mental health issues and engaging stakeholders in mental health promotion & advocacy.



WE CARE Community Services:

A VVO providing support and treatment programmes for all forms of addiction, including drugs, alcohol, gambling, sex, and various other compulsive behaviours. We Care is an addiction recovery centre funded by charity, with services open to all persons and family members who need help to cope with an addictive disorder.

Interest areas for collaboration:

Employment opportunities for ex-addicts.

Lions Befrienders:

A VVO with more than 20 years of history providing friendship and care for seniors to age in place with community participation, enabling them to enjoy meaningful and enriching lives. Currently serving about 5,000 vulnerable seniors through an island wide Befriending service, Senior Activity Centres, Cluster Support services and Senior Group Homes.

Interest areas for collaboration:

Providing comprehensive services to meet the evolving and growing needs of our seniors, so that no senior should ever be deprived of opportunities to have a better life.

O'Joy Care Services:

A VVO dedicated to promoting the psychosocial health of older persons, and empowering their families and caregivers to accomplish the same through a holistic perspective on wellness through our mental health, social and community care services.

Interest areas for collaboration:

Expanding the Health Oriented Ageing (HOA) programme, a community supporting active ageing through daily physical and arts-related activities.

Knowledge Partners



Incubation Partner



Network Partners



Outreach Partners



Implementation Partners



Researched by



Orcadesign Consultants is a forward-thinking innovation and strategy consultancy firm with over 20 years of experience in creating impactful solutions. We work closely with our clients including SMEs, start-ups and global brands to solve problems, uncover business opportunities, innovate and grow sustainably. We advocate and adopt a human-centred and dynamic approach towards innovation. We also identify consumer trends and understand underlying user needs and motivations, before we translate them into meaningful insights and drive product and service design innovation. Our work has gained international recognition such as the President's Design Award (Singapore), iF, Universal Design Award, IDEA Award and Geneva Innovation Awards.



Overspective is an innovation and design consultancy founded by award winning designer and innovation consultant Ryan Chen. We bridge consumer insights, business viability and technical know-how to define and support our clients' innovation strategy. We help our clients discover business opportunities through consumer insight research and business model design, as well as develop and deepen innovation capabilities via process re-design, and customised innovation training. Through innovative and implementable solutions, we ensure our clients achieve maximum market impact.

APPENDIX I - Examples of Mental Health Issues

Obsessive-Compulsive Disorder

Obsessions are defined as recurrent, persistent ideas, images or impulses. Compulsions are an attempt to reduce the anxiety caused by the obsession. Compulsive behaviour may be physical or mental acts that are repetitive and purposeful, and performed in response to an obsession. Individuals with OCD may have co-morbid depression.

Generalised Anxiety Disorder

The hallmark symptom of GAD is excessive worry — anxiety that is not confined to any particular stressor, but about everyday events or problems. It is persistent and causes significant distress.

Depression

Clinical depression is a discreet biological illness which psychiatrists refer to as major depression or depressive episode(s). At least five symptoms typical of the illness need to be present over at least two weeks to make such a diagnosis. It affects the body, mood and thoughts to a point of dysfunction.

Schizophrenia

Schizophrenia is a major mental disorder that usually occurs in young individuals between the ages of 16 and 30. It affects men and women equally, and occurs at similar rates in all ethnic groups around the world. Contrary to common misconceptions, Schizophrenia is not a disorder of 'split personality', but rather a disorder of fragmented mental processes.

Bipolar Disorder

Bipolar disorder is a mood disorder. The term 'bipolar' means that there are two extremes of mood — depressed ('low') and manic ('high'). There are varying severities of this disorder. Mild cases may pass for normal for many years. In severe cases, the person may become agitated or psychotic.

Borderline Personality Disorder

'Personality' implies it must involve enduring (has been a part of the individual for a long time — usually from adolescence or young adulthood) and pervasive (manifest in a wide variety of social circumstances) traits that are characteristic of the individual. The personality is 'disordered' when it persistently causes significant distress and suffering to the individual and/or other people around him/her.

APPENDIX II - Resources

For current social services available for eldercare:

<http://www.ncss.gov.sg/GatewayPages/Social-Services/Senior>

<http://www.silverpages.sg/care-services>

For more information about the 3 Billion Action Plan to enable elderly persons to age well:

http://www.moh.gov.sg/content/moh_web/home/pressRoom/pressRoomItemRelease/2015/3billion-action-plan-to-enable-singaporeans-to-age-successfully.html

<http://www.straitstimes.com/singapore/ministerial-committee-on-ageing-unveils-3-billion-national-plan-to-keep-seniors-active>

For current social services available for mental health care:

<http://www.ncss.gov.sg/GatewayPages/Social-Services/Persons-with-Mental-Health-Issues>

REFERENCES

ELDERCARE

1. Ministry of Finance. (2016). Budget 2016. *Partnering for the Future*. Retrieved from http://www.singaporebudget.gov.sg/budget_2016/pc.aspx
2. Singapore Department of Statistics. (2016). Admissions and Outpatient Attendances. M870261 - Hospital Admission Rate By Sex And Age, Annual. Retrieved from <http://www.tablebuildersingstat.gov.sg/publicfacing/createDataTable.action?refId=1853>
3. Ng, T. P. (2009). *Chronic disease, functional status and quality of life among the elderly in Singapore*. Singapore.
4. Tai, J. The Straits Times. (2015). One in 10 people over 60 have dementia, new Singapore study claims. Retrieved from <http://www.straitstimes.com/singapore/health/one-in-10-people-over-60-have-dementia-new-singapore-study-claims>
5. The Hongkong and Shanghai Bank, Singapore. (2013). *Retirees in Singapore face 8 years of hardship after savings run out*. Retrieved from <http://www.hsbc.com.sg/1/2/personal/wealth/retirement/retirees-in-singapore>
6. Teo, J. The Straits Times. (2015). More Elderly Suffer from Malnutrition. Retrieved from https://www.nuh.com.sg/wbn/slot/u3007/Patients%20and%20Visitors/Newsroom/Media%20Articles/2015/APR/MYB_16Apr_More_ElderlySuffer_Malnutrition.pdf
7. Ministry of Manpower. (2015). *Labour Force in Singapore 2015*. Singapore.
8. Koh, W. L., Lee, Z. Y. Singapore Department of Statistics. (2013). *Household Living Arrangement in Singapore, 1990 – 2010*. (ISSN Publication No. 0128-6810). Singapore.
9. International Longevity Centre Singapore. (2011). *A Profile of Older Men and Older Women in Singapore*. Retrieved from http://www.ilc-alliance.org/index.php/reports/report_details/a_profile_of_older_men_and_older_women_in_singapore_2011
10. National Population and Talent Division. (2013). *A Sustainable Population for a Dynamic Singapore*. Singapore.
11. International Longevity Centre. (2011). *A Profile of Older Men and Older Women in Singapore*. Singapore. Retrieved from http://www.ilc-alliance.org/index.php/reports/report_details/a_profile_of_older_men_and_older_women_in_singapore_2011
12. Kang, S. H., Tan, E. S., Yap, M. T. Institute of Policy Studies. (2013). *National Survey for Senior Citizens 2011*. Singapore. Retrieved from http://app.msf.gov.sg/Portals/0/National%20Survey%20of%20Senior%20Citizens%202011_Complete_amended_use%20this%20CH.pdf
13. Feng, Z. The Straits Times (2011). *1 in 3 elderly Singaporeans not eating right*. Retrieved from <http://www.healthxchange.com.sg/News/Pages/Elderly-Singaporeans-not-eating-right.aspx>
14. Global AgeWatch Index 2015. (2015). *AgeWatch report card*. Singapore. Retrieved from <http://www.helpage.org/global-agewatch/population-ageing-data/country-ageing-data/?country=Singapore>
15. Teo, J. The Straits Times. (2015). More Elderly Suffer from Malnutrition. Singapore. Retrieved from https://www.nuh.com.sg/wbn/slot/u3007/Patients%20and%20Visitors/Newsroom/Media%20Articles/2015/APR/MYB_16Apr_More_ElderlySuffer_Malnutrition.pdf
16. Ministry of Manpower. (2015). *Labour Force in Singapore 2015*. Singapore. Retrieved from <http://stats.mom.gov.sg/Pages/Labour-Force-In-Singapore-2015.aspx>
17. Housing Development Board. (2014). *Public Housing in Singapore: Resident's Profile, Housing Satisfaction and Preferences. HDB Sample Housing Survey 2013*. Retrieved from <http://www.hdb.gov.sg/cs/Satellite?c=HDBDoc&cid=1383797763890&pagename=InfoWEB%2FHDBDoc%2FDocLayout>
18. Wong, W. M., Teo, Z. W. Singapore Department of Statistics. (2011). *The Elderly in Singapore*. Singapore. Retrieved from https://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications_and_papers/population_and_population_structure/ssnsep11-pg1-9.pdf
19. Mathews, M., Straughan, P.T. Institute of Policy Studies. (2014). *Results from the Perception and Attitudes towards Ageing and Seniors Survey (2013/2014)*. Singapore. Retrieved from http://lkyspp.nus.edu.sg/ips/wp-content/uploads/sites/2/2014/10/wp22_1510151.pdf
20. Mathews, M., Straughan, P.T. Institute of Policy Studies. (2014). *Results from the Perception and Attitudes towards Ageing and Seniors Survey (2013/2014)*. Singapore. Retrieved from http://lkyspp.nus.edu.sg/ips/wp-content/uploads/sites/2/2014/10/wp22_1510151.pdf
21. Choo, Jin Kiat. Interviewed by Michelle Chen Meixuan. 13 April. 2016.
22. Tai, J. The Straits Times. (2011). *Old and home alone in Singapore*. Retrieved from <http://www.straitstimes.com/singapore/old-and-home-alone-in-singapore>
23. Dr Foo, Fung Fong. Interviewed by Jeremy Sun. 28 April 2016.
24. Ng, T. P., Jin, A., Feng, L., Nyunt, M. S. Z., Chow, K. Y., Feng, L., & Fong, N. P. (2015). *Mortality of older persons living alone: Singapore Longitudinal Ageing Studies*. Singapore. Retrieved from <http://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-015-0128-7>
25. Housing Development Board. (2014). *Public Housing in Singapore: Social Well-Being of HDB Communities. HDB Sample Housing Survey 2013*. Singapore.
26. The Sunday Times. (2012). *Lonely and depressed elderly cause for worry*. Retrieved from https://www.nuh.com.sg/news/media-articles_2349.html

MENTAL HEALTH CARE

1. World Health Organisation. (2016). *Mental health: strengthening our response*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs220/en/>
2. Chong, S.A., Abdin, E., Vaingankar, J. A., Heng, D., Sherbourne, C., Yap, M., Lim, W.Y., Wong, H. B., Ghosh-Dastidar, B., Kwok, K. W. & Subramaniam, M. Annals Academy of Medicine. (2012). *A Population-based Survey of Mental Disorders in Singapore*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo2Feb2012/V41N1p49.pdf>
3. Chong, S.A., Abdin, E., Vaingankar, J. A., Heng, D., Sherbourne, C., Yap, M., Lim, W.Y., Wong, H. B., Ghosh-Dastidar, B., Kwok, K. W. & Subramaniam, M. Annals Academy of Medicine. (2012). *A Population-based Survey of Mental Disorders in Singapore*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo2Feb2012/V41N1p49.pdf>
4. Harvard School of Public Health. (2011). *The Global Economic Burden of Non-communicable Diseases*. Retrieved from http://www3.weforum.org/docs/WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf
5. Harvard School of Public Health. (2011). *The Global Economic Burden of Non-communicable Diseases*. Retrieved from http://www3.weforum.org/docs/WEF_Harvard_HE_GlobalEconomicBurdenNonCommunicableDiseases_2011.pdf
6. Institute of Mental Health. (2011). *Latest Study shed light on the state of mental health in Singapore*. Retrieved from https://www.imh.com.sg/uploadedFiles/Newsroom/News_Releases/SMHS%20news%20release.pdf
7. Chong, S.A., Abdin, E., Vaingankar, J. A., Kwok, K. W. & Subramaniam, M. Annals Academy of Medicine. (2012). *Where do People with Mental Disorders in Singapore go for help?*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo4Apr2012/V41N4p154.pdf>
8. Chong, S.A., Abdin, E., Vaingankar, J. A., Heng, D., Sherbourne, C., Yap, M., Lim, W.Y., Wong, H. B., Ghosh-Dastidar, B., Kwok, K. W. & Subramaniam, M. Annals Academy of Medicine. (2012). *A Population based Survey of Mental Disorders in Singapore*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo4Apr2012/V41N4p154.pdf>
9. Chong, S.A., Abdin, E., Vaingankar, J. A., Heng, D., Sherbourne, C., Yap, M., Lim, W.Y., Wong, H. B., Ghosh-Dastidar, B., Kwok, K. W. & Subramaniam, M. Annals Academy of Medicine. (2012). *A Population based Survey of Mental Disorders in Singapore*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo4Apr2012/V41N4p154.pdf>
10. Institute of Mental Health. (2011). *Latest Study shed light on the state of mental health in Singapore*. Retrieved from https://www.imh.com.sg/uploadedFiles/Newsroom/News_Releases/SMHS%20news%20release.pdf
11. Chong, S.A., Vaingankar, J. A., Abdin, E., Subramaniam, M. (2013). *Mental disorders: employment and work productivity in Singapore*. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22660835>
12. Chong, S.A., Vaingankar, J. A. & Subramaniam, M. Annals Academy of Medicine. (2012). *Policy Implications of The Singapore Mental Health Study*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo6Jun2012/V41N6p258.pdf>
13. Chong, S.A., Abdin, E., Vaingankar, J. A., Kwok, K. W. & Subramaniam, M. Annals Academy of Medicine. (2012). *Where do People with Mental Disorders in Singapore go for help?*. Retrieved from <http://www.annals.edu.sg/pdf/41VolNo4Apr2012/V41N4p154.pdf>

14. Chong, S. A., Vaingankar, J. A., Abdin, E., Subramaniam, M. (2012). *Mental disorders: employment and work productivity in Singapore*.
15. Chong, S. A. Institute of Mental Health. (2013) *Bridging the Gap for People with Mental Illness*. Retrieved from http://www.worldhealthsummit.org/fileadmin/downloads/2013/WHSRMA_2013/Presentations/Day_3/Siow%20Ann%20Chong%20-%20Bridging%20the%20Gap%20for%20People%20with%20Mental%20Illness.pdf
16. Claudia, Ma. Interviewed by Michelle Chen Meixuan. 12 April. 2016.
17. Chong, S.A., Abdin, E., Vaingankar, J. A., Heng, D., Sherbourne, C. et al. Annals Academy of Medicine. (2012). *A Population-based Survey of Mental Disorders in Singapore*. Retrieved from <http://www.annals.edu.sg/pdf/41/VolNo2Feb2012/V41N1p49.pdf>
18. Rao, S. *The Singapore Family Physician Vol 39. Management of Relapse in Schizophrenia*. Retrieved from <http://cfps.org.sg/publications/the-singapore-family-physician/article/12>
19. Burcusa, S. L., Lacono, W. G. *Clinical Psychology Review*. (2007). *Risk of Recurrence in Depression*. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2169519/>
20. Dr Wei, Ker-Chiah. Interviewed by Jeremy Sun. 27 April. 2016.
21. Institute of Mental Health. (2015). *IMH's National Mental Health Literacy Study Shows Dementia, Alcohol Abuse and Depression are the Most Recognisable Among Common Mental Disorders*. Retrieved from https://www.imh.com.sg/uploadedFiles/Newsroom/News_Releases/6Oct15_Mind%20Matters%20Media%20Release.pdf
22. Institute of Mental Health. (2015). *IMH's National Mental Health Literacy Study Shows Dementia, Alcohol Abuse and Depression are the Most Recognisable Among Common Mental Disorders*. Retrieved from https://www.imh.com.sg/uploadedFiles/Newsroom/News_Releases/6Oct15_Mind%20Matters%20Media%20Release.pdf
23. Lai, L. *The Straits Times*. (2015). *Mental illness 'not all in the mind'*. Retrieved from <http://www.straitstimes.com/singapore/health/mental-illnesses-not-all-in-the-mind>
24. Vincent, Budihardjo. Interviewed by Michelle Chen Meixuan. 28 April. 2016.



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