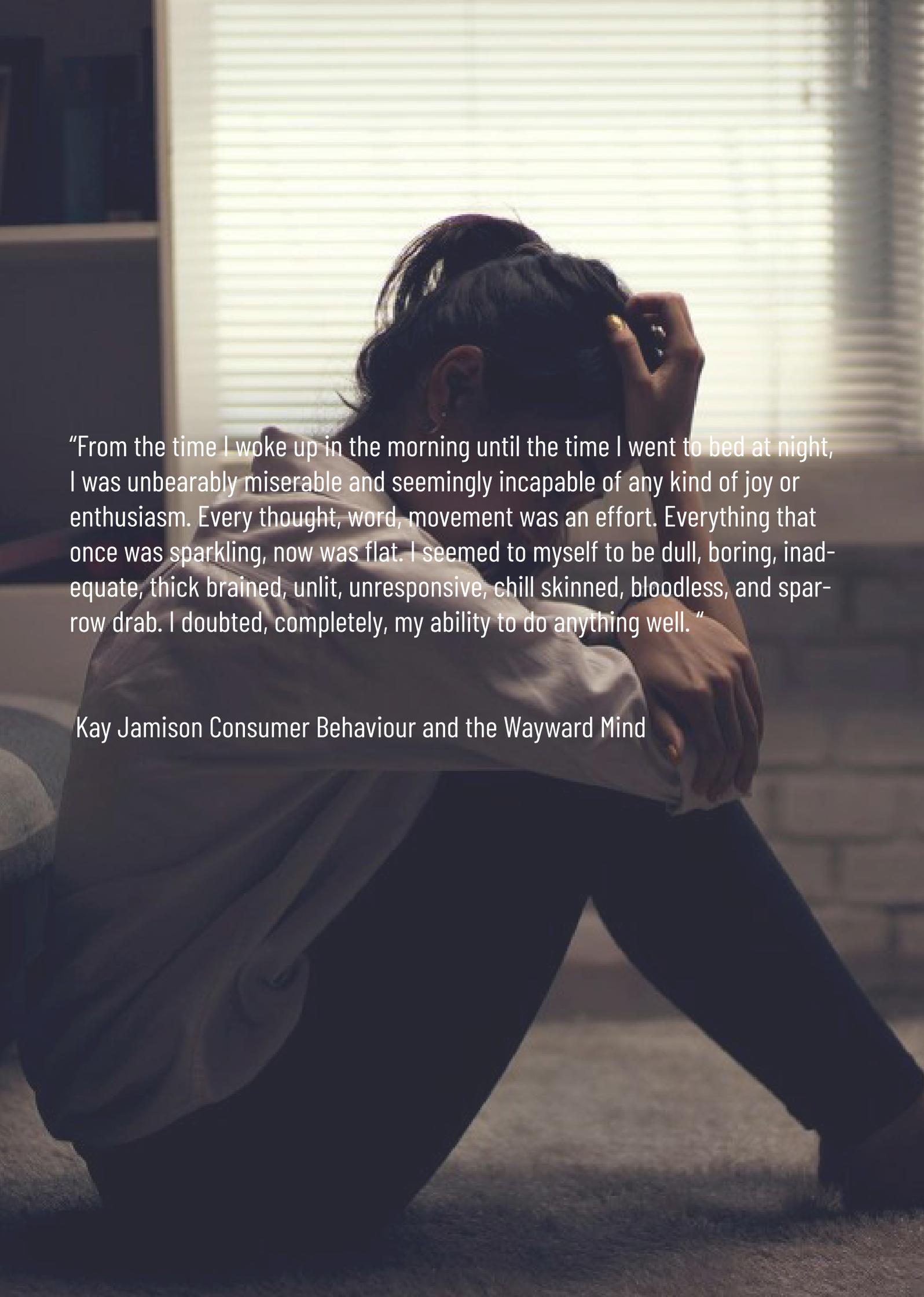


The Mental Health Journey

Creating a new means to monitor and treat mental health

A person with dark hair tied back is sitting on a carpeted floor, hunched over with their head buried in their hands. They are wearing a light-colored, long-sleeved shirt and dark pants. The background shows a window with horizontal blinds, through which soft, diffused light is coming. The overall mood is one of despair or exhaustion.

“From the time I woke up in the morning until the time I went to bed at night, I was unbearably miserable and seemingly incapable of any kind of joy or enthusiasm. Every thought, word, movement was an effort. Everything that once was sparkling, now was flat. I seemed to myself to be dull, boring, inadequate, thick brained, unlit, unresponsive, chill skinned, bloodless, and sparrow drab. I doubted, completely, my ability to do anything well.”

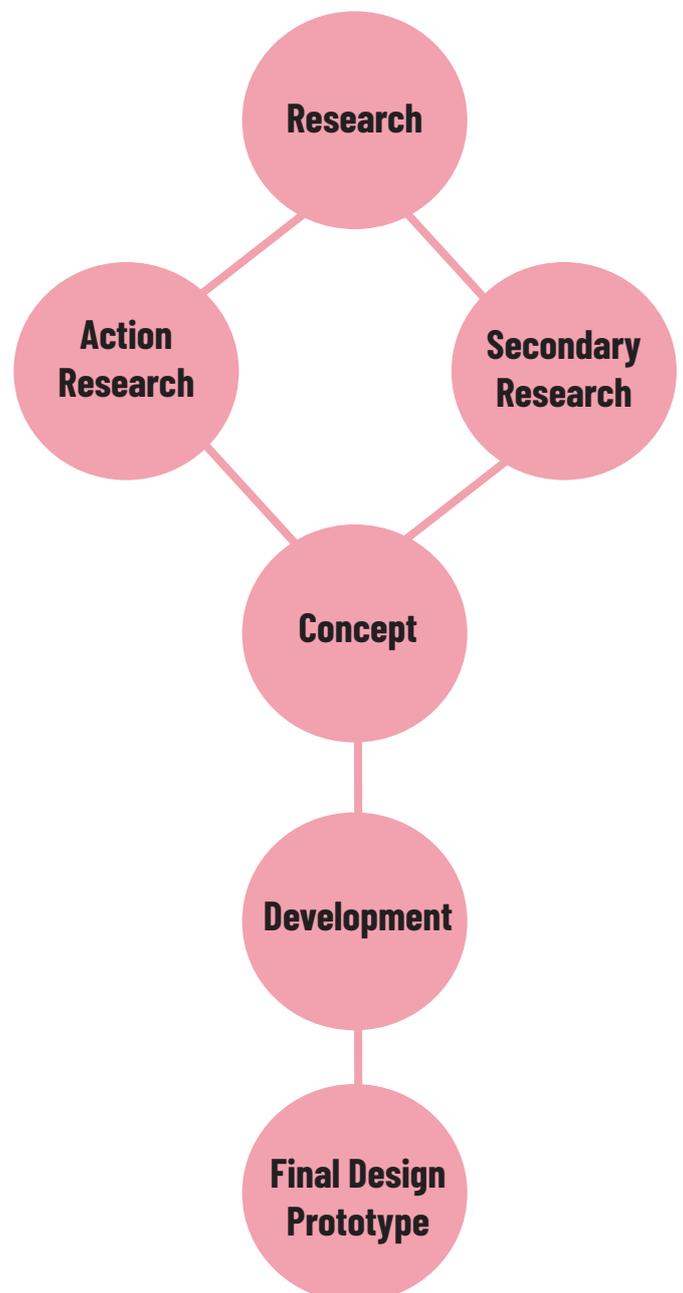
Kay Jamison Consumer Behaviour and the Wayward Mind



By Jordan McNally

Executive Summary

In 2019 suicide was the main cause of death for Australians aged 15 to 49 years in 2019 (beyond blue, 2019) this glaring statistics show how mental health is becoming one of the most damaging illness within our society causing major problems to our health. Through lived experience I have seen the worst side of depression and how it can completely take a hold of someone's life and those around them as I question the current system and treatment in place to help provide better health. Mental health is very complex as every user is different in some way but we need to find how we can connect a user with themselves and others better and discover self participation and positive emotion. Exploring in detail the current treatments of rehabilitation and medication will help indicate where there is need change and bring a more connected system between a user and their own health. Exploring user behaviours, rehabilitation, routines, health cycle, the body and senses using both primary and secondary data will help define how we can potentially identify when a user is shifting downwards and how help them out of it.



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1.0 The Topic

The background of the slide features a series of wavy, concentric lines in shades of orange and light brown, creating a sense of depth and movement. The lines are more densely packed on the right side and become more sparse towards the left.

1.1 Introduction

It was about 5 years ago when coming home from AFL my father was caught driving under the influence of alcohol, after going home while we were playing to go and drink. This was the start of the slow cycle downwards for my father where, over the years countless more incidents have occurred with the worst experienced with the combination of alcohol abuse. This has not only affected my father but our family as well, with many fractured relationships that has affected our health as well, experiencing this mental change. Over the years I have continued to wonder how and why? I have been questioning the current methods of treatment and how we can better our health and, most importantly, limit the worst side of depression. It is also challenging to get help and acceptance. Less than 50% of people living with depression globally are receiving treatment This has inspired me into the topic of mental health, as we have seen the prevalence of this disease rapidly rise due to stressful living and tough times as it can impact a user's education, work, relationships and cause disability.

This illness is literally killing people with about 3,000 people dying each year in Australia from suicide, and the number have been rapidly rising since the early 2000s. The important answers to find with mental health are, how do users think, and what shifts on a cognitive level, as well as on their body, and how the environment and treatments can result into a negative event out of trying to create positive situations. Using my father as an example, I also question why it is we send him to hospital/rehabilitation after an event, and then he comes back and slowly relapses as if there's no connection with his health and treatment.

Many challenges lie with mental health as everyone is different in some way and recovering from this can be challenging with current methods only working for a short time, which I have experienced. My goal is not only to better understand and treat this illness but also create an acceptance of the illness to connect the user to the world and hopefully prevent or help those that fall to rise back up and enjoy what life has to offer.

How Common are Mental Illnesses Globally?

Global Figures (2017)

264M

Depressive Disorders affect 3.4%

46M

Bipolar Disorder affects 0.6%

284M

Anxiety Disorders affect 3.8%

20M

Schizophrenia affects 0.3%

107M

Alcohol Use Disorder affects 1.4%

71M

Drug Use Disorder affects 0.9%

16M

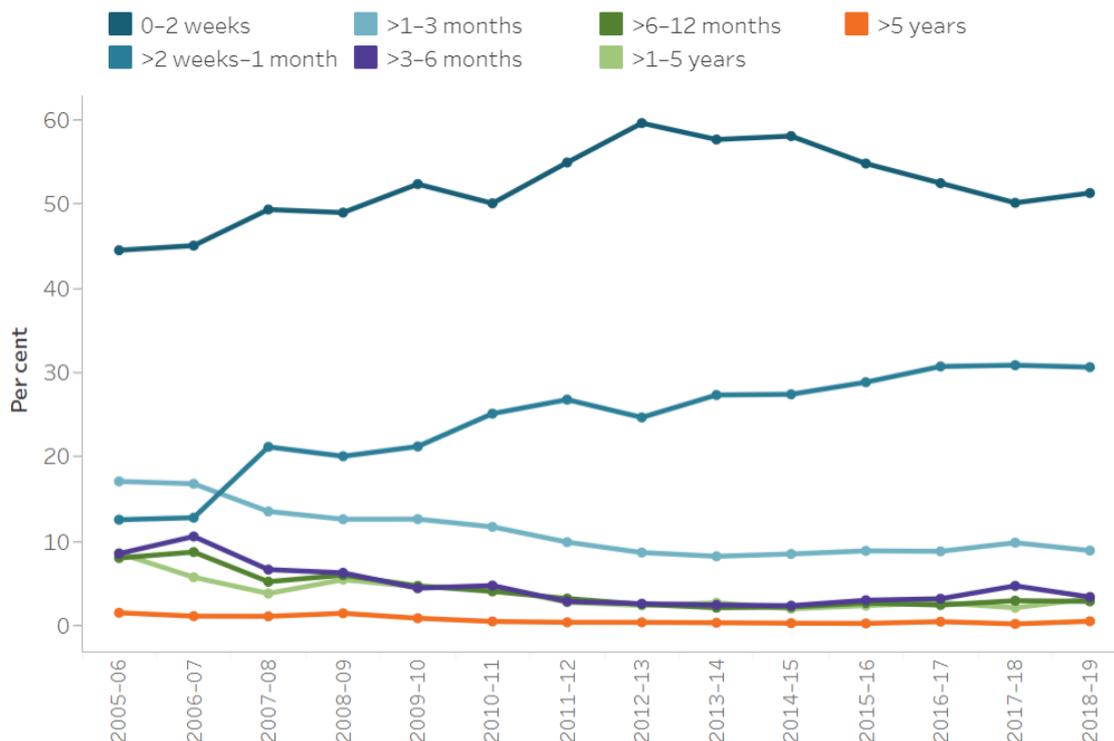
Eating Disorders affect 0.2%

figure 1.1 Mental Health First Aid International (2021)

1.2 Rehabilitation

Treatment methods can be categorised in two forms. Psychotherapeutic treatments which involve rehabilitation and behaviour therapy. Somatic treatments use drugs and electroconvulsive therapy. Rehabilitation has been a common way to treat mental health at its worse, as the goal is to learn skills and tools to bring to the outside world to help navigate depression and prevent downfalls. Currumbin Clinic is the rehabilitation centre my father attends. It is regarded as the centre for excellence in mental health on the Gold Coast. A big part of the rehabilitation which my father also participates in is the Group Therapy sessions where groups with similar situations are brought together to connect and discuss around their chosen topics. In the group setting they will try and replace old behaviours with newer, more productive ways. They provide resources, education and clinical support to enhance wellbeing and use programs to try and present what matters and how to increase awareness, mindfulness, understanding values to build better motivation. The programs are based on building strength and resilience that are conducted within the facility which can also be seen at the Bayans Health Facility which is another rehabilitation Centre. What these places have in common are that they are both quite secluded from the outside world and are private, meaning the patient has full control. We also see patients

only staying at these facilities for short periods shown below, but having contact regularly, with 40% of registered patients in Australia having a registered treatment lasting 92 days or longer, where most will receive weekly check-ups according to AIHW (2019). Medication has also been the most common treatment method with users often having to take a variety of different anti-depressants to help boost health. Serotonin is one of the target areas for medication which is used to help regulate sleep-wake cycles and the body clock. Boosting Serotonin usually effects mood, where it can also be boosted through natural remedies like meditation. Currently treatment for mental health is still not overly present as fewer than 50% of people living globally with depression receive treatment, as it is very hard for users to accept and get help. It has also been found in studies, that activity-based therapy is much more effective than just verbal based therapies. Reasons for suicide stems from mental health with bad health choices both physical and emotional like sleep changes and withdrawal from friends. Depression feels like it is following you where the Black Dog institute (2021) quote "referred to as a black dog, and just as a real dog it always follows you around, needs to be embraced, understood, taught new tricks and eventually brought to heel" sums up how these factors are forgotten .



Source: National Residential Mental Health Care Database; Table RMHC.9.

Figure 1.2 Residential mental health care episodes (%), by length of completed residential stay , 2005-06 to 2018-19

1.3 User Behaviour

One of the current issues with depression and mental health is that people respond in different ways, with some signs not being visible, while others can have serious emotional reactions. Denial is one of the most common behaviours first experienced by users to protect themselves from their situation. Every person has different feelings and emotions which vary day to day, but we can understand some key behavioural changes which could cause these or be a result of heightened emotions. Changes in behaviour could include confusion, delirium, delusions, disorganized speech, hallucinations and mood extremes which are all key indications that something is wrong for a user. These changes can be seen both physically and emotionally, but the challenge is identifying these as they may be hard to recognise when mental health first evolves and easy to identify when at worst. Some other key changes can include agitation, hibernation, lethargy, procrastination, diet and sleep where a user's

depression and cognition can also diminish their working or active memory capacity. A big reason for a behavioural shift is the way we experience different environments and situations which effects our overall health the most. These can affect a user physically, emotionally and socially where it can influence their senses as April Snow from LMFT (2021) discusses "the lighting, temperature, sounds, smells and colour palette of an environment are very important to how comfortable, relaxed and safe you feel" Understanding behaviour could lead to better treatment like predictive learning, for example the fact that the smell of food usually predicts that a tasty meal is forthcoming.

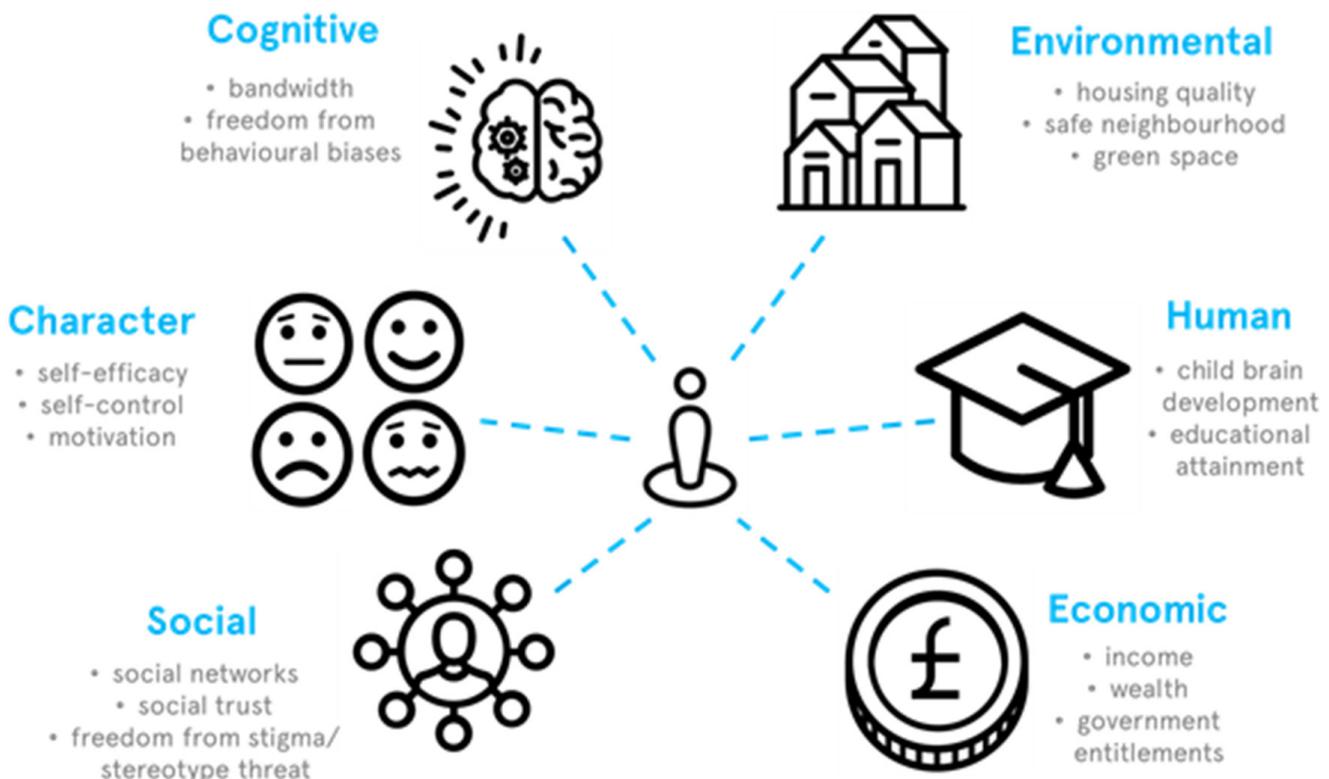


Figure 1.3 How Behavioural Science can Improve Opportunity (2016)

1.4 Routines and Cycle

A huge area of mental health that is unclear is the basis of routines and daily habits. They are seen to help prioritise what's important, knowing what to do, boost creativity and drive you forward where your life today is essentially the sum of your habits. As experienced, mental health is often an effect from routines where we live the same life over and over again doing the same job where our interest can slowly fade which is a symptom of a behavioural shift. What is most surprising is that after rehabilitation or current treatment methods, users are given new routines labelled as 'healthy' which uses strategies of good diet, exercise and sleep to better health. These indications do have positive effects on our health, but after getting stuck

with a new same day routine users can again lose interest and then relapse which is the perfect example with my father. Participation and self-advocacy are most important when adapting to a routine as in a study 'Exploring the experience of users and professionals' (2009) used these themes to interview 10 users and six professionals where all informants valued user participation and highlighted the importance of the environment. Quoted here "if you pick the right small behaviour and sequence, it right, then you won't have to motivate yourself to have it grow. It will just happen naturally, like a good seed planted in a good spot."

1.5 Haptics and Feeling

The most complex part of diagnosing mental health is understanding a user's feeling and how to best guide them through it. Especially during depression, feelings can be irrational making it challenging to bring users back on a continuous path.

A neuroscience study (The Human Brain Haptic Exposure, 2018) on haptics was conducted where the thought of feeling could impact a user's feeling in a more meaningful way. The study found that haptics was highly effective at shifting one's attention to a more emotionally compelling environment instead of a visual and audio environment. Results surprisingly showed that haptics could affect appeal and interest for a user. It was seen that an average 40% increase was experienced in recalling visuals from haptics than without. Haptics could be used as a tool for memory which fades in depression. Creating positive feelings within memories could be used as a trigger to boost fading health by 8% of higher motivation and engagement responses than without. The idea of being creative also encourages positive change with New Zealand Scientists finding that engagement in creative behaviour, like a hobby, can lead to increases in wellbeing that can last until the next day. An example of this is shown with my dad's boost in motivation straight after rehabilitation, but the question is how to maintain this as it slowly falls back down

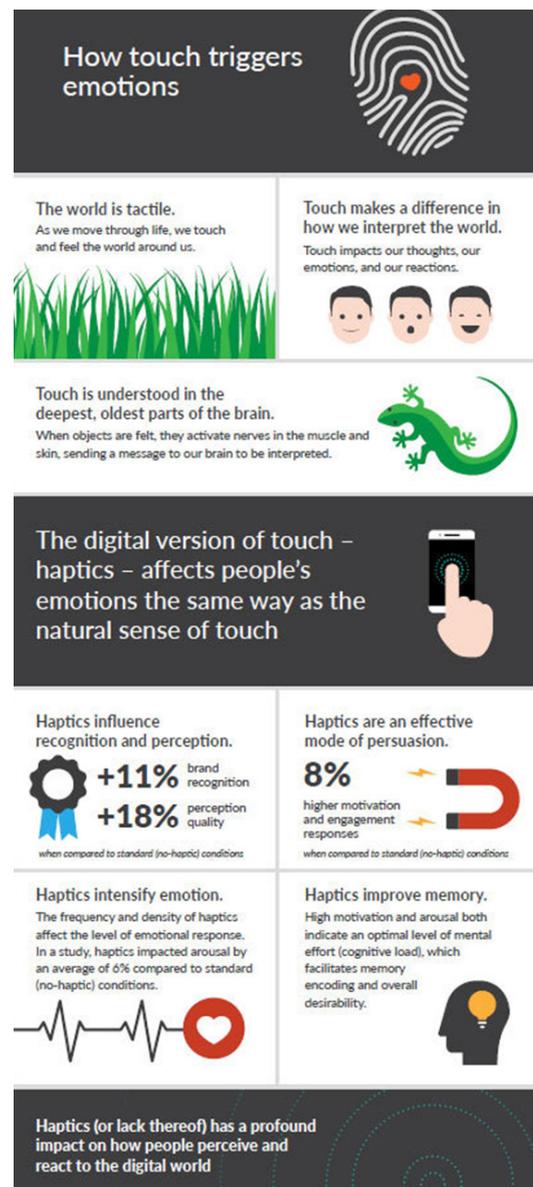


Figure 1.4 Haptic exposure Generates Positive Emotion

1.6 Neuro and Brain

Research has seen that there are changes within the brain activity, but there is still much that we don't know. We know that disturbances in normal chemical messaging processes between nerve cells in the brain are believed to contribute to depression. Factors leading to irregular mood swings can include genetic vulnerability, severe life stresses, medication/ drugs and alcohol and some medical conditions. Some technologies like EEGs are used to measure activity patterns within the brain to help interpret data and be used as an objective measurement of depression. However, this requires a lot of technology on a user's head and can become quite confronting, and users wouldn't wear this out, so we wouldn't be able to indicate environmental factors which is one of the biggest contributing factors to health. An example we can look at

for seeing the shift in emotions is with studying for exams or doing Christmas shopping, both sources use different emotions and have emotional feeling to its context. It is seen that we can also optimize our brain waves for better productivity where there are five types to focus on. This includes Delta, Theta, Alpha, Beta and Gamma where Alpha focuses on relaxation and recharging. Applying these waves can have some seen benefits for example Binaural beats which uses two sources of sound frequencies to boost alpha waves. However, it still isn't clear of its effects, but applying these waves definitely has potential with the creativity and feeling music has on users, being a strong technique to calm and help users relax.

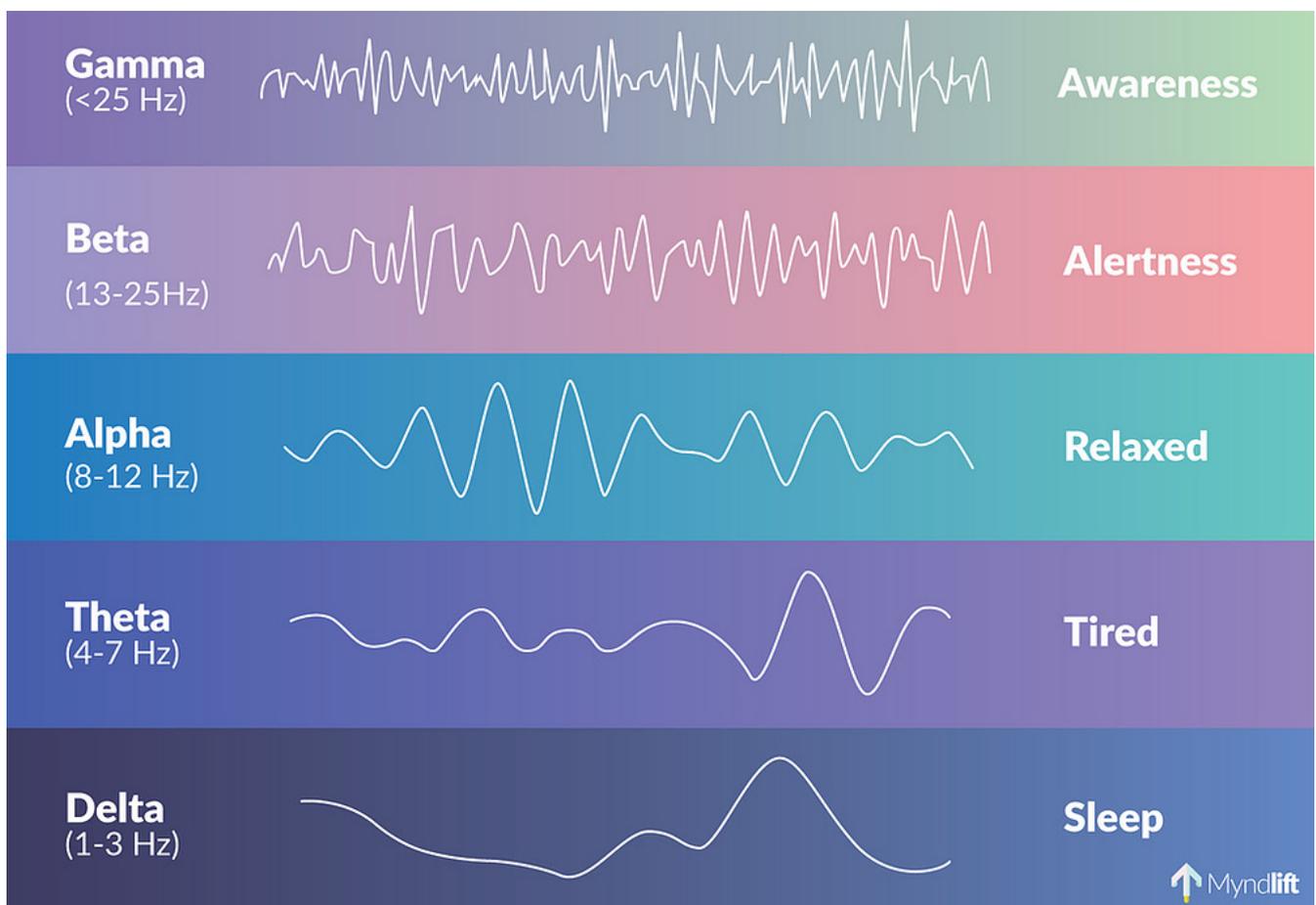


Figure 1.5 How Does Our Brain Work, Brainwaves (2018)

1.7 Nature and Body

There has been a lot of research comparing the virtual world to our normal one where it has been seen that a virtual one can benefit our health. However, we currently can't just stay in a virtual sphere and the real world can also bring out emotional wellness and benefit health. Green space and bringing nature to you in the form of life has many positives to a user for example being around animals with a study conducted (The Power of Support from Companion Animals, 2018) found that 15 out of 17 groups found that pets had a positive effect with helping with social interaction and emotional nourishment. However, there were negative aspects to this study. Results were based on when pets die, which can spark depression. As said "nurturing something else into life has really helped my well-being - gently caring for something helped me learn to care for myself" The Atlas of the human body (2014) maps out where we feel emotions. The research was created by Finnish scientists who had 700 volunteers

where the team showed them various things like words, stories and movies. Emotional signatures were seen in different parts of the body and are "culturally universal" where we can also draw some indication where mental health can stem from. Depression completely numbs the body when anger is felt in the head. But the most targeted area here is the upper chest where we can see anger, fear, anxiety and shame which we can look further into how to treat them.

Exploring the Chakras which relates feelings and emotions to parts of the body shows connections with the study where the heart Chakra is seen as the biggest area to target as it filters into the rest of the body. We may assume the head to be the prime target, but the Chakras explain that it is harder to filter through to the rest of the body as we focus on our upper chest and heart spreading the feeling and sensation is much more achievable.

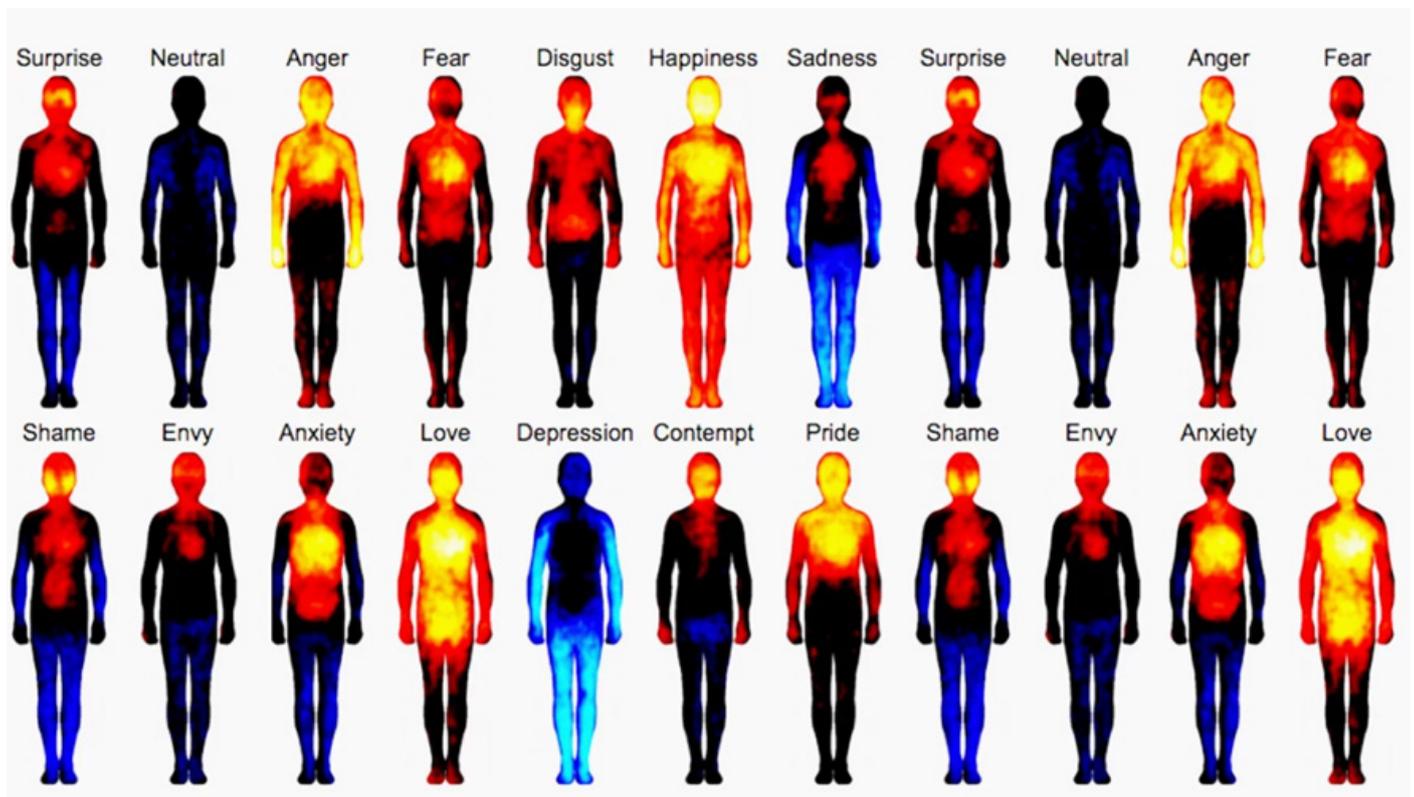


Figure 1.6 Atlas of the body (2014)

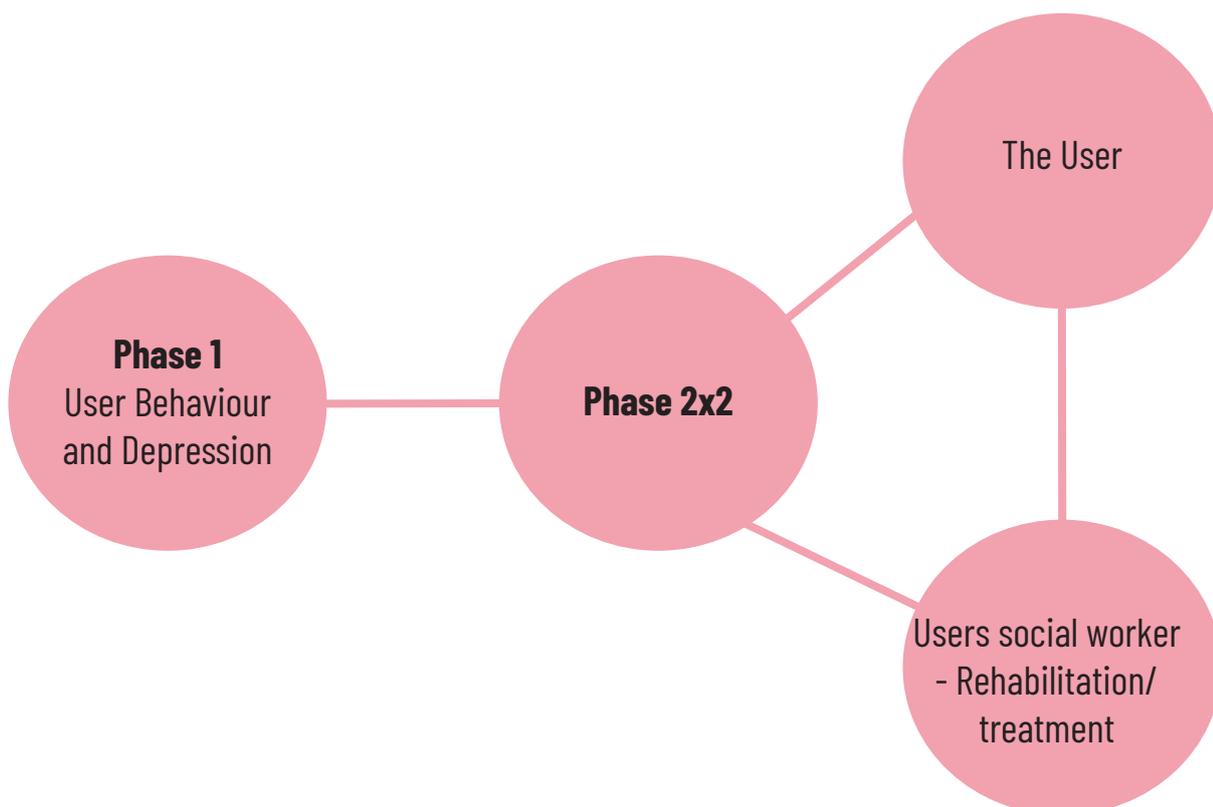
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2.0 Primary Research

2.1 Methodology and Methods

For this project my two main goals were to understand the user and understand behaviour. These two points are vital in defining what to target with mental health and how to potentially treat it. The study conducted was to do action research through multiple loops. I started my research with my own observations with my father, and my lived experience, and how I identified his health journey. I then planned the study, gathering the rest of my primary data through interviews where I could get more insight into a conversation style, as this process also brings me back to the topic and some of its treatments with talking and therapy. Mental health is a very challenging topic, and it was most important to engage in interviews as my main method, because it can be hard to identify truth and understanding through other means like surveys. I conducted interviews with 3 people, doing a loop after each person then synthesizing my findings to do my final interviews. My first loop was conducted to get an understanding of user behaviour from a professional standpoint and some key determinants of health to bring forward. This interview was conducted with Professor Ross Young who is in the Faculty of Health at QUT, Doctor of Philosophy and in behaviour research projects. I conducted this interview via zoom and discussing with Ross the concept development phase, drawing on other themes around health determinants, routines and the

downfall cycle of depression. I used these findings to move into my most important loop which was to understand the user from their perspective and their therapist's perspective. I used my own observations and interviewed my mother to understand my father's illness. I also interviewed Jamie Hicks who is a Human Services Clinician at Currumbin Clinic, working with my father. These were targeted at getting two points of view where I could draw disconnection between current treatment and ways to best assess health. Other areas covered in these interviews involved therapy treatment with rehabilitation and how routines work as well as positive impacts that could help health. Lastly, I did a follow up interview with my mother who has lived experience, to summarize my final thoughts and understanding on how a user works and how their body, mind and behaviours work, and to understand their feelings. The tools used through these interviews were my DDR and secondary research to assist in pinpointing target areas. To assess these interviews, I used highlighting and sticky notes as first means of evaluation of the transcriptions then transferring to a key table form. I then did a second evaluation of findings and lastly drawing out key points to relate to themes in a table style format to finalise findings.



2.2 Phase 1 Findings

Core theme	Categories	Example quote
[Redacted content]		

2.3 Phase 2 Findings



Core theme	Categories	Example quote
[Redacted content]		

hard at being okay to do it.

2.4 Analyzing Data and Findings

Analysing data:

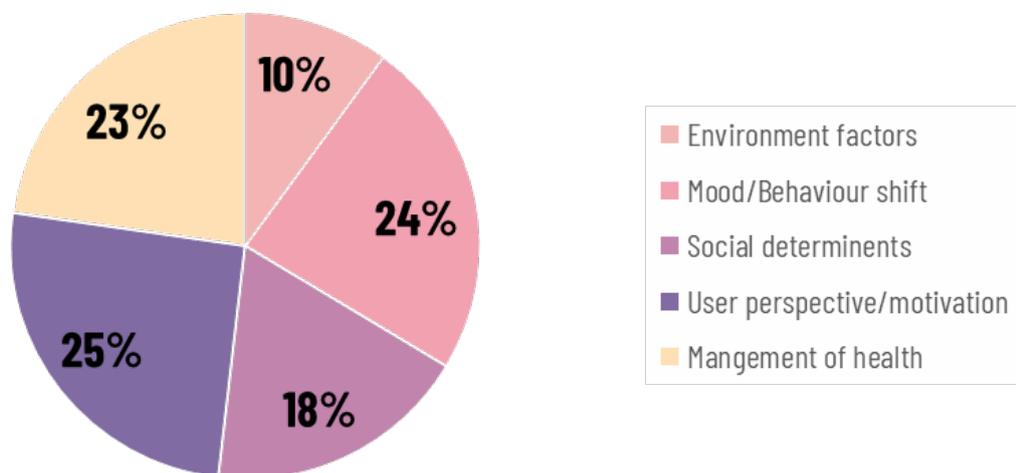
I conducted very thorough analysis of my interviews combining multiple techniques to help provide me with the key information and themes to move forward. I started my analyses with replaying my interviews and initially highlighting key information. In the next phase I went over the notes on key themes and comments that I thought were most important, which helped move into collating my data into themed tables, further extracting pieces of information. I lastly graphed and coded my final thoughts and used this as a guide to form my problem and goal of my project. Using many methods of evaluation and repeated viewings were vital to take informative findings out of the data and not to come up with my own assumptions, but what the data represented and the best means of action.

Findings:

My findings heavily changed my initial perception of tackling this problem. My initial goal was to focus on severe depression and solve this issue. However, from my interviews the most important aspect of health is how things shift, and the time where people experience different things, which can make mental health so unpredictable. To effectively make a difference to mental health you need to look at the whole journey from a current state to the downfall cycle, then to our worst state. Each aspect needs to be targeted so we can assess behaviours, signs, mood and what is our best self to develop

relationships. Not only can we assess these attributes better but by assessing each stage of mental health we can also engage more acceptance within our community, where we can change our health view from the mentally ill to people that are fine which is currently the biggest disconnection within the system. The dynamic shift is vital in mental health where the user's environment plays a huge role, where I found how rehabilitation can be used like a high and putting a user back into the world creates so many challenges where I found that even the most safest places, like your bedroom, can be the worse for a user with bad thoughts, stemming from this place, seen through my father spending lots of time here and not experiencing the world. The concept of routines was also a heavy presence in these interviews where the idea of a random routine to spark more motivation within a user was seen in a mixed response, finding that my user wouldn't be able to cope, especially during his worst stages. From this we need to have a sense of connectivity with the user and help propel their own momentum for positive change. When speaking to both my user and therapists I found some disconnection between this relationship with most stemming from when they don't have contact and when the user is outside of this 'bubble' he tends to be more self-conscious and afraid of surrounding situations. The most interesting aspect of these interviews was each person's view on medication, all agreeing it has positives, but also many side effects and we should be focusing on the more social determinants of health.

Most prevalent themes that came up



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3.0 Discussion and Design Implication

3.1 Discussion

The literature review was thoroughly reviewed with the assessment of interviews conducted. At the beginning of the research phase I was already aware of topics around rehabilitation, user behaviour and routine, would be a major part to explore, as I have experienced these all having a lot of problems with my user. Exploring these topics through both my primary and secondary data I discovered the importance of the process and location of health as behaviours and attitude changes can stem from environments that are meant to be safe for example finding out the bedroom and these rehabilitation facilities can be creating a delayed low. A user can experience their worst at a safe place or can feel comfortable in a safe place, but it will only last short term. Therefore, mental health needs to be assessed long term and this trait needs to be believed by users as this is currently lacking with users believing it can be a quick flick of a switch to change or doing a good deed will help. Another example I found was with my father involving himself in volunteering work, so he is doing a good deed to feel good about himself but when they call him in to work, he backs off or after work he comes home sad. Therefore, health needs to be tailored to an individual and slowly develop their motivation and evolution of their mental and physical aspects. The exploration of routine was a big topic for me to explore because I didn't understand the purpose of sustaining positive health. I explored this with ideas of randomness or positive surprises to bolster health, where this received mixed results where it could only be achieved when a user is in a healthy state where at worst it could create further

anxiety. My primary data also led me to explore further specific topics of the brain, body, feelings, nature and sound. We really need to activate all our senses because if we do this then we can gauge more of an emotional and physical connection that can stem positive change. The topic of reality vs virtual was explored a lot through this study. I discovered that at this point in time virtual can only be sustained for a certain amount of time and from this positive health cannot be sustained. The research led me to conclude that we need to tackle a natural side of managing and experiencing our health as the individual will need to focus on life itself. I found living things like pets can create a strong relationship with a user and bolster health. The biggest gap I discovered throughout my study was the disconnection within the current system, with false views and perceptions about experiencing rehabilitation. Some users will not show emotion during these stages and create further problems with no one knowing the best way to help assist a user. But the major problem lies with how we currently view health as we see it as either being well or being severely depressed and not the whole process or cycle of health. We need to assess health through its whole process from good health to the slow decline of depression to severely depressed. In doing this we can be more informed in the strength and weakness of a user, and we can better manage their health, they need to be motivated for any chance of finding their true positive self.

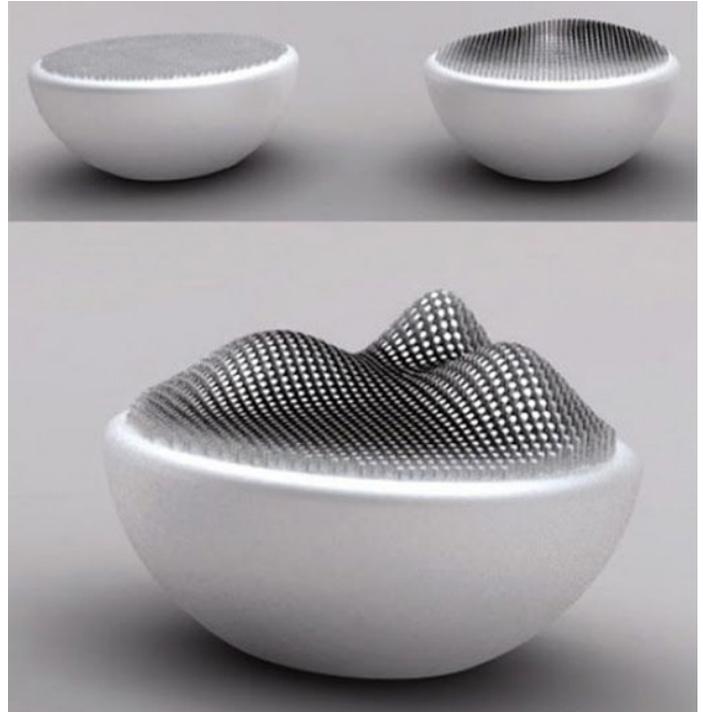


(Figure 2.1 Currumbin Clinic, 2021)

3.2 Design Implications

Findings Mean For Design

This study brought out some key findings that have to be addressed to effectively create positive health choices. Creating participation is key for a user to be positively engaged in a task and the effectiveness of others influencing a user's decision can also put doubt in their mind. Combining a guiding process with promoting self-engagement with participation and promoting feelings is a key principle for design that needs to be assessed in each stage of health. The different stages of health also bring different factors of engagement where the design will need to be adaptable to a user through their health journey, identifying risk factors especially early on can be challenging. I found when someone became severely depressed it then becomes easier to notice but altering them can be challenging. If we can evaluate and assess these signs through their health process, there can be potential to move a user out of severe depression to a more mutual state



(Figure 3.1 Design Inspiration Behance, 2021)

Problems/Opportunities

The biological aspect of mental health is like a drug, short glimpses of highs followed by big lows and the treatment for this is drugs, that eventually do a similar thing. The ability of nature to affect a user's mental health is profound, research shows that contact with some form of nature or living thing may reduce stress, improve memory and potentially increase feelings of kindness, happiness and creativity. Some other studies even suggest that subjects with greater exposure to the natural world exhibit a higher number of happiness indicators. This example can be seen with my father with him constantly spending too much time in the bedroom as it may feel like a safe space but over time outside this space becomes worse where the bedroom almost becomes the worse place for him. This

natural tendency can be further implicated with the use of materials especially tactile ones where uses like natural fibres, or the feeling could support positive mental well-being and engage users directly with their sense of touch which is currently overlooked in mental health treatment. This can also encourage the user to further interact with their surroundings, becoming more aware of the world and processing more information. The use of touch, hearing, feeling, talking and movement can help users keep in touch with the body and mind prompting further motivation and self-drive within the real world. Combining these senses and monitoring a user could help provide a connected system promoting positive change

3.3 Key Opportunities

- 1 Connecting rehabilitation with user
- 2 Proactively assessing and managing health
- 3 Using both body and the mind
- 4 Targeting multiple senses
- 5 Adapting to multiple environments
- 6 Connecting with the natural world

Mental Health Cycle



3.4 Using Our Senses



Can be used to create a physical connection between the body and mind. We can stimulate several sensations that can be communicated with the brain that can encompass pressure, temperature, light touch, vibration, pain and other types.



Feeling can be categorized in two forms being physical and emotional where a physical feeling like touch can provoke the above features. On an emotional level feeling is directly related to factors that contribute to depression like anxiety and stress. Provoking positive feeling here could mitigate these concerns.



This sense related directly to sound and how sound waves reach the tympanic membrane, or eardrum. Mentioned earlier brain waves can potentially be used to help a user to change their state, shifting them to a more calm state.



This relates directly with our environment and how we view living things and often seeing things provokes health in all sorts of way. This can be leverage to provide calming visuals and using features that can attract participation within a user where their applying more of a self driven approach to health.

3.5 Active Therapy and Monitoring

From the research conducted the key problem discovered was how can we actively monitor health and even go one step further by applying therapy during these time. Behavioral research concluded that identifying the shifts and mood are vital in treating where the users movement, actions, body and emotion can all be used . It was very interesting to find the disconnections in current treatment and how from lived experiences we can see they can be ineffective to users especially when they are conducted in safe grounds which cause a disconnection within a users normal environment and how their emotions/body

react. The main problem we see is a lack in proactively recognizing life stages, risk factors and creating participation where there is a disconnection of Mental health services/products and the whole cycle of health when experiencing daily life. For these reasons providing therapy as well as monitoring actively throughout a users health journey can provide with better tailored therapy for users and we can correctly identify the downfall of a user and apply techniques to hopefully mitigate.

4.0 Conclusion

Mental Health is becoming one of the biggest illnesses in the world with current lifestyles and life pressures. This has resulted in many different views on how we can optimize our mental health to be our best self, as currently there is a big focus on our general wellbeing with many apps and plans to help live a healthy life. We also see a focus on rehabilitation and biological factors, like medication, when users are at their worst state, to help them gain their health back. User behaviour is also vital to monitor and can be used to determine what stage a user is in and how to bring them back to health. Exploring and focusing on all our senses will affect a user on a deeper level. This was further explored in neuro, haptic and body research which showed areas which we feel most pain and how feeling different sensations can have positive effects on health. Memory was also found to be important because

users are prone to be forgetful or remember things in different ways. These topics were all found through my primary research, exploring in detail the user's behaviours and traits and how they interact with the world, discovering the importance of the environment and having an adaptable approach to health. The current disconnection within the system between the social side of health is also important and we need to create more acceptance for health and how together we can create positive change. Findings from research shows that we can't just look at health as either well or severely depressed, we need to look actively at health and when a user shows signs their health is deteriorating, we can create a tailored approach for them. Connecting this process will have great potential and lead to better monitoring and creating more opportunities to apply techniques to help users better their health.

Research Participants

Jamie Norman Hicks

Ross Young

Chris McNally

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“Everything that matters in living systems - what makes the difference between something living or not living - is motion, and motion is ultimately the result of shape transformation

Nathalie Katsonis , Harnessing the power of shape - shifting polymers
2018



