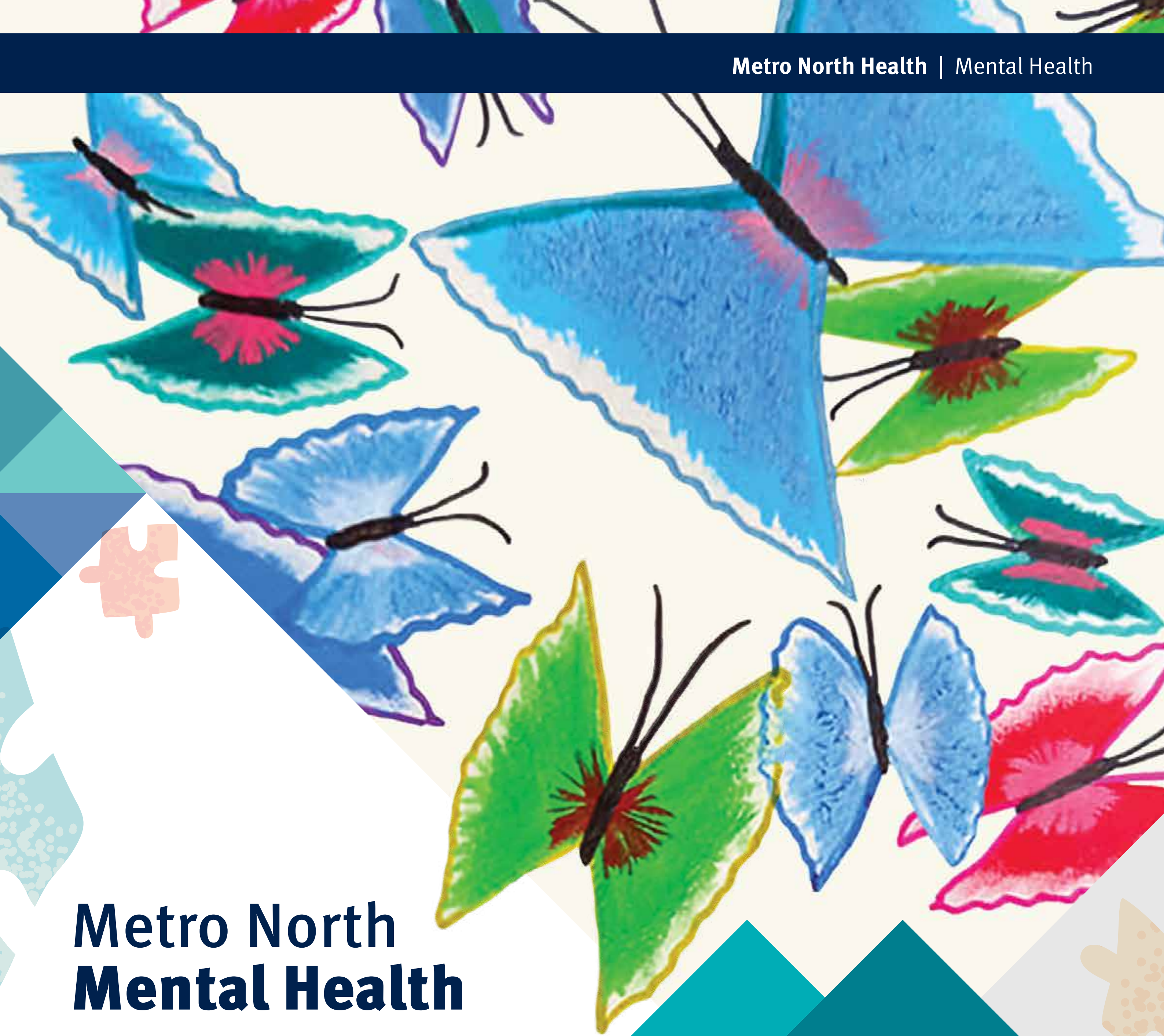

Metro North
Mental Health

Annual Research Review

2021

Metro North Health

Queensland Government

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Foreword by Dr Kathryn Turner

Welcome to the 2021 edition of the Metro North Mental Health (including Alcohol and Drug Services) annual research review. This review is an opportunity to share and celebrate the many and varied research and evaluation efforts undertaken over the past year. In particular, I applaud the efforts of our clinicians and researchers in their commitment to pursuing knew knowledge and evidence that contributes to the continuous improvement of our services and the ways we care for consumers and clients across the region.

Research, evaluation, and implementation are critical aspects of a well-functioning health system and are central to the delivery of safe, efficient, and effective care. Best practice approaches to caring for people experiencing severe, complex or crisis mental health and/or alcohol and drug issues requires constant attention to the evolving evidence-base for assessment, diagnosis, and treatment options. Research and evaluation informs the development of clinical care pathways, service models and the effectiveness of specific treatments. The outcomes from this work provides essential information about what works, for whom and whether approaches are working in the ways in which they are intended.

The work presented in the 2021 Metro North Mental Health Review provides a snapshot of the diverse and complex work undertaken across the Directorate.
This work was again undertaken under the impact of COVID-19 which for mental health and our alcohol and drug services has been a period of significant increase in demand for support and treatment unlike any we have seen in recent history. Despite this our team has excelled, with more than $12 million awarded in new grants and close to 100 peer reviewed publications and presentations for the year. Particular highlights include: an NHMRC grant that will lead to more culturally sensitive and effective communication between our clinical staff and consumers from Aboriginal and Torres Strait Islander backgrounds and the wonderful success of our ADS team, who had 16 papers and posters accepted to the conference of the Asia Pacific leading multi-disciplinary organisation for professionals involved in the alcohol and other drug field, the Australasian Professional Society on Alcohol and other Drugs (APSAD) conference 2021. Our Queensland Eating Disorders Service's extremely successful Masterclass on Eating Disorders, attended by 200 dietitians from across Australia is another significant highlight.

I would like to congratulate all our staff who undertook further education this year and acknowledge the commitment and effort that this involves.

The 2021 outcomes are outstanding, and I am proud to work alongside this dedicated workforce.

I am pleased to present you with the 2021 Metro North Mental Health Research Review.

Dr Kathryn Turner
Executive Director
Metro North Mental Health Service

About Metro North Mental Health

Metro North Mental Health (MNMH), inclusive of Alcohol and Drug Services, is situated within the larger Metro North Hospital and Health Services which delivers responsive, integrated, and connected care to over one million people, in an area stretching from the Brisbane River to north of Kilcoy. Metro North's focus on clinical excellence, and strong commitment to clinical research, education, and training, ensures that we continue delivering cutting-edge, evidence-based, cost-effective health care. Due to the scale of Metro North Health Service, there are numerous opportunities for staff to be involved in research and development activities that benefit our consumers as well as making MNMH an exciting and rewarding place to work.

MNMH commenced as a Clinical Directorate with a single point of accountability and budget in July of 2014. In 2021, MNMH employs upwards of 1,600 full time or equivalent staff. MNMH provides services for people with severe and complex mental health needs across the life span including perinatal, child and adolescent, adult, and older persons. We provide several specialist services including consultation liaison, forensic mental health, alcohol and drug services, eating disorders, community mental health and an inner-city homeless team. The service supports the recovery of people with mental illness through the provision of recovery focused services for consumers and carers in collaboration with primary and private health providers and our non-government partners. The service is a leader in clinical care, education, and research. Training for all mental health disciplines is a priority. There are joint allied health, nursing, and medical appointments and close links with multiple universities and specialist medical and nursing colleges. All five public hospitals – Royal Brisbane and Women's Hospital (RBWH), The Prince Charles Hospital (TPCH), Caboolture Hospital, Redcliffe Hospital, and Kilcoy Hospital – provide emergency response assessment for crisis situations and are linked to specialist mental health and alcohol and other drugs services for assessment and care. Dedicated acute inpatient services are at the RBWH, TPCH and Caboolture Hospital. Community services are delivered from facilities located in Brisbane City, Fortitude Valley, Herston, Nundah, Chermside, Strathpine, Caboolture, and Redcliffe with outreach services to Kilcoy.

MNMH is also the host site to a range of services provided to a state-wide catchment for both mental health and alcohol and other drug services. The Alcohol and Drug Service (ADS) works under a harm minimisation model to help clients stop using, reduce use or to use more safely by providing trauma informed, evidence-based treatments including opioid maintenance, substance withdrawal management, and counselling at several multidisciplinary clinics for clients with alcohol and drug dependence. The Needle and Syringe program is helping to stop the spread of HIV and Hepatitis C among drug users. Further, Adis 24/7 Alcohol and Drug Support operates a 24-hour, 7 day a week confidential support service for people with alcohol and drug concerns in Queensland, as well as their loved ones and health professionals. ADS also works with the acute hospitals to provide early diagnosis of patients with substance use disorders, prevent complications, reduce length of stay, facilitate effective discharge planning/ community aftercare, and avoid re-admissions. Queensland-wide consultation/ liaison, information, education, training, and research services are also provided. MNMH eating disorder service, the Queensland Eating Disorder Service (QuEDS) provides flexible care options for people with eating disorders across Queensland. The multi-disciplinary team uses a "step-up step-down" model to delivers a range of assessment, diagnosis, and treatment services including an 8-week intensive Day Program, individual outpatient treatment, a weekly Specialist Consultation Clinic, and inpatient care. The Queensland Forensic Mental Health Service (QFMHS) co-ordinates a large multifaceted, state-wide forensic mental health service. Forensic mental health services provide support to a range of people experiencing mental illness, including people being treated under Forensic or Treatment Support Orders and people in contact or who are at risk of contact with the criminal justice system. QFMHS ensures consistency of standards across the individual services on a statewide basis, coordinating safety and quality activities, development, and oversight of the Forensic Services model of service, training and development, clinical leadership, and service planning and development. QFMHS acts as a Queensland State departmental and interdepartmental liaison.

MNMH services are actively involved in research, seeking to build evidence base and constantly improve our practice, ensuring the quality of care provided to consumers.

A message from Prof James Scott and A/Prof Kylie Burke

Prof James Scott
Director of Research;
Director of Early Psychosis Team
Metro North Mental Health Service

A/Prof Kylie Burke
Principal Research Fellow
Metro North Mental Health Service

2021 was another year in which mental health and alcohol and drug service clinicians were required to step up, pivot, and endure the many demands, restrictions, and complexities of providing care for people experiencing severe mental illness and/or substance use issues in the context of the ongoing COVID-19 pandemic. Despite this, research and evaluation activities continued to thrive across the service, and we are pleased to highlight some of this work in the Metro North Mental Health (including alcohol and other drug services) Research Review.

2021 brought a number of changes to our Directorate and the way we support research and evaluation as a service. We officially welcomed Dr Kathryn Turner to the role of Executive Director and look forward to working with her to bring a strong continuous improvement and learning focus to the delivery of evidence-based services and interventions. We also established a Research Team comprising representatives from across our core disciplines and service sites. The aim of the team is to continue to grow our culture of best practice clinical care framed by world class, innovative research. The research team has been busy working on the development of a Research Strategy which is scheduled for publication in 2022. The research strategy will align with the Metro North Research Strategy as well as key MNMH clinical and operational plans and will guide priorities for research and evaluation activities and strategies for supporting and building research capacity, including consumer engagement and involvement.

In this, our second year presenting the Annual Research Review, we have the pleasure of highlighting work from across the three major mental health services (The Prince Charles Hospital, Redcliffe and Caboolture Hospital and the Royal Brisbane and Women's Hospital), Alcohol and Drug Services and speciality services such as the Queensland Eating Disorders Service, Forensic Mental Health, Early Psychosis Team and Older Persons Teams. We have been very impressed with the breadth and scope of work being undertaken across the Directorate. The projects presented here highlight the commitment of clinicians to innovation and implementation of evidence-based practice and the critical role of partnership with stakeholders including consumers, funding bodies and community and university partners. The citations for all featured work (published or presented) are available in the Dissemination Activities section towards the end of the Review.

We would like to acknowledge the work of Erika Giebels, Research Assistant without whom there would be no Annual Research Review. Her professionalism and attention to detail, not to mention the many hours spent following up with people for content has resulted in a comprehensive overview of research for 2021.

Thank you also to all those who have contributed your time and writing to the stories. We are very proud to share the research space with you all.

Best wishes

James and Kylie

2021: Year in Review

$12,175,285.21
in awarded grants

70
Publications

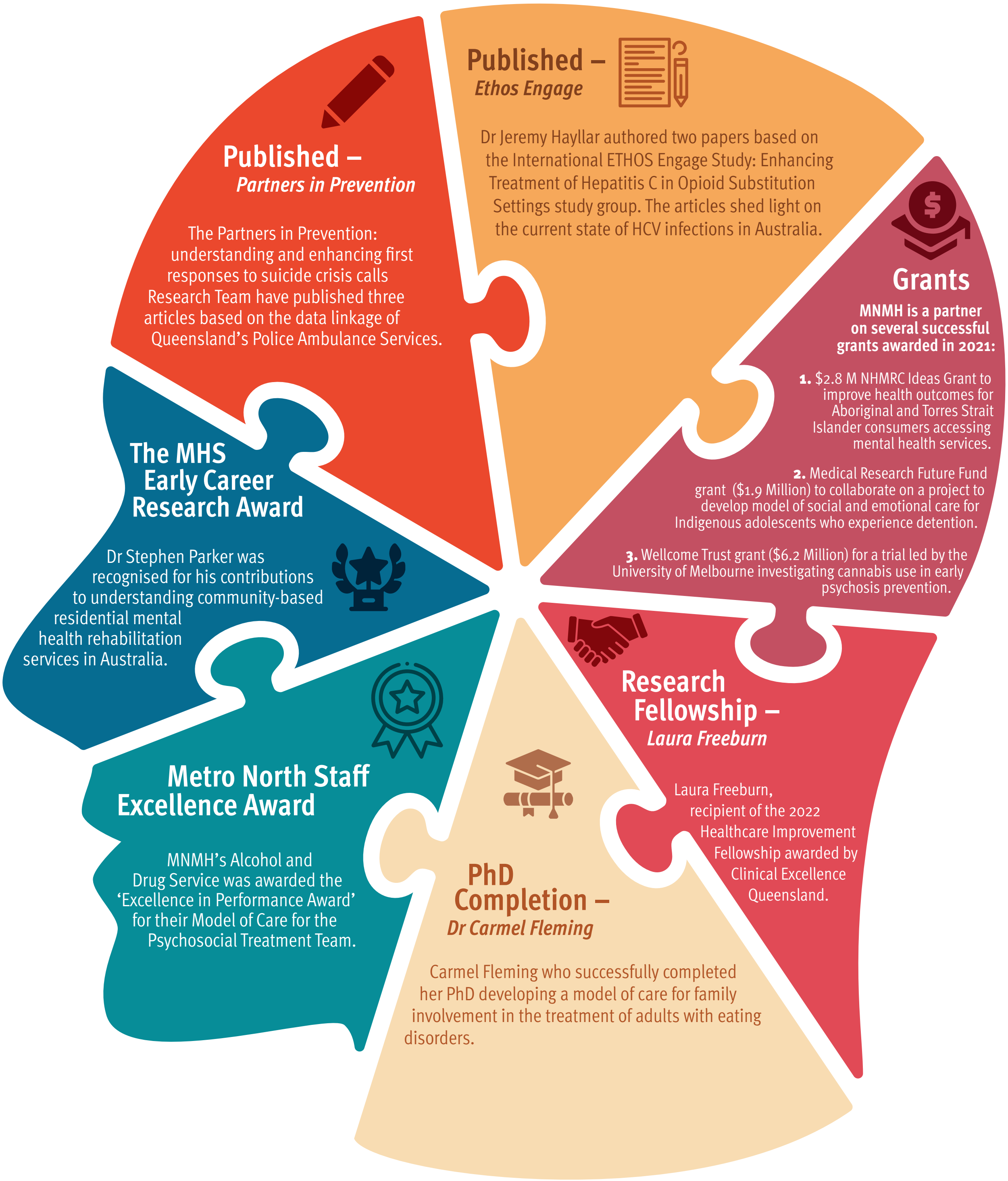
2
Poster presentations

34
Conference presentations

8
Invited speakers

2
Books & chapters

Highlights



Published – *Partners in Prevention*

The Partners in Prevention: understanding and enhancing first responses to suicide crisis calls Research Team have published three articles based on the data linkage of Queensland's Police Ambulance Services.

Published – *Ethos Engage*

Dr Jeremy Hayllar authored two papers based on the International ETHOS Engage Study: Enhancing Treatment of Hepatitis C in Opioid Substitution Settings study group. The articles shed light on the current state of HCV infections in Australia.

Grants

MNMH is a partner on several successful grants awarded in 2021:

1. $2.8 M NHMRC Ideas Grant to improve health outcomes for Aboriginal and Torres Strait Islander consumers accessing mental health services.
2. Medical Research Future Fund grant ($1.9 Million) to collaborate on a project to develop model of social and emotional care for Indigenous adolescents who experience detention.
3. Wellcome Trust grant ($6.2 Million) for a trial led by the University of Melbourne investigating cannabis use in early psychosis prevention.

The MHS Early Career Research Award

Dr Stephen Parker was recognised for his contributions to understanding community-based residential mental health rehabilitation services in Australia.

Research Fellowship – *Laura Freeburn*

Laura Freeburn, recipient of the 2022 Healthcare Improvement Fellowship awarded by Clinical Excellence Queensland.

Metro North Staff Excellence Award

MNMH's Alcohol and Drug Service was awarded the 'Excellence in Performance Award' for their Model of Care for the Psychosocial Treatment Team.

PhD Completion – *Dr Carmel Fleming*

Carmel Fleming who successfully completed her PhD developing a model of care for family involvement in the treatment of adults with eating disorders.

Suicide Prevention

Introduction by Danielle Alchin (APIRES Project Lead).

In 2020 alone there were 791 suspected suicide deaths in Queensland (Leske et al., 2021). Suicide has a profound impact on families, community, and society. In recent years COVID-19 has further impacted mental health, employment, and social connectedness, all of which can affect suicide mortality (Leske et al., 2020). Critically, data shows us that approximately 25% of consumers have had contact with Queensland Health services in the month prior to their death with a review of data for 2015-2016 finding that one in five had had contact with a Mental Health Alcohol and Other Drug service in that timeframe. Further, there are high rates of mental health conditions and/or diagnosed substance use among those who died by suspected suicide (Australian Institute for Suicide Research and Prevention). As with many health issues, Aboriginal and Torres Strait Islander people continued to have high suspected suicide rates with the age standardised rate at 27.9 per 100,000 (compared to non-indigenous of 14.3 per 100,000). Thus, it is imperative that MNMH continues to work with individuals and communities to identify, prevent, and provide treatment for individuals who are at risk for or have engaged in suicidal behaviours.

The causes of suicide are multifaceted and complex making the task of identifying, preventing, and responding to this significant social issue challenging. However, it is recognised worldwide that suicides of people engaged with healthcare are preventable if individuals, community, government, and non-government sectors work together.

Over the past decade, there has been a paradigm shift in the approach to suicide prevention. There has been recognition that many people who die by suicide do not necessarily have a severe or enduring mental illness, that most of those who die by suicide were not identified as high risk in recent contacts, and that suicide specific interventions (such as safety planning, brief interventions, and non-clinical aftercare) are essential components of a pathway of care. However, those who present with severe mental illness and/or with high lethality attempts, are still experiencing very high rates of suicide. It is recognised that systems approaches to suicide prevention can address these challenging issues.

The Zero Suicide Framework (ZSF; Covington, 2011) is an example of a systems approach to suicide prevention in a healthcare setting. It provides an opportunity to address these issues through the provision of both individualised risk identification and treatment, including strong clinical focus on diagnosis, formulation, treatment of mental illness, and co-occurring disorders, together with more population-based approaches all supported by a standardised pathway of care. The ZSF has shown great promise when implemented with high fidelity. Layman et al. (2021) demonstrated an association between a clinician's use of the ZSF organisational best practices and lower suicidal behaviours of consumers under their care. In Queensland, the Gold Coast demonstrated a 35 per cent reduction in re-presentations for suicide attempts when someone is placed on a Suicide Prevention Pathway as part of that systems approach, including a data driven continuous improvement and evaluation process (Stapelberg et al., 2021; Turner et al., 2021).

At Metro North Mental Health the prevention of suicide is an ongoing priority. Our Redcliffe-Caboolture team has been a member of Queensland's Zero Suicide in Healthcare Multi-Site Collaborative since 2018. During this time, they have undertaken a survey of staff to explore knowledge and benchmark training within the service. Dedicated staff rolled out professional training to clinicians, training approximately 500 clinicians between 2018 and 2021.

During 2021, the other services and sites that make up the Mental Health Directorate also joined the Queensland Collaborative and embarked on an organisation-wide continuous improvement process designed to embed and extend the Zero Suicide Framework to encompass self harm and overdose prevention across our mental health and alcohol and drug services. The approach, titled ASPIRES: Metro North Mental Health Suicide, Self-Harm and Overdose Prevention plan (ASPIRES) aims to build on ZSF and includes principles of Restorative Just and Learning Culture, trauma informed care and recovery-oriented practice. During 2022, an implementation and evaluation plan will be developed and launched across the service.

Research and evaluation are critical components of a continuous improvement approach and enables clinicians, service leaders and policy makers to better understand the factors associated with risk and protection for suicide and for whom those factors apply. Research and evaluation also supports clinicians and services to develop and implement evidence-based preventative, early intervention and treatment approaches that are tailored, effective and account for the needs of all consumers, including Aboriginal and Torres Strait Islander peoples, males, older persons, LGBTIQ+ people and those with co-occurring disorders.

During 2021, MNMH's suicide prevention research was primarily led by our Queensland Forensic Mental Health Service in partnership with representatives from Queensland Centre for Mental Health Research, Queensland Police Service (QPS) and Queensland Ambulance Service (QAS), Queensland Mental Health Commission, Brisbane North PHN, Queensland Alliance for Mental Health, and Roses in the Ocean. This collaboration has embarked on an ambitious program of research designed to better understand suicide risk and prevention through the lens of first responders: police and ambulance. The 2021 research report provides an overview of three of the first projects undertaken within this important program of work. The section also reports on a project designed to understand and address suicide within the construction industry. This study was undertaken by Metro North's Forensic Mental Health Service in partnership with the Queensland Centre for Mental Health Research and CQUniversity.

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Partners in Prevention: Understanding and Enhancing First Responses to Suicide Crisis Situations

Police and paramedics are frequently called upon to respond to individuals experiencing suicide crises. Despite this, there has been a lack of evidence about suicide-related calls to emergency services that can be used to inform responses. The Queensland Health, Suicide Prevention in Health Services Initiatives funded a program of research, from 2017-2020 to address research gaps in this area to inform systems enhancements. The program was led by Queensland Forensic Mental Health Service in partnership with representatives from Queensland Centre for Mental Health Research, Queensland Police Service (QPS) and Queensland Ambulance Service (QAS), Queensland Mental Health Commission, Brisbane North PHN, Queensland Alliance for Mental Health, and Roses in the Ocean.

Examining the Use of Police and Ambulance Data in Suicide Research: *A Systematic Scoping Review of Data Linkage Studies.*

Systematic Review

Examining the Use of Police and Ambulance Data in Suicide Research

A Systematic Scoping Review of Data Linkage Studies

Carla Meurk[1,2], Lisa Wittenhagen[1,3], Megan L. Steele[1], Laura Ferris[4], Bronwen Edwards[5], Emma Bosley[6,7], and Ed Heffernan[1,2,3]

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[3]Queensland Forensic Mental Health Service, Queensland Health, Brisbane, QLD, Australia
[4]School of Psychology, The University of Queensland, Brisbane, QLD, Australia
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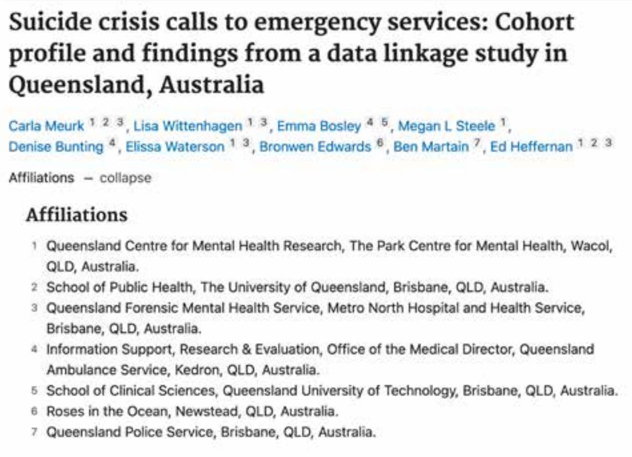
[6]Queensland Ambulance Service, Kedron, QLD, Australia
[7]School of Clinical Sciences, Queensland University of Technology, Brisbane, QLD, Australia

To begin, the project team completed and published a scoping review, which aimed to examine previous data linkage research combining police and ambulance data relating to suicide behaviours to identify research gaps. The review found only 8 studies that used either police (6) or ambulance data (2) and no studies that incorporated both. Most studies in this area described suicide related contact with police or ambulance services, while a few focused-on associations between suicidal behaviours and violence, victimisation, and criminality. The authors identified a need for further studies that link data from police and ambulance databases, as well as the need to further examine the way that suicidal behaviours are defined and measured across diverse agencies.

Suicide crisis calls to emergency services: *Cohort profile and findings from a data linkage study in Queensland, Australia.*



Suicide crisis calls to emergency services: Cohort profile and findings from a data linkage study in Queensland, Australia

Carla Meurk[1 2 3], Lisa Wittenhagen[1 3], Emma Bosley[4 5], Megan L Steele[1], Denise Bunting[4], Elissa Waterson[1 3], Bronwen Edwards[6], Ben Martain[7], Ed Heffernan[1 2 3]

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With the findings from their scoping review in mind, the team developed a data linkage study to fill the research gap. Using 2014 to 2017 data from the QPS and QAS, the aim was to describe the characteristics and health pathways of people who were the subject of suicide related calls and present some preliminary findings on service demand.

The dataset combines data from QPS and QAS on 219,164 suicide related calls between 2014 and 2017. These data were linked to health records for 70,893 creating a population wide data set for all of Queensland. This is a unique situation that allows the authors to look at the state of suicidality across an entire Australian jurisdiction with a confidence that they have captured the experience of most people who were subject to suicide related calls during the study period.

Between 2014 and 2017, suicide related calls increased by approximately 28% for calls to police and 23% to ambulance services with services receiving a combined 209 calls per day, increasing each year. This increase in demand is suggestive of a lack of preventative services which result in the use of QPS and QAS as an intervention. Of the individuals in the data set, 96% had contact with an emergency department. A strength of this study was that it was designed in consultation with people who have lived and living experience of suicidality and suicide. Furthermore, the outcomes of the study demonstrate the extent of need within the community and provide a basis for training and service redesign.

Moving forward, the authors aim to incorporate data from 2017 to 2020 to allow for longitudinal analysis of the PiP dataset. Linkage with large data assets such as the Medicare Benefits Schedule, Pharmaceutical Benefits Scheme and social care datasets extend understanding of suicidality and suicide related calls to emergency services in Queensland.

Partners in Prevention – Phase 2 Findings. *The initial phase of Partners in Prevention project identified the diversity of individuals who experience suicide crisis. In phase 2 of this project, the team sought to further understanding of the needs of specific sub-groups, including Aboriginal and/or Torres Strait Islander people, women who experience crisis during the pregnant or postpartum periods, and military and veterans' populations. The first of these investigations, addressing pregnant or postpartum women, was published in 2021.*

Suicidal behaviours in the peripartum period: a systematic scoping review of data linkage studies

Carla Meurk [1 2], Lisa Wittenhagen [3 4], Jayne Lucke [5], Ruth Barker [6 7], Susan Roberts [8], Katherine Moss [3 5], Elissa Waterson [3 4], Ed Heffernan [3 5 4]

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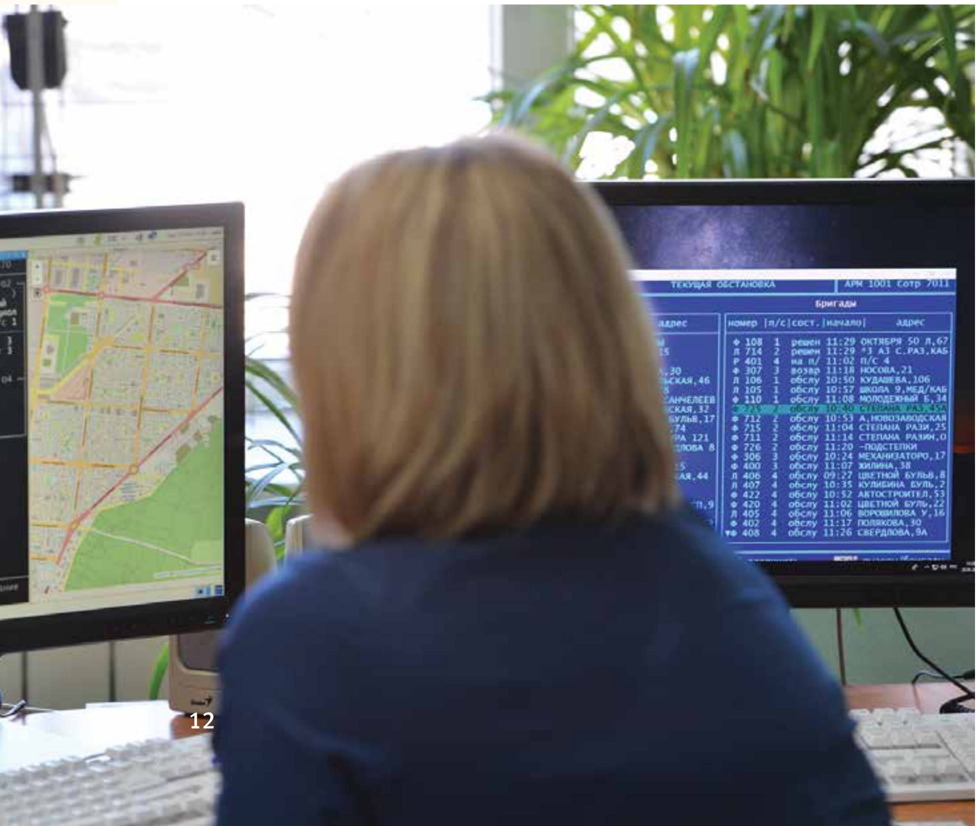
Suicidal behaviours in the peripartum period: *a systematic scoping review of data linkage studies.*

The initial Partners in Prevention data linkage study highlighted the high numbers of women who experience crisis that results in a police or paramedic contact, during or around the time of pregnancy. Building on the Partners in Prevention partnership, and in collaboration with perinatal clinicians, Queensland Forensic Mental Health Service and Queensland Centre for Mental Health Research conducted a scoping review of studies to further examine existing knowledge and identify gaps and future research directions in this area.

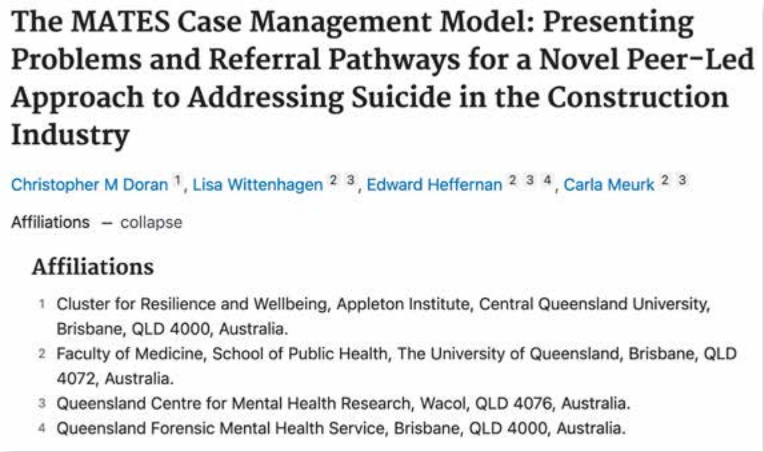
The review identified 18 papers which examined suicidal behaviours and deaths of women in the peripartum period. A main finding was that there is currently a lack of standardisation of constructs used in this area, including constructs relating to interpersonal relationships and intimate partner violence. Despite this limitation, the review indicates that there are high rates of contact by women with health services before a suicide death. This contact may not have been with a mental health professional, but instead with emergency departments or in primary care facilities. Informed by these critical insights, the team is undertaking further analysis of the data from the Partners in Prevention study, specifically focused on women who were pregnant during or around the time of a suicide related contact with police or paramedics.



The MATES Case Management Model: Presenting Problems and Referral Pathways for a Novel Peer-Led Approach to Addressing Suicide in the Construction Industry

MATES in Construction is a suicide prevention charity that developed and delivers a multimodal, non-clinical, industry led, peer-based workplace suicide prevention and early intervention program. Within this program, case managers may be engaged to help individuals understand the issues they are experiencing and develop a plan to address these problems by finding the right services to support them.

A research team, including A/Prof Ed Heffernan from Metro North's Forensic Mental Health Service, in partnership with Queensland Centre for Mental Health Research and CQUniversity evaluated the MATES Case Management program. Using the MATES Case Management Database, the demand for the service, in addition to demographics, occupational profiles, presenting issues, referral pathways and the perceived benefits of case management among the program users were all evaluated.



The MATES Case Management Model: Presenting Problems and Referral Pathways for a Novel Peer-Led Approach to Addressing Suicide in the Construction Industry

Christopher M Doran [1], Lisa Wittenhagen [2, 3], Edward Heffernan [2, 3, 4], Carla Meurk [2, 3]

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The MATES Case Management Database included information from 3,759 people who had used the service between 2010 and 2018. The demand for the service increased by 265% from 2010 to 2018. Most of the people accessing services were males with an average age of 39 years, who presented with concerns about their relationship (38%), work (27%), and family (22%), as well as suicide-related concerns (ideation (11%), intervention (2%), and bereavement (0.5%)). Case managers also conducted an exit survey with 14 clients to evaluate the benefit of the case management program. Most felt that they were actively involved in the process and their medical, emotional, mental well-being, and spiritual needs were met. These results show that the case management model is in demand and, although data are needed to establish its efficacy, the program was deemed beneficial by those who have already participated.

Forensic Mental Health

A/Prof Ed Heffernan
Director
Queensland Forensic
Mental Health Service

Dr Elissa Waterson
Operations Director
Queensland Forensic
Mental Health Service

Introduction by A/Prof Ed Heffernan (Director, Queensland Forensic Mental Health Service); and Dr Elissa Waterson (Operations Director, Queensland Forensic Mental Health Service).

Research in clinical settings can be challenging at the best of times, but with partnerships between the Queensland Forensic Mental Health Service (QFMHS) and the university sector, forensic mental health research in Queensland has continued to grow in 2021.

The collaborative approach between clinician researchers and academic researchers benefits both areas as it helps to identify research priorities that have meaning and value for forensic mental health system stakeholders, including those with lived and living experience. The combined efforts serve to increase our evidence-base for the specialty area of forensic mental health and to translate research findings into practice.

Forensic Mental Health Services work at the interface between multiple systems and sectors, including mental health, police, justice, corrections, and courts. In this way, we recognise that cross sectoral partnerships are crucial to achieving the best outcomes both in our clinical service provision and in our research projects.

This year QFMHS and Queensland Centre for Mental Health Research (QCMHR) have led a National Mental Health Commission funded, multi-stakeholder, national consultation about national principles for forensic mental health. We heard from individuals, family members and carers with lived experience, policy makers, and people who work in health, police, justice, and corrective services to find out what is most important in forensic mental health, why these things are most important and what the best set of principles should include. We are proud to report some of the results from those consultation here.

Further in 2021, QFMHS and QCMHR supervised seven PhD students, including Dr Katherine Moss, who is featured in this review. In the next year we will explore opportunities for students from Griffith University to work with clinician advisors from the QFMHS to continue to strengthen our research agenda and to nurture students with an interest in forensic mental health.

In this section you will read further about the work done by QFMHS on the National Principles for forensic mental health in Australia. We also present some of the 2021 publications from our staff various topics in the forensic mental health arena, including the journeys of Forensic Order patients, and the substance use and health seeking behaviours in young people involved in the justice system.

National principles for forensic mental health in Australia: a national consultation

Australia's *National Statement of Principles for Forensic Mental Health* has not been reviewed or updated since its establishment in 2006. A lot has changed in this time: the nation has endorsed the *International Convention on the Rights of Persons with Disability* among several other major international agreements; new standards directly relating to service delivery in the field have been developed; and recognition and understanding of the importance of First Nations culture and of co-designing services with those with lived experience has grown.

With the aim of exploring and articulating current awareness, experiences, and views in relation to the 2006 *National Statement,* we conducted a national consultation with the multiple system stakeholders. This consultation builds on the findings of our 2019 national audit of high-level policy documents relevant to improving the mental health of justice-involved people, which identified gaps, inconsistencies, and opportunities for reform. This consultation was also the first-ever national process in forensic mental health to include the voices of those with lived experience and consider them on an equal basis with the views of service providers.

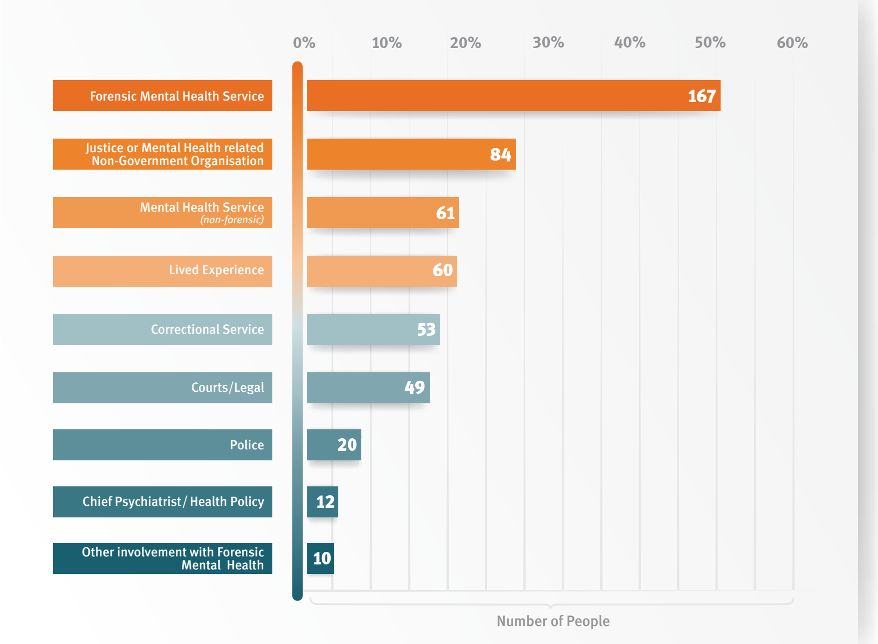
With funding support from the National Mental Health Commission, the project involves a partnership of Queensland Forensic Mental Health Service, Queensland Centre for Mental Health Research, University of Melbourne, Mental Health Matters 2 Inc., and Murdoch Children's Research Institute.

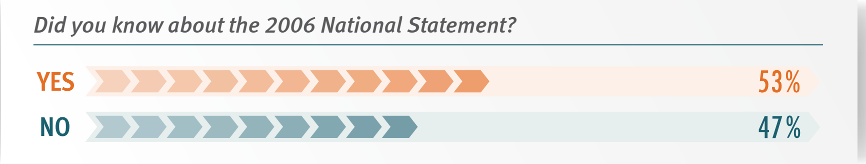
The consultation was conducted over a 12-month period through an online survey (n=136) and a series of fifteen workshops (n=195). The survey was 7-10 minutes in length and consisted of short-response and rating questions. The workshops were two hours in length and consisted of group discussion and activities on Slido, an interactive online presentation platform that invites participant input via polls, question and answer, word clouds, and other engaging formats. Separate workshops were conducted with each stakeholder group. Workshops conducted with people with lived experience were facilitated by Mental Health Matters 2, a specialist forensic mental health lived experience advocacy organisation, in order to facilitate their safe and authentic engagement. The mixed data set is currently being analysed quantitatively using descriptive statistics, and qualitatively using thematic analysis on NVivo software.

Participants were from all states and territories of Australia and had varied involvement with forensic mental health *(see Figure 1).*

Overall, there was consensus that national principles for forensic mental health are needed. However, only half the participants were aware of the 2006 *National Statement*. In particular, less than half of people with lived experience knew about the 2006 *National Statement*.

Figure 1: *Participant groups by background (more than one selection was allowed)*





The findings from this national consultation offer a basis for co-designing a set of contemporary national forensic mental health principles, as well as system level measures to evaluate its implementation. As a whole, this work has the potential to support consistency and accountability of practice in forensic mental health in Australia.

Figure 2: *Most frequent answers to workshop question "What do you think are the most important ideas to include in national principles for forensic mental health?"*

The experience of a young researcher: Dr Bonnie Cheng, Research Assistant on the National Principles for Forensic Mental Health project

Dr Bonnie Cheng
Research Assistant
Queensland Forensic
Mental Health Service

As a speech pathologist by background and having recently completed my PhD in the area of clinical communication, working in forensic mental health was new to me. I came into my role as a research assistant at QFMHS because I was eager to apply and extend my research skills in contexts beyond the field of health and the setting of academia. I feel lucky to have had the chance to contribute to the National Principles for Forensic Mental Health project. It was one that challenged me in new ways: instead of running a program of research over several years, I would be analysing and reporting on the findings of a national survey and series of workshops in three months; instead of immersing myself in a patient's experience of recovery, I would be drawing meaning from the perspectives of a police officer, a chief psychiatrist, a person whose loved one was in prison; instead of manoeuvring the processes of human research ethical clearance, I would be giving thought to the authorising environment needed to turn research into reality. Contributing to this project also deepened my appreciation for collaboration, as having a sounding board proved to be as useful for reinforcing an impression as it was for reshaping it, and the effort to integrate disparate preferences led to not only a more prudent product but a strengthened sense of ownership as a team. Now, it seems like this is the area I didn't know I wanted to work in. My next role will be at Corrective Services NSW where I hope to continue to be exposed to and learn from different ways of thinking and doing.

Substance use and help-seeking among justice-involved young people in Queensland and Western Australia: A cross-sectional survey of 14–17 year olds

This study investigated the use of substances and help seeking behaviours among young people involved in the justice system with two aims. Firstly, to describe the current state of substance use and correlates of risky substance use behaviours and secondly, to examine the levels of engagement with mental health and alcohol and drug health services in order to inform and improve service provision.

Young people aged 14 to 17 from WA and QLD who had previous or current contact with the justice system were recruited to complete a survey (n= 465). They were asked about sociodemographic; health factors; lifetime and frequency of use of alcohol, tobacco, and other drugs; and use of health services for substance use and mental health reasons. Results showed that more than 80% of respondents had used alcohol, tobacco, or other drugs (89%, 86%, and 81% respectively). Cannabis was the most used drug, followed by ecstasy and amphetamine. Furthermore, only 24 % had received treatment at an alcohol and drug service in the past year and 30% had seen a health professional regarding emotional/behavioural problems. They also identified that males and Aboriginal and Torres Strait Islander young people were less likely to seek help.

The authors concluded that there is a need for tailored, comprehensive, and co-ordinated trauma informed and culturally safe alcohol and drug services for young people involved in the justice system, whether in detention or in the community.

Drug and Alcohol REVIEW
APSAD
Drug and Alcohol Review (May 2021), 40, 617–626
DOI: 10.1111/dar.13238

Substance use and help-seeking among justice-involved young people in Queensland and Western Australia: A cross-sectional survey of 14–17-year-olds

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Abstract

Introduction. *This study investigated substance use and help-seeking among justice-involved young people to inform and improve service provision during and after contact with the justice system.* ***Methods.*** *Young people (14–17 years) in the community with current or prior contact with the justice system were recruited in Queensland and Western Australia, Australia using purposive sampling between 2016 and 2018. A cross-sectional survey was delivered by computer-assisted telephone interview. Information was collected on sociodemographic and health factors; lifetime and frequency of use of alcohol, tobacco and other drugs; and use of health services related to substance use and mental health.* ***Results.*** *Of the 465 justice-involved young people surveyed, most had used alcohol (89%), tobacco (86%) or other drugs (81%). Of the latter, cannabis use was most prevalent (79%), followed by ecstasy (26%) and amphetamine (22%). Young people engaging in higher risk drug use (daily use, injecting use) were more likely to also have an alcohol use disorder, be disengaged from education, unemployed, have attempted suicide and experienced incarceration. Of the cohort, 24% had received treatment at an alcohol and drug service in the past year and 30% had seen a health professional about emotional/behavioural problems. Males and Aboriginal and Torres Strait Islander young people were less likely to have sought professional help.* ***Conclusion.*** *The high levels of substance use and disproportionate levels of help-seeking observed in this study illustrate the importance of delivering tailored, comprehensive and coordinated trauma-informed and culturally safe alcohol and drug services to justice-involved young people.* [Steele ML, Meurk C, Schess J, Yap L, Jones J, Harden S, Davison S, Butler T, Heffernan E. Substance use and help-seeking among justice-involved young people in Queensland and Western Australia: A cross-sectional survey of 14–17-year-olds. *Drug Alcohol Rev* 2021;40:617–626]

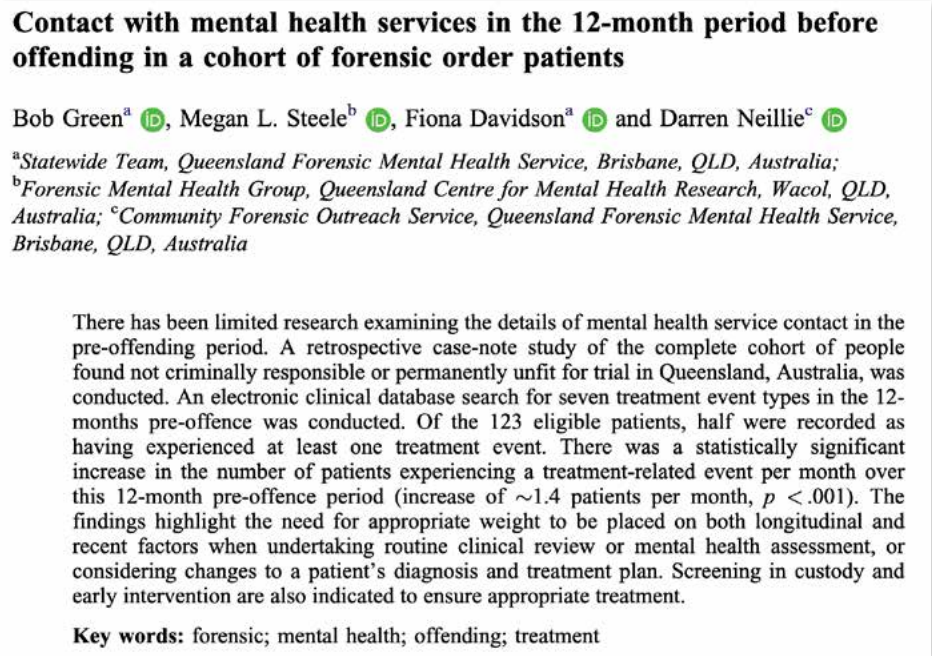
Key words: substance abuse, alcohol, tobacco, juvenile delinquency, health services.

Contact with mental health services in the 12-month period before offending in a cohort of forensic order patients

Bob Green, Fiona Davidson, and Darren Neillie of Queensland Forensic Mental Health Service saw the health care data routinely collected on individuals who have offended as a source of information that could shed light on the time preceding a person committing an offence. Using these resources, they conducted a retrospective, case-note cohort study of people not found criminally responsible or permanently unfit for trial by the Mental Health Court, Queensland.

The study identified 123 individuals through the Consumer Integrated Mental Health and Addiction database (CIMHA; Queensland's statewide electronic mental health system) who were placed on a Forensic Order in 2015. The team looked at data relating to treatment events which had occurred in the 12 months prior to the offence for which they were placed on a Forensic Order. The treatments events that were selected were potential indicators of discontinuity of care or an event which might have negatively impacted care (e.g., involuntary care ending, mental health inpatient discharge, primary diagnosis category change, public mental health service care episode ended, etc.). They found that 40 % of patients had not had contact with a mental health service in the 12 months preceding their offence. Of the 53.7% who were identified as having experienced a treatment event, these events were most commonly a mental health unit discharge, or an examination order being issued. There was also a trend identified towards patients experiencing a treatment event close to the time of offending.

The project highlighted the significant proportion of patients on forensic orders who had experienced one or more treatment-related events in the 12 months before offending. It also draws attention to some contextual factors that might have an impact on a patient's journey which results in them committing an offence. Additionally, the fact that a large proportion of people with a Forensic Order had never had contact with a mental health service may be indicative of a lack of early intervention in the criminal justice setting.



Contact with mental health services in the 12-month period before offending in a cohort of forensic order patients

Bob Green[a], Megan L. Steele[b], Fiona Davidson[a] and Darren Neillie[c]

[a]Statewide Team, Queensland Forensic Mental Health Service, Brisbane, QLD, Australia; [b]Forensic Mental Health Group, Queensland Centre for Mental Health Research, Wacol, QLD, Australia; [c]Community Forensic Outreach Service, Queensland Forensic Mental Health Service, Brisbane, QLD, Australia

There has been limited research examining the details of mental health service contact in the pre-offending period. A retrospective case-note study of the complete cohort of people found not criminally responsible or permanently unfit for trial in Queensland, Australia, was conducted. An electronic clinical database search for seven treatment event types in the 12-months pre-offence was conducted. Of the 123 eligible patients, half were recorded as having experienced at least one treatment event. There was a statistically significant increase in the number of patients experiencing a treatment-related event per month over this 12-month pre-offence period (increase of ~1.4 patients per month, $p < .001$). The findings highlight the need for appropriate weight to be placed on both longitudinal and recent factors when undertaking routine clinical review or mental health assessment, or considering changes to a patient's diagnosis and treatment plan. Screening in custody and early intervention are also indicated to ensure appropriate treatment.

Key words: forensic; mental health; offending; treatment

Q&A with a Clinician Research: Dr Katherine Moss

Dr Katherine Moss
Forensic Psychiatrist
Queensland Forensic
Mental Health Service

Which areas of QFMHS do you work for currently?

I am a forensic psychiatrist working for the Queensland Forensic Mental Health Service (QFMHS). Within the QFMHS I provide expert risk assessments as part of my role with the Community Forensic Outreach Service as well as clinical leadership to the Indigenous Mental Health Intervention Program, clinical care to consumers at the Brisbane Women's Correctional Centre and more recently I have been involved in the development of a new liaison service between Queensland Health and the Parole Board Queensland.

Tell us about your current research activities:

I am currently completing my Doctor of Philosophy at The University of Queensland under the supervision of Associate Professor Ed Heffernan, Dr Carla Meurk and Dr Megan Steele. My project seeks to consider what measures of physical health and activity high secure units across Australia currently collect and what opportunities are currently available for individuals to access physical activity. The project also aims to use expert consensus to determine relevant key performance indicators (KPIs) for assessing the physical health and activity of individuals under inpatient forensic psychiatric care. The project will further consider the needs and gaps to managing the physical health and activity of forensic patients and provide recommendations for forensic services so that they are equipped to best meet the needs of individuals under inpatient forensic psychiatric care. I have published a review titled *"The physical health and activity of patients under forensic psychiatric care: A scoping review"* (2021). Read an overview of the review below. In addition, I have completed research into the use of compulsory community treatment orders in a culturally and linguistically diverse population, metabolic monitoring at rehabilitation facilities and suicidal behaviours in the peripartum period.

Where have you presented your research findings?

I presented my recent research findings at the Royal Australian and New Zealand College of Psychiatrist's (RANZCP) annual Congress in Sydney on 16th May 2022. The research highlights the challenges of collecting physical health data and providing opportunities for physical activity for patients under forensic mental health care.

In 2021 I presented at the International Association for Suicide Prevention (IASP) World Congress on suicidality among women in the first 1000 days of motherhood. The data was drawn from the Partners in Prevention study cohort, a unique population-wide study undertaken in Queensland of approximately 70,000 individuals who were the subject of a suicide related call to police or ambulance between 2014 and 2017. Suicidality among women in the first 1000 days of motherhood was interwoven with vulnerabilities including being younger, engaging in substance use, and being the victim of intimate partner violence.

In 2019 I presented at the RANZCP Congress in Cairns and the Equally Well Symposium in Melbourne. The presentation highlighted the high rates of overweight and obesity within a forensic population under mental health care and further outlined patient knowledge, attitudes, and preferences for physical activity.

What do you enjoy about being involved in research?

I am committed to providing evidence-based care that is person-centre and recovery focussed. I believe that research plays an essential role in assisting clinicians to develop and refine their clinical practice in an evolving landscape. My passion is for translational research, in particular to see evidence-based interventions undertaken in real life situations, with learnings reaching the clinicians who can implement change. I enjoy the challenges that research brings – from the writing of grant applications and ethics approvals through to data collection and final paper edits.

What advice would you have for other clinicians who are considering embarking on a research study?

If you have a passion to see clinical practice change or improvement then I would strongly recommend embarking on a research journey. Start with a simple question and see where it takes you. Research is definitely a marathon and not a sprint!

The Physical Health and Activity of Patients under Forensic Psychiatric Care: A Scoping Review

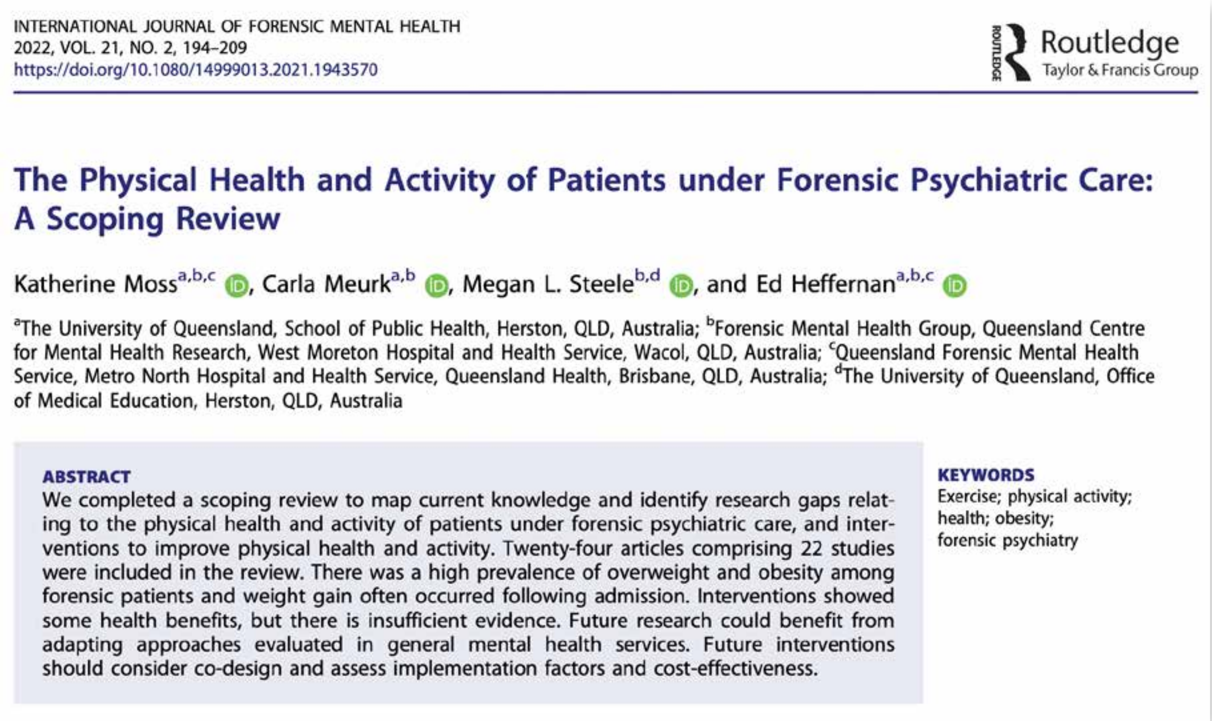
Within the literature, there is some concern about the physical health of people with severe mental illness, such as schizophrenia and other personality disorders. Generally, people with mental illness have higher rates of cardiovascular disease, shorter life expectancy, and more physical health problems. Further, literature suggests that physical inactivity and sedentary behaviour was more common in people with severe mental illness than healthy people.

Katherine's review of the literature in this area aimed to identify and map the current state of physical health and activity in patients who are detained under forensic psychiatric care. She also wanted to know about the interventions being used to improve physical health and the views and experiences of consumers regarding their physical health whilst in inpatient forensic care.

Within the 22 relevant studies identified, various physical health and activity concerns were reported. For example, 14 studies reported obesity rates between 30 and 80%, and seven studies reported weight gain in consumers under forensic psychiatric care. Six studies reported interventions for weight gain. These interventions had modest effects on weight reduction, however, the papers were generally of low quality and without control groups.

Patient perspectives were considered by seven studies. Participants reported that they were satisfied with the options made available to them and that they enjoyed physical activities. One study suggested that participants had changes in feelings towards well-being and safety after doing physical activity.

Katherine and her colleagues concluded that physical health outcomes and low physical activity levels in forensic psychiatry patients' needs further research attention, particularly in regards to lifestyle interventions for this vulnerable group.



INTERNATIONAL JOURNAL OF FORENSIC MENTAL HEALTH
2022, VOL. 21, NO. 2, 194–209
https://doi.org/10.1080/14999013.2021.1943570

Routledge
Taylor & Francis Group

The Physical Health and Activity of Patients under Forensic Psychiatric Care: A Scoping Review

Katherine Moss[a,b,c], Carla Meurk[a,b], Megan L. Steele[b,d], and Ed Heffernan[a,b,c]

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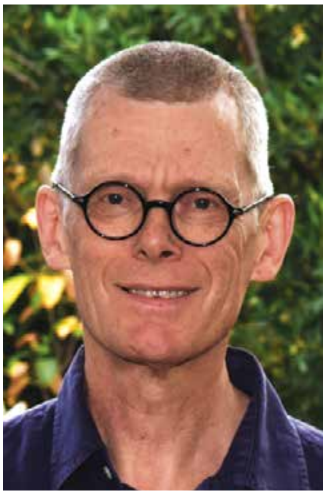
ABSTRACT
We completed a scoping review to map current knowledge and identify research gaps relating to the physical health and activity of patients under forensic psychiatric care, and interventions to improve physical health and activity. Twenty-four articles comprising 22 studies were included in the review. There was a high prevalence of overweight and obesity among forensic patients and weight gain often occurred following admission. Interventions showed some health benefits, but there is insufficient evidence. Future research could benefit from adapting approaches evaluated in general mental health services. Future interventions should consider co-design and assess implementation factors and cost-effectiveness.

KEYWORDS
Exercise; physical activity; health; obesity; forensic psychiatry

Alcohol and Drugs

Introduction by Dr Hollie Wilson (Director, Adis 24/7 Alcohol and Drug Support); Dr Jeremy Hayllar (Clinical Director Alcohol and Drug Services).

Dr Hollie Wilson
Director
ADIS 24/7
Alcohol and Drug Support Services



Dr Jeremy Hayllar
Clinical Director
Alcohol and Drug Support Services

Substance use disorders have significant impacts on the social, emotional, behavioural, and economic wellbeing of individuals, their families, and the community. Mental illness and substance use share many biological, psychological, and social risk factors. Co-occurring mental health and alcohol and other drug disorders can worsen the impact of these issues on an individual's life, increasing the risk for outcomes such as self-harm, suicidality, homelessness, violence, relationship breakdowns, unemployment, and poor physical health, to name but a few.

MNMH includes a range of local and statewide Alcohol and Drug services (ADS) aimed at prevention, early intervention and treatment for substance use disorders. Ensuring that clinicians and clients have access to the most up-to-date evidence-based information and strategies is critical to contemporary alcohol and drug practice. At MNMH's ADS we believe that involvement in research by clinicians is fundamental to developing and enhancing the service. This means almost all those working in the service are engaged in some way with research. This aspect of our work encourages staff to examine critically the performance of the ADS, and to consider ways to improve outcomes for our clients.

The ADS is a diverse and growing multi-disciplinary team with a history of conducting collaborative research and mentoring early career clinicians, researchers, and students in research. We have an established research champions network which has driven the establishment of an evidence-based research and clinical culture that is embedded within the service and supported by the MNMH Executive. This structure enables us to build research capacity by giving clinicians a clear structure and pathway for sharing their ideas and receiving feedback, mentoring and support to undertake projects.

The ADS offers clinician-researchers and their collaborators the unique opportunity to undertake innovative research tackling the most critical issues within the alcohol and other drugs (AOD) sector. The comprehensive data systems and Client Advisory Committee place the MNMH's ADS staff in an ideal position to conduct research from small scale investigative studies through to large scale effectiveness and population health initiatives.

Over the past five years research and evaluation projects by the ADS have targeted: training, priority populations, improving pathways into treatment and enhancing family and carer support. This includes research into the role and effectiveness of the statewide hosted alcohol and drug services (Adis 24/7 Alcohol and Drug Support and Insight Centre for Alcohol and Other Drug Training and Workforce Development). For example, the team has undertaken novel research that has led the way in enhancing opioid treatment and reducing overdose. They have conducted innovative research into special populations such as LGBTQI+, youth and women. This research aims to ensure individuals experiences with alcohol and drug services are tailored and effective and result in outcomes that reduce the impact of substance use on wellbeing and functioning.

As a service we aim to continue to support and engage in research and evaluation projects that test new ground. We have a strong history as early adopters of innovations in practice and as collaborators in large scale trials that advance new treatments and implementation of evidence-based treatment. For example, the emerging field of pharmacogenomics investigates variations in the metabolism of medications reflecting inherited and acquired influences. The ADS has recently completed a pharmacogenomic study of 106 patients with codeine use disorder, in collaboration with myDNA. Codeine is metabolised in the liver to become morphine; the efficiency of this process can vary widely. From a simple mouth swab DNA test, we found that people who had developed codeine use disorder were significantly more likely to be efficient metabolisers of codeine, thus placing them at increased risk of developing dependence.

Another example of our engagement in research is about to begin at our Biala site where we will soon begin recruitment for TINA, a prospective randomised placebo controlled multicentre study of mirtazapine in the treatment of methamphetamine use disorder, with a 12 week follow up. The study is supported by the Medical Research Futures Fund. Anyone working in the field of Mental Health and Alcohol and Drug will be familiar with the challenge that methamphetamine use disorder presents to patients and clinicians alike, where unlike in opioid use disorder there is very limited evidence for effective drug treatment. The ADS hopes to recruit 60 people with methamphetamine use disorder into the trial over 2 years, a full-time research assistant starts work in August 2022 to support the study.

We look forward to sharing outcomes from our current projects in future editions of the Research Review and we are proud to highlight here some of the outstanding work of our clinicians from 2021. In particular, the work of our staff was recognised by the peak alcohol and other drug organisation, the Australasian Professional Society on Alcohol and other Drugs, with sixteen papers, posters and abstracts accepted to their 2021 conference. We share details of many of these in this section. We also feature three innovative projects that were completed or published in 2021.

APSAD Conference

In November 2021, Metro North Mental Health's Alcohol and Drug Service (MNMH-ADS) made an impressive showing at the 40th Annual Australasian Professional Society on Alcohol & other Drugs (APSAD) Scientific Drug and Alcohol Conference. The conference included 16 presentations and posters from MNMH-ADS. The contribution included research and quality improvement projects that highlight the innovative and evidence-based approach MNMH-ADS take to improve the service and practice. MNMH-ADS representatives included Dr Hollie Wilson, John Kelly, Dr Hoiyan Karen Li, Dr Jeremy Hayllar, Louise Durant, Peter Cochrane, Heidi Deifel-Carlion, Cassandra Davis, Meredith Taylor, Amanda Morphett, Michaela Boyce, A/Prof Niall Higgins, Jeff Buckley, Anita Chatfield, Rebecca Mounsey, Cameron Francis, Kiara Palmer and Annaketurah Ralph.

We asked Dr Hoiyan Karen Li for a comment on the ADS's presence at the APSAD conference, why it was important and what it means for the service:

The annual APSAD conference is the leading scientific conference in the field of Alcohol and Drug work across Australia and New Zealand. The 16 papers and posters that our team presented at the conference celebrate some of our recent research projects and innovations in the field. The success of our team at APSAD is a terrific recognition that our work is breaking new ground, developing innovative solutions and pathways for training alcohol and other drug professionals and is achieving excellence in care for clients.

Below are further details on some of the projects presented at the conference:

SCOT: Developing a shared care model of service for treatment of opioid dependence from conceptualisation to implementation

Authors: HOIYAN KAREN LI[1,2], PETER COCHRANE[2], TRACEY VEITCH[1,2]

[1]Insight: Centre for alcohol and other drug training and workforce development, Queensland Health, Brisbane, Australia, [2] Metro North Mental Health Alcohol and Drugs Service, Metro North Health, Queensland Health, Brisbane, Australia.

Presenter: Tracey Veitch
Email: tracey.veitch@health.qld.gov.au

SCOT
Shared Care for Opioid Treatment
BRISBANE NORTH

Introduction and Aims:
Our aim was to establish a sustainable model of shared care for opioid treatment clients which would move stable clients into a more appropriate treatment setting. We believed this would increase the capacity of the Alcohol and Drug Service to provide timely access for high risk/priority clients and those with complex needs.

What is shared care?

"Shared care is a model of service delivery where stable clients in an Opioid Treatment Program (OTP) clinic are referred to their GP for OTP support. Shared care is to be encouraged because it may normalise treatment, reduce perceptions of stigma and enhance client autonomy."

"The Opioid Treatment Program (OTP) clinic retains overall management of OTP for the client, with the responsibilities of each party documented in an agreement. The GP will review the client regularly, provide Written Instructions to pharmacy, and contact the OTP clinic to discuss any changes to OTP dose or client stability."

Benefits of shared care include increasing confidence and willingness of GPs to engage with AOD clients, increased client satisfaction, increased client access to preventative health care, improved relationships between tertiary and primary health services.

Method/Approach

Prepare
Research shared care models locally and overseas – what has been done/tried

Engage
Stakeholder engagement – GPs, Primary Health Network, Pharmacists and AOD services

Development
Modified Delphi method to engage service clinicians and explore general elements of shared care model

Project Phase
Training all staff across 3 outpatient opioid treatment clinics. Initialised 18 clients in shared care with 18 different GPs.

Business as Usual and Ongoing Feedback
Interviews were conducted with clients and clinical staff members 6 months after implementation.

Lessons learned:

- Involving clinicians across multiple stages of the project to increase engagement in the shared care model.
- There was initial change anxiety from clients and clinicians.
- The role of a Shared Care Co-ordinator was crucial to the initial project phase as well as ongoing sustainability.

Project outcomes:
This has expanded greatly since the end of the project phase with both client and clinician's reporting shared care to be a positive experience and one that meets their needs.

There are now:

- Published procedures for shared care and buy in from all those involved.
- Suites of documents and resources dedicated to each participant (Approved Prescriber, AODS Case Manager and Pharmacist)
- A dedicated Shared Care Co-ordinator (CNC)

A toolkit available through Insight to assist other services to implement a similar model. (https://insight.qld.edu.au/toolkits/scot/detail)

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insight
Centre for alcohol and other drug training and workforce development
Metro North Health
Queensland Government

***SCOT:* Developing a shared care model of service for treatment opioid dependence from conceptualisation to implementation.**

***Li, H. K., Cochrane, P.** & Veitch, T. (2021). Drug and Alcohol Review, 40(S1), S96.*

Dr Hoiyan Karen Li, Peter Cochrane and Tracey Veitch, had the idea to develop a model of shared care for stable opioid patients. This would see consumers in an Opioid Treatment Program (OTP) referred to their GP for support. The OTP clinic would still manage opioid treatment for the consumer, with the support of a GP who would regularly review the consumer and work together with the OTP.

The shared care model also allows GP's to feel supported when working with people who have opioid addiction.

The model was implemented in three outpatient opioid treatment clinics with 18 consumers and 18 GP's, with consumer's and GP's reporting positive experiences with the model. By collaborating with external teams during the development and implementation process, the team was able to increase interest, acceptability, and update of the model.

Breaking down barriers and optimising care for lesbian, gay, bisexual, transgender and queer (LGBTQ) people in a tertiary alcohol and drug treatment service.

Kelly ,J., Wilson, H. & Davis, C. *(2021). Drug and Alcohol Review, 40(S1), S89.*

John Kelly, Dr Hollie Wilson and Cassandra Davis conducted a research project in 2021 to investigate the experience and barriers that LGBTQ people experience when attempting to access ADS. The study conducted two focus groups with a total of 12 LGBTQ consumers attending AOD treatment services. The focus groups discussed the reasons for AOD use, access and treatment barriers and recommendations for improvement.

Their results highlighted that AOD services can be more LGBTQ inclusive. The focus groups identified being unaware of treatment, costs and wait times; services not addressing LGBTQ specific issues; fear of discrimination within services; and confidentiality concerns as the main barriers for LGBTQ people. Participants recommended services addressing LGBTQ specific issues, and LGBTQ staff; and better referral pathways and connection between services.

A novel responsive telehealth intervention to address overdose risk for people recently released from prison – the ROADS (Released Offender Alcohol and Drug Support) project.

Delifel-Carlion, H., Boyce, M. & Wilson, H. *(2021). Drug and Alcohol Review, 40(S1), S64*

Heidi Delifel-Carlion and Dr Hollie Wilson developed the ROADS project to provide telehealth support for prisoners in the first 2-4 weeks after their release. As many of the alcohol and drug related deaths that occur in ex-prisoners happen during this period, greater support was needed to provide services to this high-risk population. This was exactly what the ROADS project aimed to do. The ROADS support model offered 4 telephone support sessions to provide psychoeducation, harm reduction and emotional regulation strategies as well as providing direct links to further care when needed. The 7-month trial involved 69 consumers and 190 sessions. Consumers involved also reported that they found the program helpful, motivating, and relevant. The telephone-based approach made attending easy and stress free.

Establishing nurse-led overdose prevention training in public medically assisted opioid treatment centres: Lessons learned.

Li, H. K, Durant, L., Higgins, N. & Hayllar, J. *(2021). Presented at ASPAS Scientific Drug and Alcohol Conference.*

Developed a take-home naloxone and overdose prevention training program. In this Nurse-led program, free intranasal take-home naloxone kits were given to participants along with an education session including a video clip on identification and management of overdose. After which, participants were given a summary of learnings. With funding from SEED, the initiative involved nurses at 3 community opioid treatment clinic. Despite pandemic interruptions, 100 education sessions were conducted. Led by Dr Hoiyan Karen Li, Louise Durant, A/Prof Niall Higgins, and Dr Jeremy Hayllar, all from MNMH, also provided anecdotal evidence that there were at least two cases where the take-home naloxone kits were used to reverse opioid overdose. The program has also now been accepted into practice at outpatient clinic.

Barriers in managing tobacco dependence in under 18s': highlights from interviews with clinicians in Queensland.

***Mounsey, R., Li, H. K. & Francis C**. (2021). Presented at APSAD Scientific Drug and Alcohol Conference.*

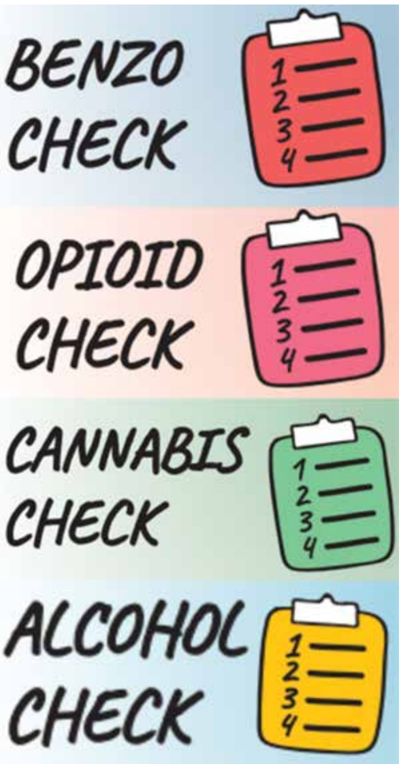
One in 20 high school kids are currently active smokers who are not ready to quit, and their smoking can have negative impacts on health and social aspects of their lives. Through their study, Rebecca Mounsey, Dr Hoiyan Karen Li, and Cameron Francis aimed to understand the challenges clinicians face in supporting people under 18 in managing tobacco dependence.

Interviews were conducted with 12 clinicians. These interviews identified smoking norms in the home and social environment, difficulties with Nicotine Replacement Therapy, adult-centric behavioural interventions and psychosocial complexity that impact young people's abilities to quit smoking. They concluded by suggesting better specific treatment information and interventions for under 18's that considers their goals, their institutional setting and non-health related harms (e.g., disengagement for school).

Providing access to sensory approaches training for alcohol and other drug clinicians.

***Taylor, M. & Li, H. K.** (2021). Presented at APSAD Scientific Drug and Alcohol Conference.*

Sensory approaches are strategies that use the sensory system to regulate emotions when experiencing distress or agitation. This can be helpful for AOD users to promote self-regulation and manage cravings, mood, and social, emotional, and psychological needs. However, there is a lack of effective and accessible training for the AOD workforce. To meet this gap in training, Michelle Taylor and Dr Hoiyan Karen Li undertook three initiatives to support AOD staff in sensory approaches training.



The initiatives included a Sensory Approaches for AOD Practice workshop, a web-based toolkit of resources, including webinars and consultations and advice to be provided to service providers. Clinicians and the Lived Experience Workforce value these initiatives to better practice sensory approaches.

Check Tools: Access insights for ultra-brief interventions for alcohol and drug use.

***Li, H. K., Buckley, J., Taylor, M.** & Clark, S. (2021). Presented at ASPAS Scientific Drug and Alcohol Conference.*

Check Tools are ultra-brief interventions tools for GPs, hospitals, general health, and specialist mental health and AOD treatment providers. Brief interventions typically include feedback on substance use and health-related harms, identification of high-risk situations, simple advice about how to cut down, strategies that can increase motivation to change behaviour, and the development of a personal plan.

Six ultra-brief intervention handouts were developed for methamphetamines, alcohol, cannabis, opioids, benzodiazepines, and relapse prevention. Jeff Buckley, Dr Hoiyan Karen Li, Michelle Taylor from Metro North, and Samantha Clark from Metro South looked at these tools to investigate their use and how that might have changed during COVID-19. There were 5,029 views of the toolkits between throughout 2020. In comparison, 2019 saw 5060 page views, indicating that COVID-19 did not impact interest of clinicians in brief intervention tools.

Reducing Barriers to Alcohol and Drug Treatment through a Structured Brief Intervention Program Delivered by Adis 24/7 Alcohol and Drug Support.

Palmer, K., Ralph, A. & Wilson, H. *(2021). Drug and Alcohol Review, 40(S1), S116.*

Telehealth services break down barriers such as geographical location, transport, child minding, and employment which may prevent a person from engaging in treatment for alcohol and drug problems. The “Your CALL” structured brief intervention is a telephone-based counselling service for individuals with moderate alcohol and drug concerns. The program, which was piloted by Adis from April to June 2020, offers three sessions focusing on raising awareness, coping skills, and reducing harms associated with substance use

Kiara Palmer, Annaketurah Ralph, and Dr Hollie Wilson, conducted an evaluation of the 40 referrals received. 70% of clients referred to the program attended the first session and 30% of these individuals completed the program. Consumers also indicated that they found the program easy to access and increased their motivation to seek ongoing support.

Substances and senses: Exploration of the sensory patterns of young people within an alcohol and drug treatment service.

Kelly, J., *Meredith, P.,* ***Taylor, M., Morphett, A. & Wilson, H.*** *(2021). Presented at ASPAS Scientific Drug and Alcohol Conference.*

Research has shown that adults with substance use disorders have sensory processing patterns which are significantly different from the general population. However, this has not been established for young people. In a cross-sectional quantitative study, John Kelly, Michelle Taylor, Amanda Morphett, and Dr Hollie Wilson alongside Pamela Meredith from Central Queensland University investigated the sensory patterns of young people (n = 87) with substance use disorders using Dunn’s 4 Quadrant Model of Sensory Processing *(Figure 3)*.

Low registration, sensory sensitivity, and sensation avoiding were significantly higher among young people with substance use disorders when compared with the general population. 91% of participants had an atypical score on one or more sensory pattern. These outcomes suggested to the researchers that young people may be using substances to avoid or seek sensory input for the purposes of emotional regulation.

Towards trauma-informed care when working with alcohol and drug issues.

Taylor, M., *Phillips, J. &* ***Li, H. K.*** *(2021). Presented at ASPAS Scientific Drug and Alcohol Conference.*

Trauma-informed care is an important factor relevant to AOD treatment to ensure that services avoid retraumatising consumers, particularly in AOD where it is common for those who are seeking treatment to be traumatised. To support the training of AOD service providers in trauma-informed care approaches Michelle Taylor, and Dr Hoiyan Karen Li, along with Jade Phillips from Metro South took a multi-pronged approach to creating a training program.

Firstly, a one-day introductory workshop was developed which has been delivered to 431 participants through face-to-face workshops in Queensland. In addition, a web-based tool kit of resources was created, including videos (59,127 views), an introductory e-Learning module (52% completion rate) and downloadable resources. This approach is one that can be used alongside current treatment models and interventions to keep trauma informed care up to date.

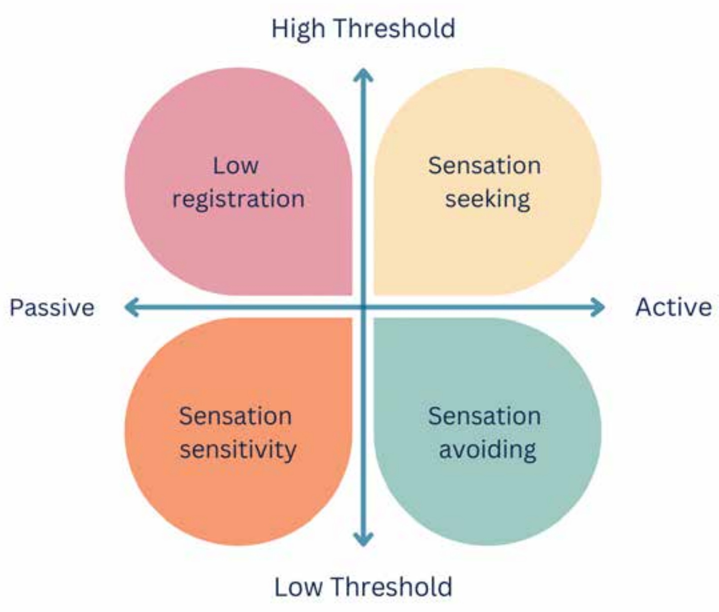


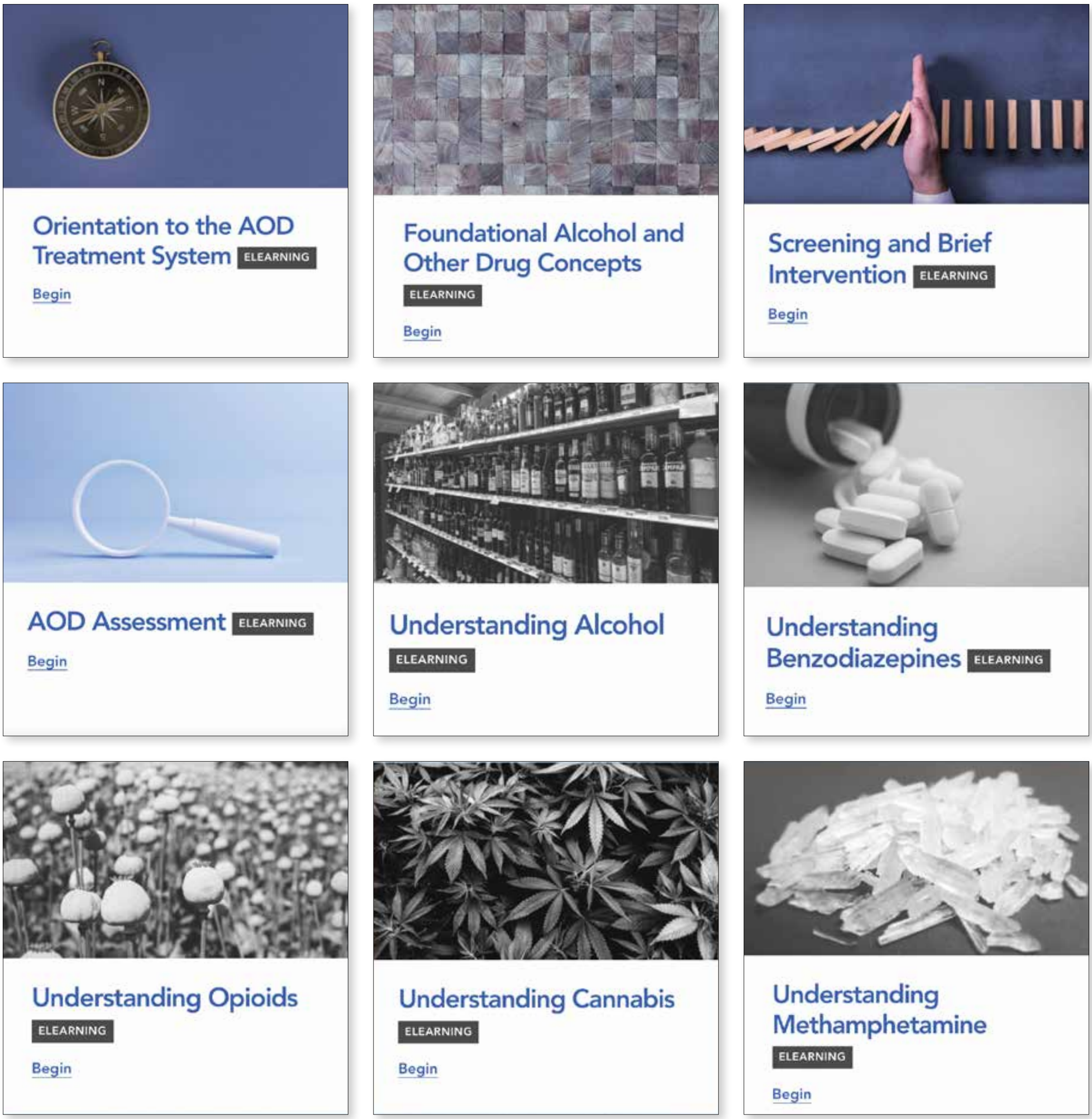
Figure 3. Dunn’s 4 Quadrant Model of Sensory Processing

What do practitioners want to know about in the alcohol and other drug space? Preliminary e-learning package access insights.

***Li, H. K., Buckley, J.,** Clark, S., **Chatfield, A. & Durant, L.** (2021). Presented at ASPAS Scientific Drug and Alcohol Conference.*

Giving GPs the tools to detect and respond to alcohol and other drug use was identified as a key strategy of the National AOD Workforce Development Strategy 2015-2020. Jeff Buckley, Dr Hoiyan Karen Li, Anita Chatfield and Louise Durant, alongside Samantha Clark from Metro South were interested to find out what information about AOD GP's access when barriers such as cost and face-to-face training are removed. To do this, they created internet-based learning modules for GPs to access for free.

In 2019 and 2020, the learning modules had 171 registered users. Of these people, users were most likely to access content relating to orientation to the AOD system, screening and brief interventions, opioids, alcohol, and benzodiazepines. These topics seem consistent with the concerns which are prevalent within the community. They noted that further research is necessary to determine why modules were completed (63%), which could be done through qualitative feedback of their learning platform.



Towards an Australian clinical research network for methamphetamine and emerging drugs – outcomes of the national centre for clinical research on emerging drugs methamphetamine and emerging drugs clinical research network working group 2018-21.

Siefried, K., Ezard, N., Christmass, M., ***Hayllar, J.,*** *& Ali, R. (on behalf of the NCCRED Methamphetamine and Emerging Drugs Clinical Research Network Working Group) (2021). Drug and Alcohol Review, 40(S1), S133-S134.*

The National Centre for Clinical Research on Emerging Drugs (NCCRED) funded a project which aimed to build research capacity and establish evidence-based treatments for methamphetamines and emerging drug concerns. Dr Jeremy Hayllar was part of a team of researchers across Australia who undertook a study to gather perspectives about the clinical research priorities for methamphetamine and emerging drug concern in Australia. The study occurred in four phases:

1. An online stakeholder survey
2. Thematic analysis of responses
3. Rapid literature review
4. Expert panel ranking of priorities against pre-determined criteria.

The priorities identified included piloting community-located drug checking, feasibility of social media/other opportunities to alert consumers of emerging risks, gamma hydroxybutyrate (GHB) overdose and withdrawal management, and impacts of an early warning information system on reducing harms.

This study facilitates new collaboration and partnerships within the sector and lead to NCCRED funding 24 research projects addressing these priorities, thereby increasing the research capacity of clinicians working in AOD. It also demonstrates the feasibility of undertaking a national process for priority setting which engages stakeholders at each step.

A clinical research network approach to a trial of oral Lisdexamfetamine for the treatment of acute methamphetamine withdrawal.

Siefried, K., Acheson, L. S., Dunlop, A. J., Lintzeris, N., Christmass, M., Bonomo, Y., Arunogiri, S., ***Hayllar, J.,*** *& Ezard, N. (on behalf of study investigators) (2021). Drug and Alcohol Review, 40(S1), S132-S133.*

Dr Jeremy Hayllar was part of a national project led by Krista Siefried from the NCCRED which implemented a clinical research network approach to design a pilot trial of Lisdexamfetamine to treat withdrawal from methamphetamine. The network of partners was strongly committed to the trial development and obtaining competitive funding. This commitment was aided through leveraging the experience of the New South Wales Drug and Alcohol Clinical Research Improvement Network and the NCCRED.

The trial was implemented effectively in multiple centres and demonstrates the feasibility of collaborating through clinical research networks. The clinical research networks help connect research to patients and build the translational capacity of results.

Further to the above presentations and abstracts, two publications from the Ethos Engage study were also presented. The Ethos Engage project is outlined in more detail in the next story.

The ETHOS Engage Study: Enhancing Treatment of Hepatitis C in Opioid Substitution Settings

MNMH ADS has partnered with the Kirby Institute to collaborate on The ETHOS Engage Study, a national study that ran from 2018 to 2021. The trial took an observational cohort approach to enhance the current state of HCV care in needle and syringe programs as well as drug treatment clinics and to develop a framework for HCV screening and treatment programs in these areas. The articles published to-date give insight into the current state of HCV infections in Australian as well as access to naloxone which could be used to help reduce overdoses in high-risk groups.

Progress Towards Elimination of Hepatitis C Infection Among People Who Inject Drugs in Australia: The ETHOS Engage Study.

In 2016, the World Health Organisation announced their goal to eliminate Hepatitis C Virus (HCV) as a public health problem by 2030. To contribute to this goal, it is necessary to evaluate the prevalence of HCV infection and uptake of treatment among people who inject drugs (PWID) in Australia.

Between May 2018 and September 2019 1,443 PWID were recruited from treatment sites across Australia. These participants provided a blood sample and completed a questionnaire. The project was interested in the prevalence of current HCV infections, and any self-reported history of treatment for previous or current HCV.

The research team, including lead author Dr Heather Valerio of the Kirby Institute and Dr Jeremy Hayllar, Clinical Director at MNMH ADS, found that 24% of participants were currently infected with HCV and 55% had previously been infected.

Out of those who had current or previous chronic HCV, 66% had received treatment for HCV through various means (e.g., direct-acting antiviral therapy (85%), drug treatment clinics (31%), hospital-based specialist clinic (19%), GP's (19%), in prison (16%), community-based clinics (3%), and needle and syringe programs (2%)). Current HCV infection was also associated with having a history of incarceration and daily use of injected drugs. However, they also found that current factors indicating marginalisation (e.g., homelessness) was associated with less treatment but also greater numbers of current HCV infection.

The authors described their findings as 'good news' with high uptake rates for treatment. However, there remains an urgent need to address some gaps in care in order to reach elimination by 2030. One such gap is marginalised PWID groups, particularly those who are homeless or incarcerated. The obvious barriers to receiving treatment (e.g., unstable housing) in marginalised groups should be reduced in order to maintain Australia's progress towards elimination by 2030.

Clinical Infectious Diseases
MAJOR ARTICLE
IDSA Infectious Diseases Society of America
hivma hiv medicine association
OXFORD

Progress Towards Elimination of Hepatitis C Infection Among People Who Inject Drugs in Australia: The ETHOS Engage Study

Heather Valerio,[1] Maryam Alavi,[1] David Silk,[1] Carla Treloar,[2] Marianne Martinello,[1] Andrew Milat,[3,4] Adrian Dunlop,[5,6] Jo Holden,[7] Charles Henderson,[8] Janaki Amin,[1,9] Phillip Read,[1,10] Philippa Marks,[1] Louisa Degenhardt,[11] Jeremy Hayllar,[12] David Reid,[13] Carla Gorton,[14] Thao Lam,[15] Gregory J. Dore,[1] and Jason Grebely[1]; on behalf of the ETHOS II Study Group

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Background. Evaluating progress towards hepatitis C virus (HCV) elimination is critical. This study estimated prevalence of current HCV infection and HCV treatment uptake among people who inject drugs (PWID) in Australia.

Methods. The Enhancing Treatment of Hepatitis C in Opioid Substitution Settings Engage is an observational study of PWID attending drug treatment clinics and needle and syringe programs (NSPs). Participants completed a questionnaire including self-reported treatment history and underwent point-of-care HCV RNA testing (Xpert HCV Viral Load Fingerstick; Cepheid).

Results. Between May 2018 and September 2019, 1443 participants were enrolled (64% injected drugs in the last month, 74% receiving opioid agonist therapy [OAT]). HCV infection status was uninfected (28%), spontaneous clearance (16%), treatment-induced clearance (32%), and current infection (24%). Current HCV was more likely among people who were homeless (adjusted odds ratio, 1.47; 95% confidence interval, 1.00–2.16), incarcerated in the previous year (2.04; 1.38–3.02), and those injecting drugs daily or more (2.26; 1.43–2.42). Among those with previous chronic or current HCV, 66% (n = 520/788) reported HCV treatment. In adjusted analysis, HCV treatment was lower among females (.68; .48–.95), participants who were homeless (.59; .38–.96), and those injecting daily or more (.51; .31–.89). People aged ≥45 years (1.46; 1.06–2.01) and people receiving OAT (2.62; 1.52–4.51) were more likely to report HCV treatment.

Conclusions. Unrestricted direct-acting antiviral therapy access in Australia has yielded high treatment uptake among PWID attending drug treatment and NSPs, with a marked decline in HCV prevalence. To achieve elimination, PWID with greater marginalization may require additional support and tailored strategies to enhance treatment.

Keywords. hepatitis C virus; direct-acting antivirals; people who inject drugs; hepatitis C elimination.

Non-fatal opioid overdose, naloxone access, and naloxone training among people who recently used opioids or received opioid agonist treatment in Australia: The ETHOS Engage study.

In 2017, it was estimated that around the world, 109,500 people died from an opioid overdose, while in the year ending April 2021 there were 78,056 opioid overdose deaths is the USA alone (i.e., 213 people each day). The most recent Australian data found 882 deaths from opioid overdose in 2020, out of a total of 1644 unintentional overdose deaths. Naloxone provides one option to help prevent these deaths. Naloxone is a short-acting opioid antagonist which rapidly reverses opioid overdose and may prevent death. It can be administered by people with minimal training, and a preparation for delivery into the nostril avoids the use of needles. 30% of people who inject drugs receive this training when they present at needle syringe programs yet overdose rates continue to rise.

Since recruitment started in 2018, Dr Jeremy Hayllar has been an investigator on a study seeking to understand if the factors associated with recent non-fatal opioid overdose are the same factors that are associated with naloxone access and training in people who recently used opioids or received opioid agonist treatment (OAT).

A total of 1,280 participants who had recently used or received OAT were recruited, 7% of whom had experienced a non-fatal opioid overdose in previous 12 months, 17% reported access to naloxone and 14% reported being trained how to administer the drug. Among people who had recently used opioids or received OAT, benzodiazepine and hazardous alcohol use was associated with non-fatal opioid overdose.

Contents lists available at ScienceDirect

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Research paper

Non-fatal opioid overdose, naloxone access, and naloxone training among people who recently used opioids or received opioid agonist treatment in Australia: The ETHOS Engage study

A. Conway[a,b,*], H. Valerio[a], A. Peacock[c,d], L. Degenhardt[c], J. Hayllar[e], ME. Harrod[f], C. Henderson[f], P. Read[a,g], R. Gilliver[g], M. Christmass[h,i], A. Dunlop[j,k], M. Montebello[c,l,m], G. Whitton[n], D. Reid[o], T. Lam[p], M. Alavi[a], D. Silk[a], AD. Marshall[a,b], C. Treloar[b], GJ. Dore[a], J. Grebely[a], on behalf of the ETHOS Engage Study Group

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ARTICLE INFO

Keywords:
Opioids
Overdose
Naloxone
Australia

ABSTRACT

Background: Overdose is a major cause of morbidity and mortality among people who use opioids. Naloxone can reverse opioid overdoses and can be distributed and administered with minimal training. People with experience of overdose are a key population to target for overdose prevention strategies. This study aims to understand if factors associated with recent non-fatal opioid overdose are the same as factors associated with naloxone access and naloxone training in people who recently used opioids or received opioid agonist treatment (OAT).

Methods: ETHOS Engage is an observational study of people who inject drugs in Australia. Logistic regression models were used to estimate odds ratios for non-fatal opioid overdose, naloxone access and naloxone training.

Results: Between May 2018-September 2019, 1280 participants who recently used opioids or received OAT were enrolled (62% aged >40 years; 35% female, 80% receiving OAT, 62% injected drugs in the preceding month). Recent opioid overdose (preceding 12 months) was reported by 7% of participants, lifetime naloxone access by 17%, and lifetime naloxone training by 14%. Compared to people receiving OAT with no additional opioid use, recent opioid, benzodiazepine (preceding six months), and hazardous alcohol use was associated with recent opioid overdose (aOR 3.91; 95%CI: 1.68–9.10) and lifetime naloxone access (aOR 2.12; 95%CI 1.29–3.48). Among 91 people who reported recent overdose, 65% had never received take-home naloxone or naloxone training.

Conclusions: Among people recently using opioids or receiving OAT, benzodiazepine and hazardous alcohol use is associated with non-fatal opioid overdose. Not all factors associated with non-fatal overdose correspond to factors associated with naloxone access. Naloxone access and training is low across all groups. Additional interventions are needed to scale up naloxone provision.

This highlights a major opportunity to enhance the provision of naloxone and naloxone training to all those who may be at risk – including patients on prescription opioids. Anna Conway, lead author from the Kirby Institute, Dr Hayllar, and their colleagues across Australia concluded by calling for a scaling up to this prevention strategy to reduce the rates of morbidity and death amongst opioid users.

Implementation of a Direct Referral Service for Streamlined Alcohol and other Drug Treatment: A Service Evaluation

Adis 24/7 Alcohol and Drug Support operates a 24/7 confidential telephone support service for people with alcohol and drug problems, their families as well as other health professionals. Commonly, phone calls result in the caller being referred to a local AOD service for treatment and intervention. In the past this meant that a caller would have been provided with a phone number or that a three-way conference call was conducted to provide a 'warm' hand over to the treatment service. However, this method had its barriers, including the caller needing to make multiple calls and repeating their story to different services in order to access treatment. The team at Adis saw the opportunity to develop a new program to improve referrals from the Adis support line.

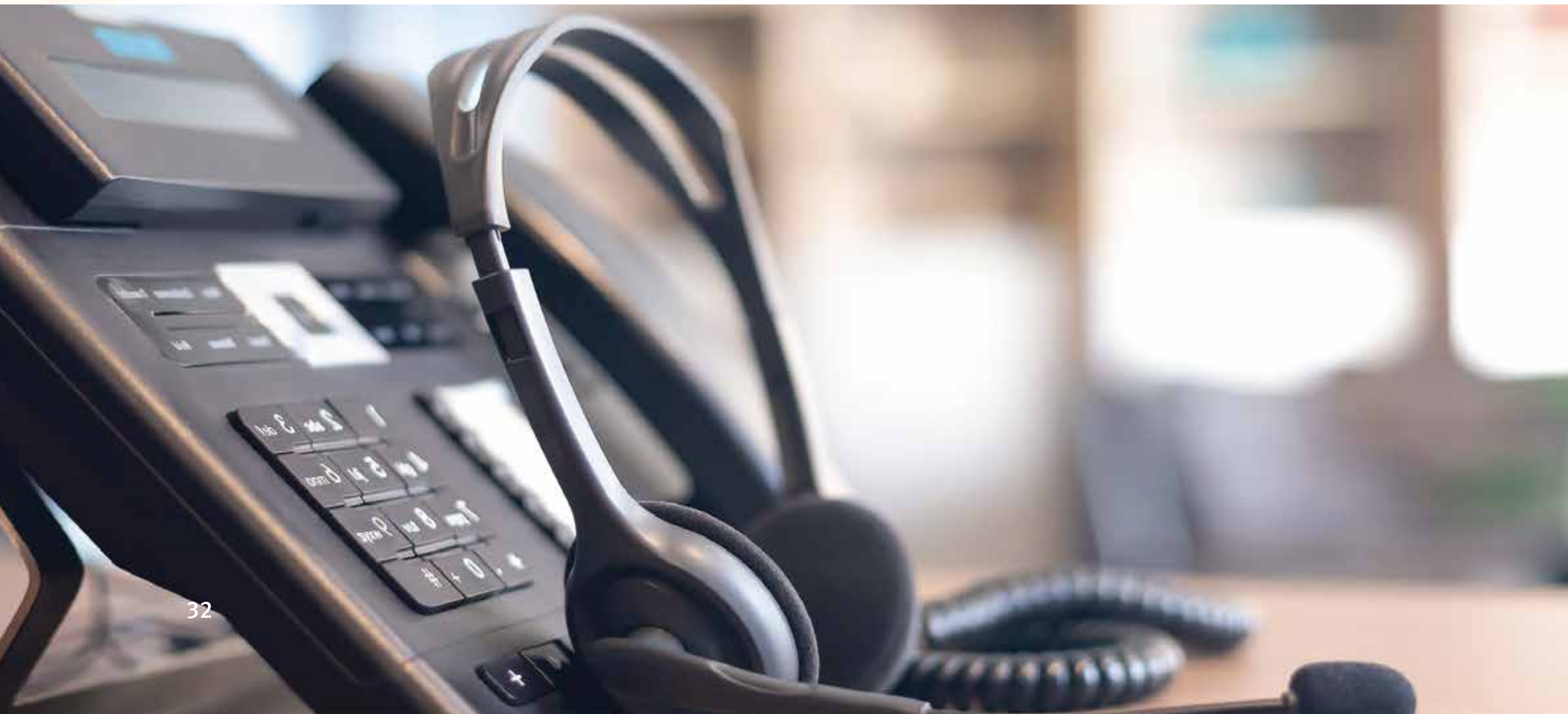
The new program, the Adis-Link Direct Referral service has now been implemented for callers to the 24/7 support line. With the new program in place, when counsellor and caller agree that the caller would benefit from engaging in treatment with a participating service provider, the counsellor gathers information to be shared with the treatment service, such as AOD use and risk, and biopsychosocial information. This information is then shared through a file sharing software that encrypts the file and ensures the information is secure, even when sharing with external providers.

This service was initially implemented in 2017 and saw good uptake rates by treatment providers, increasing the scale of the initiative such that it was necessary to evaluate the service to determine whether it was meeting its objective to reduce barriers and could be sustained over time. This evaluation was undertaken by project lead Jenny Mitchell, Senior Counsellor and Stakeholder Liaison and Dr Hollie Wilson, Director of Adis 24/7 Alcohol and Drug Support, alongside Kathryn Kynoch, their colleague from the Australian Centre for Health Services Innovation and QUT.

The project team undertook a multifaceted evaluation of the service. Specifically, they collected data about the number of participating AOD service providers, referral numbers, adherence to a two-business day contact initiation timeframe, and feedback about the referral process from consumers and counsellors. They also conducted workshops with counsellors for further feedback and the Clinical Sustainability Assessment Tool was used to measure the sustainability of the program.

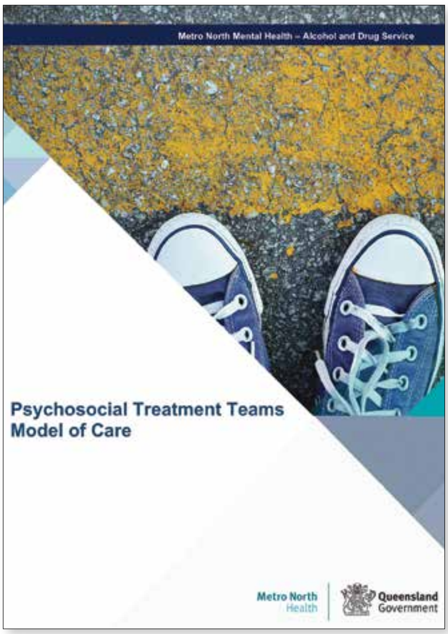
As of December 2021, 20 organisations had signed referral arrangement deeds covering 119 AOD treatment sites across Queensland. Between January and November 2021, 1,325 referrals were sent to these organisations. Of these referrals 0.5% were considered inappropriate, 7% exceeded the two-business day contact initiation period, and 17% of consumers were unable to be contacted. Feedback received from consumers suggested that they felt heard and supported on the phone and that 92% found the process easy or very easy. Similar feedback was received from counsellors who indicated that they felt confident in their ability to follow the process, and that they could access support to answer queries.

The sustainability of the project was also promising; however, it will require further and ongoing stakeholder engagement, monitoring and reporting of outcomes. Engaging in these practices will enable the continual improvement of the program and the benefits it provides to their consumers.



Developing a Model of Care for the MNMH-ADS Psychosocial Treatment Teams

Kim Sander, John Kelly, Dee Burdon, Cassandra Davis, Dr Hollie Wilson, and Emma Armitage, with the support of the Psychosocial Treatment Team Staff, developed a Model of Care for the Psychosocial Treatment Teams. Their efforts resulted in the Excellence in Performance award at the Metro North Staff Excellence Awards. The model of care outlines 5 main components to effective care by our psychosocial teams. The 5 components include intake, engagement and safety, stabilisation of AOD and building treatment commitment, emotional regulation, and integration and transfer of care. When moving through the phases, the model of care provides flexible treatment options about the need for, or frequency of, appointments or can be provided in addition to an intensive treatment program.


Metro North Mental Health – Alcohol and Drug Service

Psychosocial Treatment Teams
Model of Care

Metro North Health
Queensland Government

We spoke to John Kelly, Allied Health Manager, and Dee Burdon, Team Leader for the Chermside Psychosocial Treatment Team about the process behind the new model of care and their future evaluation plans:

What was the motivation behind the project?

The project was initially motivated by an interest in documenting the current model of care being utilised by the Psychosocial Treatment Teams, coupled with a need to examine service capacity limits, consumer flow and strategies to manage service demands. This resulted in the current Psychosocial Treatment Teams Model of Care. The Model of Care is an extension of the ADS Model of Care: Trauma Informed Care and Practice for Alcohol and Drug Treatment, which serves as a foundation for the phases of care outlined in the model. The project draws on existing strengths of the Psychosocial Treatment Teams in its flexible yet intensive approach to consumer needs and goals.

Tell us about the process for developing the model?

Developing the model was a collaborative effort by the Psychosocial Treatment Leadership Team comprising of the MNMH-ADS Director Allied Health Services, Team Leaders at Biala, ADIS, Chermside and Redcliffe-Caboolture and the Service Development Coordinator, with Psychosocial Team clinician's input. Initially the process involved documenting what 'we currently do', and then a series of discussions to confirm and clarify to ensure consistency across sites, and plan future interventions and aspirations. This was also benchmarked against research outcomes of best practice in the AOD treatment sector.

What does a model like this do for the service and why is that important?

The Model of Care provides a written document to detail the psychosocial treatments and treatment pathways provided MNMH's ADS Psychosocial Treatment Teams. Additionally, it provides guidelines and offers parameters within which routine service provision occurs and defines service capacity limits and management strategies. These components of the model optimise service access and enhance treatment matching and resultant treatment outcomes. The Model furthers clarifies key performance indicators and outcome measures for the Psychosocial Treatment Teams.

Are you planning to evaluate the model, if so, what will this look like?

The Model of Care will be evaluated and reviewed. This will involve formal evaluation of some of the initiatives. For example, the group intervention "Getting Ready for Change" has already been evaluated and was found to improve attendance and retention rates. It also reduced wait times and increased clinical capacity. This evaluation was published in Substance Abuse in 2019. We will be trialling the use of PROMs/PREMs to assess consumer outcomes, with clinician feedback. It is envisioned that the Model of Care is a flexible model and will evolve in line with evidence, outcomes and consumer and service needs.

Eating Disorders

Introduction by Amy Hannigan (Team Manager Service Development, Queensland Eating Disorder Service (QuEDS)).

Amy Hannigan
Team Manager,
Service Development
Queensland Eating Disorder Service

The incidence of individuals seeking treatment for eating disorders locally and nationally continued to rise throughout 2021. On average, contacts with the QuEDS intake service increased from 45 per month in 2019 to 109 per month in 2021. As the state-wide eating disorder service, QuEDS is committed to increasing the capacity of services (publicly and privately) to provide evidence-based and evidence-informing treatment. This was the focus of a research and quality improvement project undertaken by our QuEDS team in 2021.

As a service, we provide advice, support, training, and education to health professionals. The research and quality improvement work we do helps in the provision and evaluation of evidence-based therapy and education. Evaluating initiatives that increase the capacity of the broader eating disorder workforce to provide treatment for individuals experiencing eating disorders is an important undertaking for QuEDS. One such example is an upcoming publication based on a quality improvement project we conducted during 2021: The Dietetic Peer Supervision Model. This model brings together dieticians from across Queensland to provide professional development and peer support. The success of this model can be seen from the uptake by dieticians with eight groups currently running across the state as well as the high value that participants place on the experience of participating.

Further in this arena of continual improvement, was the running of the annual QuEDS Dietician Masterclass, which saw hundreds of dieticians, not just from Queensland but nation-wide, gather and discuss the value of the dietetic intervention in eating disorder treatment. Discussions during the two days of sessions highlighted the importance of evaluating our work, reflecting on practice, and collaborating with others.

Looking to the future, our service has joined a consortium of other eating disorder treatment providers across Australia in the development of treatment outcomes database which will enable regular evaluation of treatment provision at QuEDS. It will also contribute to a greater understanding of eating disorders and their treatments via the opportunity to collaborate on broader research initiatives.

In this section, I am pleased to share with you details of both our peer supervision model and the Dietician Masterclass. You will also read about the success of one of our team, Dr Carmel Fleming, who successfully completed her PhD in 2021 and contributed to our thinking about how families are included in QuEDS programs. We also share details of a quality improvement project that evaluated changes made to our QuEDS Day Program.

The Value of the Dietetic Intervention in Eating Disorder Treatment: The 2021 QuEDS Dietitians Masterclass

Amanda Davis
Senior Dietician
Queensland Eating Disorder Service

On 7 and 8 October 2021 QuEDS conducted their annual dietitian's masterclass with enormous success. Having been unable to run the masterclass in 2020 due to COVID-19, they faced the daunting task of organising an online event that was still engaging for attendees. The symposium was an online event streamed live from the RBWH Education Centre. This allowed greater accessibility for rural/regional clinicians and for interstate participants. The organisers successfully brought together over 200 Dietitians from all over Australia and New Zealand. These attendees were drawn in by the impressive line-up of presenters with QuEDS and Metro North representatives including the Director of QuEDS, A/Prof Warren Ward; Principal Research Fellow, A/Prof Kylie Burke; PhD Candidate, Carmel Fleming; Accredited Practising Dietician (APD), Nina Meloncelli; Advanced APD, Amanda Davis; and Clinical Psychologist, Erin Marsland. Joining Metro North's representatives were a group of experts from both Queensland and New South Wales, such as Conjoint A/Prof Susan Hart; and PhD Candidates and APDs, Caitlin McMaster and Alana Heafala in addition to APD's Elissa Robins, Shane Jeffrey, Megan Bray and Copeland Winten.

We spoke to the organiser of the event, Amanda Davis (pictured), senior dietitian at QuEDS for her take on the conference and the importance of research within dietetics:

What was the focus of the masterclass and what did you hope to achieve?

We were hoping to foster collaboration within the dietetic community, responsive/reflective practice, and a more consistent approach to dietetic intervention and an increased uptake of tools to evaluate practice. We are currently building an evidence base for dietetic intervention in the eating disorder arena, and this can make it hard to prove our worth. I was hoping to raise awareness of the importance of evaluating what we do so we can prove our worth.

How did you bring research into the Masterclass and why did you think this was important?

We ran two research-based sessions, one about the value of standardised interventions and the second about how we would evaluate the outcomes of those interventions. This included some novel evaluation tools that are yet to be validated presented by PhD candidates. It is a rapidly evolving space and we are excited to provide a platform for dietitians to share their work. We followed up these presentations with a panel discussion with A/Prof Kylie Burke and Nina Meloncelli, both are very experienced in doing and translating research into practice. It also wasn't just about research for the purposes of higher education. Stacey O'Donnell, a clinical dietitian, presented on an audit tool developed as an AH-TRIP funded project. The tool follows the journey of an adult inpatient admitted for an eating disorder and evaluates alignment with evidence-based guidelines and staff experience. We wanted to highlight the importance of evaluating our work and collaborating with others to further the evidence base in our industry.

You mentioned including a research panel, what was the aim of this?

We know that the prospect of doing research can be daunting for dietitians. Our goal was to make research more approachable. We want to say, here's a way you can implement standardized treatment, here's some tools to evaluate the treatment, and here are some people who help you.

With the Masterclass having been so successful this year, what are your goals for the year to come?

I do feel that the industry is ripe to move into the research space however, we always look to promote a collaborative stance and respond to what attendees are asking for, whilst providing updates on new developments. We want the masterclass to promote collaboration, build skills, and build community.

QUEDS

Dietitians Masterclass

2021

VIRTUAL EVENT

THURSDAY 7TH OCTOBER
& FRIDAY 8TH OCTOBER

Contact QuEDSEducation@health.qld.gov.au for further information
on how to register & program

The success of the 2021 Dietitians Masterclass was well voiced through the feedback survey. Of over 200 attendees, 100 responded to the survey with 70 providing further feedback comments. It is easy to see how much people appreciated and valued the masterclass.

“A-mazing. Again, I am so thankful for the affordable attendance fee and can’t believe the quality of content and speakers that were present. The online delivery and affordability of this event made it very accessible to everyone. Please continue to offer this as an option for us rural private practitioners, even if COVID restrictions ease and face-to-face attendance is again possible. The minor technical difficulties did not prevent the delivery of a very worthwhile event.”

“So inspiring to hear how my colleagues in another state are working and the high level of work that is being done in QLD – I am looking forward to when face to face networking will be possible to even further enhance the reach of this symposium – thank you.”

“This was the best PD event I have attended. The content and speakers were so valuable and it was so encouraging to see so many dietitians interested in the same area. The support in this field is incredible and the symposium really showed how we can work together as a profession and learn from each other.”

*“Amazing. Loved it.
Y'all killed it.
Who knew I could have
so much fun sitting in front
of my computer alone
for two days.”*

QuEDS Assessment Clinic: decreasing wait times and increasing consumer and staff satisfaction through quality improvement

In 2020, the wait time for the QuEDS Assessment Clinic had increased from 4 weeks to 12 weeks after a doubling of referrals for specialist assessments being received. However, by 2021, the QuEDS multidisciplinary team of allied health professionals, nursing and psychiatry staff had proposed a change to the current model of care to address the problem.

We spoke with Amy Hannigan (Team Manager and Dietitian) about the clinic and the process of a quality improvement project:

What was this clinic about and what did you hope to achieve?

The question faced was how the team could increase their capacity to do assessments and decrease the wait times for consumers? It was decided that by undertaking a comprehensive triage screen and review of the referral by the multidisciplinary team, those consumers who were deemed lower risk from a physical and mental health perspective, would be assessed by a Clinical Nurse Consultant (CNC) and Dietician together and those with presenting with higher risk physical and mental health parameters would be triaged to the Psychiatrist. The clinic ran in three phases. Phase one was business as usual when we sought to thoroughly define and explore the problem and the evidence available to inform a change to the model of care. Phase two was the implementation of the nurse and dietitian stream to complement the psychiatry assessment stream. After reviewing pilot data and engaging key stakeholders it was decided that to increase efficiencies phase three will implement a move to CNC's conducting the assessments without the Dietitian present but with a dietician on site so that consumers can be referred as necessary.

How did you evaluate the clinic?

Evaluation examined the process, feasibility, impact, and acceptability measures. Through data collection of pre and post implementation wait time to initial assessment, satisfaction of staff, consumers and referrers and multidisciplinary review and agreement with assessment and treatment recommendations. An ethics exemption was sought so that we were able to share the evaluation of the change to model of care.

You gathered a lot of data, why was it important to do that evaluation?

This was important to show that the change to model of care is effective, safe, and acceptable and that it was efficient and not generating more work. It was about examining the feasibility of what we were doing in a structured, as opposed to an ad hoc way.

What have you learned from your data?

Preliminary analysis revealed consumers were very satisfied with the additional stream, with an average rating 6.9/7, that it met expectations 6.6/7 and that they were treated with respect 7/7. Wait time to assessment also decreased significantly, from 12 weeks to 3 weeks. The model has now pivoted to a nurse only assessment and is proving invaluable in its ability to flex up and down depending on referrals into the service.

Some consumer comments from the clinic:

"Everything went very good, better than I expected"

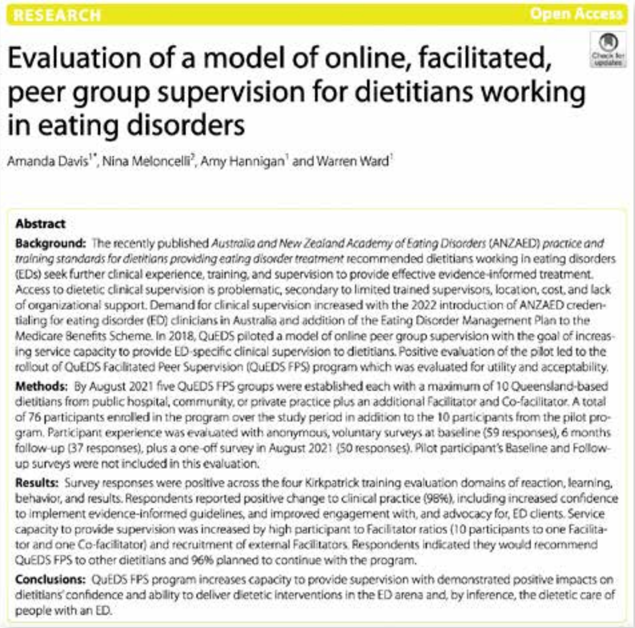
"Excellent efficiencies, no improvement required"

"Thank you for all you do, even if we seem a bit ungrateful – your awesome!"

What advice would you give someone who has an idea for a QI project but doesn't know where to start?

The most important aspect was engagement with all the key stakeholders. Think very broadly about who the key stakeholders are and engage with them in the process from the very beginning. The Assessment Clinic was very much driven from the team. As a team we had a problem, and it was from the team that we would find a solution. This way the clinic came about organically, and everyone was involved in discussions around what the clinic would look like, and this meant that, come time for implementation to occur, things ran rather smoothly. We continued to engage people through weekly meetings to identify any problems and tweaks that needed to occur, but a lot of barriers had been identified and dealt with before the clinic started. This way you are setting yourself up for better outcomes.

Implementation and Evaluation of a New Model of Online, Facilitated, Peer Group Supervision for Dietitians Working in Eating Disorders: A Descriptive Overview Informed by The Kirkpatrick Training Evaluation Framework



RESEARCH Open Access

Evaluation of a model of online, facilitated, peer group supervision for dietitians working in eating disorders

Amanda Davis[1*], Nina Meloncelli[2], Amy Hannigan[1] and Warren Ward[1]

Abstract

Background: The recently published *Australia and New Zealand Academy of Eating Disorders* (ANZAED) *practice and training standards for dietitians providing eating disorder treatment* recommended dietitians working in eating disorders (EDs) seek further clinical experience, training, and supervision to provide effective evidence-informed treatment. Access to dietetic clinical supervision is problematic, secondary to limited trained supervisors, location, cost, and lack of organizational support. Demand for clinical supervision increased with the 2022 introduction of ANZAED credentialing for eating disorder (ED) clinicians in Australia and addition of the Eating Disorder Management Plan to the Medicare Benefits Scheme. In 2018, QuEDS piloted a model of online peer group supervision with the goal of increasing service capacity to provide ED-specific clinical supervision to dietitians. Positive evaluation of the pilot led to the rollout of QuEDS Facilitated Peer Supervision (QuEDS FPS) program which was evaluated for utility and acceptability.

Methods: By August 2021 five QuEDS FPS groups were established each with a maximum of 10 Queensland-based dietitians from public hospital, community, or private practice plus an additional Facilitator and Co-facilitator. A total of 76 participants enrolled in the program over the study period in addition to the 10 participants from the pilot program. Participant experience was evaluated with anonymous, voluntary surveys at baseline (59 responses), 6 months follow-up (37 responses), plus a one-off survey in August 2021 (50 responses). Pilot participant's Baseline and Follow-up surveys were not included in this evaluation.

Results: Survey responses were positive across the four Kirkpatrick training evaluation domains of reaction, learning, behavior, and results. Respondents reported positive change to clinical practice (98%), including increased confidence to implement evidence-informed guidelines, and improved engagement with, and advocacy for, ED clients. Service capacity to provide supervision was increased by high participant to Facilitator ratios (10 participants to one Facilitator and one Co-facilitator) and recruitment of external Facilitators. Respondents indicated they would recommend QuEDS FPS to other dietitians and 96% planned to continue with the program.

Conclusions: QuEDS FPS program increases capacity to provide supervision with demonstrated positive impacts on dietitians' confidence and ability to deliver dietetic interventions in the ED arena and, by inference, the dietetic care of people with an ED.

In 2021, Amanda Davis, Amy Hannigan, and Warren Ward of QuEDS, conducted a quality assurance project. They developed a supervision program for accredited Queensland dietitians aimed to target gaps identified by the recently published *ANZAED Practice and Training Standards for Dietitians Providing Eating Disorder Treatment*. This document recommended that training and professional skill development was required for dietitians working in eating disorders (ED) to better provide effective and evidence-based treatments.

To meet these recommendations, QuEDS developed an online, ED-specific, group supervision program which they evaluated over 12 months. This model of supervision was different to other models as it was completely online and grouped professionals with different levels of experience to facilitate the sharing of knowledge. After a successful pilot, a further four groups were run and evaluated through surveys targeting the acceptability and utility of the model, which were completed by the participants before the program and 6 months after. Further, to evaluate changes to clinical practice, a Learning and Clinical Practice survey was also administered.

The survey results were then interpreted using the Kirkpatrick Training Evaluation Framework. The Kirkpatrick Framework suggests four levels for effective training programs. The first level is reaction, which is refers to the how engaging and relevant the participants find the training. Secondly, learning refers to how participants take on knowledge and skills. Thirdly, behaviour see participants apply what they learned and lastly is the results of participation. The team at QuEDS used this model to evaluate their supervision program with overwhelmingly positive results. Some of the statements highly endorsed (80-100%) by participants in the surveys have been presented in *Figure 4*. Participants also noted some way in which they thought the program could be improved, for instance including individual sessions, and more time to discuss case studies.

The project has recently been published in the Journal of Eating Disorders as an open assess paper. If you are interested in reading the full paper, it is available here: https://rdcu.be/cQZmS. The QuEDS Facilitated Peer Supervision program is currently running 11 groups monthly on an ongoing basis. This is providing peer supervision to well over 100 dietitians. There are plans to continue to expand the program by recruiting and upskilling suitable Facilitators.

Participants reported that they felt safe, confident and supported in the program. They felt their confidentiality was maintained. The group setting had a positive impact on their confidence.

Through as self assessment process, participants reported that they had met their expectations for increasing their skills through the program. They now felt confident communicating and engaging with client's with eating disorders.

Reports showed participants now felt able to implement evidence based practice and guidelines for eating disorder. The program was also shown to increase most people's reflective practice.

Participants feel they now achieve more in their clinical work for ED. They felt supported and able to cope better with the stressors or working with clients with eating disorders.

Figure 4. *Statements highly endorsed by program participants.*

Family inclusive practice with adults affected by eating disorders – Dr Carmel Fleming on research and her PhD

Dr Carmel Fleming from the Queensland Eating Disorder Service (QuEDS) recently completed her PhD and has been appointed in a Conjoint position with the University of Queensland. We talked to Carmel about her recent activities to find out about her research:

Tell us about yourself, and how you came to start your PhD?

A long time ago I completed a Masters by research examining a guided self-help cognitive behavioural treatment approach for people affected by eating disorders. This was while I was working as a research assistant and clinician at a specialist eating disorders clinic at the University of Cambridge. The clinic had very long waiting lists so were investing a stepped-care approach. The low intensity treatment that was tested was found to work very well and is now used around the world. That was my first experience of how clinical research can be used in a pragmatic way to find solutions for real life problems. It was such a wonderful opportunity and encouraged me to approach problems that arose in my clinical work by asking ‘what can we do differently to improve things?’

In recent years the QuEDS service had received feedback from both patients and families that carers and other supports needed to be more included in the treatment programs we were running with adults we see with eating disorders. The service had no proactive way of doing this and instead was responding reactively and often only involving carers when there was a problem. We needed a solution that was sustainable and could feasibly be implemented in a service as busy as QuEDS. My PhD provided an opportunity to develop a program of research to investigate this issue. I examined what is already known about family inclusive treatment for adults and what would be a safe, low intensity option for routinely involving carers in the outpatient treatment program that was patient-centred and developmentally appropriate for our cohort. We also conducted a pragmatic trial of a brief structured family consultation method that had been used in other areas of equivalent serious adult mental illness to involve supports in the care of adults but that had not been used in adult eating disorder treatment programs.

Carmel has already had several publications from her PhD, including a book chapter and a peer reviewed journal article, with more to come.

How are families included in the treatment of adults affected by eating disorders? A scoping review:

Family-based treatment and active carer involvement is the standard in the treatment of eating disorders for children and adolescents, but this is not the case for adults. To fully understand why this was, Carmel examined the evidence base for family involvement in the outpatient treatment of adults and, together with colleagues from University of Queensland, undertook a scoping review of the existing literature on family inclusive treatment approaches for adults with eating disorders.

Following a structured set of steps to ensure the quality of the result, Carmel began by developing the research parameters, identifying a set of search terms, and then searching and assessing relevance of the literature identified. In Carmel’s review, of the 1,272 papers identified 68 were found that provided information about family involvement in adult eating disorder care. However, only a handful of these also included the adult patient. In addition, most were uncontrolled studies with very few using the experimental design required to build an evidence-base to support recommendations for how to implement a family inclusive treatment approach for adults. Despite this, Carmel and her team were able to draw a number of conclusions.

Firstly, family members of adults do appear to be willing to be involved in treatment when invited. Secondly, when eating disorder-specific psychoeducation and support is provided to carers it is effective at improving their wellbeing and reducing burden, although the research evidence regarding the benefits to adult clients is more limited. Thirdly, there was also little evidence that family inclusive practice with adults is being systemically implemented in the adult eating disorders field despite the fact that clinical treatment guidelines used around the world recommend this.

Another outcome of the scoping review process was that it highlighted the lack of research in this area and that further work is needed to both identify and test efficacious options for family involvement in the treatment of adults with eating disorders and to quantify the benefits. With these findings in mind, Carmel implemented and tested a single session family intervention at the QuEDS outpatient service. The process and results provided the subject of her PhD and the intervention has also been outlined in a recent book chapter.

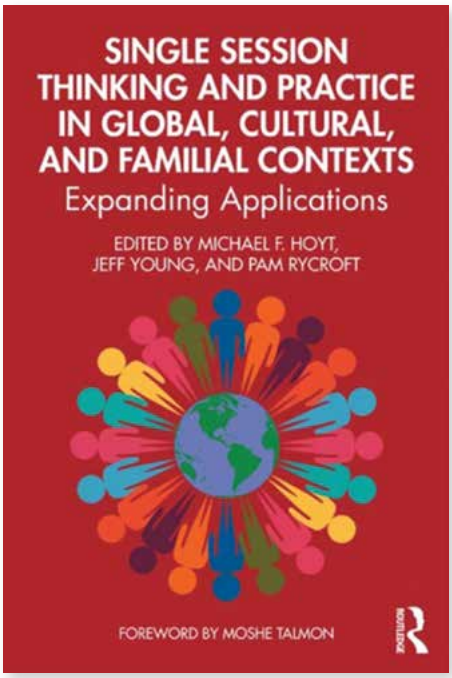
Single Session Family Consultation with Adults Affected by Eating Disorders.

Carmel's chapter, Single Session Family Consultation with Adults Affected by Eating Disorders, in *Single-session thinking and practice in global, cultural, and familial contexts: expanding applications* by Hoyt, Young and Rycroft (2021), describes the brief family intervention trialled at QuEDS which could accompany treatment-as-usual options for adults with eating disorders.

The intervention involved 4-points of contact:

1. An orientation session where information about the family involvement option was provided
2. A meeting between the client and the professional to discuss the family involvement
3. A single conjoint session with the family and client
4. A follow up process with the participants (during client's usual appointments or via phone or email with carers) two to four-weeks after the session.

The conjoint family meeting could be held with family of origin or family of choice and included 3 phases: convening, conducting, and concluding the session. The convening phase involved a process by which the pros and cons of family involvement are discussed with the client, getting the client to think about who to involve, and setting goals and clarifying areas of discussion (i.e., off-limit topics). Before the session, the client and carers/supports were asked to fill out pre-session forms to identify issues and concerns to be discussed in the session. During the conducting phase, a 90-minute joint meeting was held with the client, their supports, their individual therapist and the QuEDS family worker. During the session the issues identified by the participants were discussed in a structured way and concerns were explored to identify, negotiate, and prioritise needs, clarify roles, problem solve communication blocks, and develop next steps. In the concluding phase, the client is followed-up during their usual sessions and the supports contacted to check further needs and provide further information or resources if necessary.


SINGLE SESSION THINKING AND PRACTICE IN GLOBAL, CULTURAL, AND FAMILIAL CONTEXTS

Expanding Applications

EDITED BY MICHAEL F. HOYT, JEFF YOUNG, AND PAM RYCROFT

FOREWORD BY MOSHE TALMON

The implementation of the program was successful with approximately 70% of adults receiving outpatient therapy at QuEDS taking up the opportunity to participate. This was an increase from only one third in previous cohorts of patients at the clinic receiving the same treatments. Feedback from clients and carers was very positive and suggests the program was a safe and accessible method to approach relational concerns and psychosocial problems caused by eating disorders.

Both the quantitative and qualitative results of the trial are currently being reviewed for publication in the Journal of Eating Disorders. Carmel also presented the program of research at the Australian and New Zealand Academy of Eating Disorder national conference in August 2022. She has also been busy with a new role with the University of Queensland.

Some contributions from study participants regarding the need for and their experience of the brief family involvement method at the Queensland Eating Disorder Service:

> “We have been involved in {Patient’s} care with regard to eating disorders for 11 years or longer, 12 years now, and it’s probably the first time that our input has been respected... but this was the first time I have certainly felt that our input has been welcomed, and that there have been things set in place... to facilitate our involvement in {Patient’s} recovery.” – *Mother of a 29 year old patient with Bulimia Nervosa*

> “It was really beneficial and I mean a lot of things that we still do kind of came out of that... it was good to be able to actually focus on one thing and come to a conclusion of how we can work on it outside of QuEDS and it's something that we keep doing now. Every Thursday at about four we still sit down and talk about everything that {Patient} gone through that week, anything in the past that kind of come back up, slipping into bad habits kind of thing and yeah, I guess we just talk about other general communication things that you kind of miss out on when you avoid it sometimes.” – *Partner of a 21 year old patient with Bulimia Nervosa*

> “We found it really helpful that the session was really structured so that {Clinician} was really sure to set everything up at the beginning, and be very defined in what we would be addressing in the session, what we would aim to get out of it, that sort of thing. So, having that structure, what are the goals of the session, and then working through each of the points that were laid out, and then being able to wrap it up at the end, and have a list of outcomes was really helpful, and I guess it made it a lot less stressful because just knowing what was coming up was really comforting in a way.” – *28 year old patient with Atypical Anorexia Nervosa*

You have recently been appointed to a Conjoint position as Clinical Academic with the School of Nursing, Midwifery and Social Work at UQ and Queensland Health. What does this look like for you?

At the moment, I share my time 50/50 between QuEDS and UQ so it’s a very full week. I teach a course for 4th year undergraduates and social work Masters students in Advanced Practice in Health and Ageing in the first half of the week which I enjoy. Then it’s back to QuEDS in my role as Senior Social Worker, educator, and clinical supervisor. QuEDS is involved in many applied research projects and are looking to increase our service evaluation measures so hopefully the second half of the year will mean we are able to combine these interests with the research resources at UQ. I hope to continue to find practice-based problems and research questions that we can work on with flexible thinking to find pragmatic solutions and improve our service response to clients with these difficult and sometimes devastating disorders.

Physical Health

Introduction by A/Prof Kylie Burke, Principal Research Fellow.

A/Prof Kylie Burke
Principal Research Fellow
Metro North Mental Health Service

Metro North Mental Health has historically had a strong focus on the physical health of our consumers, and this is often reflected in the research conducted. Back in 2012, the Let's Get Physical initiative gave us a greater understanding of the oral health of people with mental illness and sought to improve access to care and outcomes for consumers.

In 2020, the RBWH community mental health team piloted a Dietitian led clinic at the Valley Mental Health Service. Led by dietician, Cassandra Benson, the clinic aimed to close the physical health gap associated with increased morbidity for consumers by addressing the diets of people with severe mental illness. The clinic provided dietetic advice via a structured evidence-informed intervention for outpatient consumers with severe mental illness. The program saw 26 consumers and another 14 were placed on a wait list. Consumers who attended all sessions over the 3-month pilot period experienced stabilisation of their weight, with some losing up to 6kg.

The impacts of the pandemic on physical health have also been investigated. In this area, we often collaborate with our research partners at QIMR Berghofer Medical Research Institute, Metro South Addiction and Mental Health Services, University of Queensland, Queensland Alliance for Mental health, Richmond Fellowship, and University of Melbourne. These partnerships saw the publication of two papers in 2021 relating to the physical health, psychosocial distress, and the wellbeing of people with mental illness as they navigate the changes brought on by the pandemic. A summary of these papers has been included in this year's review.

A key focus in physical health research investigates how medication can improve the physical health of people with serious mental illness. In 2021, two projects took this focus. Firstly, Aislinn Kennedy from MNMH's Clinical Pharmacy Department undertook a quality improvement project to audit the uptake of melatonin supplements, which is often used to aid sleep, on our wards. Secondly, a number of MNMH staff contributed to the CoMET trial, looking at the benefits of co-commencing metformin with clozapine to mitigate weight gain, a common side effect of clozapine. You can read more about how melatonin is used on our wards and the outcomes of the CoMET trial in this section.

Limiting and addressing effects of medical treatment on the physical health of consumers is an important priority for MNMH. This year members of our medical team focused on the effects of clozapine on the heart with two scholarly projects completed in the form of a scoping review by Dr Mark Vickers and Dr Vinay Ramineni. The review resulted in recommendations aimed to reduce the risk of myocarditis through the temporary cessation of sodium valproate during the initial titration phase of clozapine. The peer-reviewed paper that resulted from the project is featured in this review and provides more details on this topic. This section concludes with an interview with Dr Mark Vickers and highlights the importance of an ongoing commitment to physical health research as well as his new research focus into sexual health for mental health consumers.

With a strong history behind us, we look forward to the work to be produced by staff in this area.

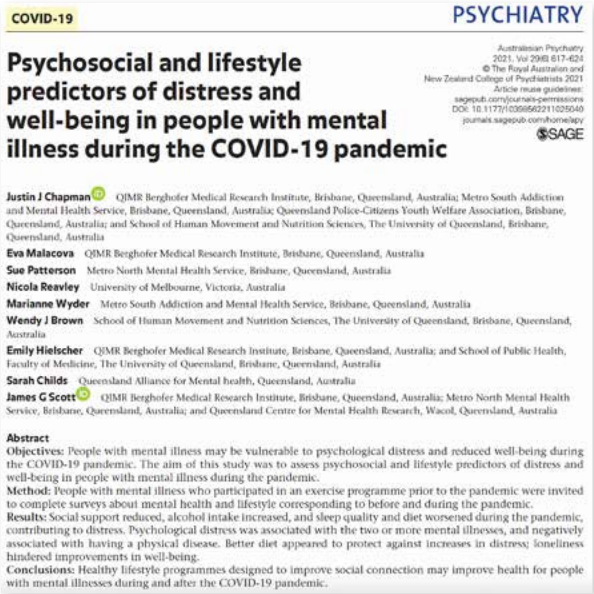
The Impact of COVID-19 on Physical Health and Wellbeing

People with multiple mental illnesses are particularly vulnerable to psychological distress. They are also likely to have multiple medical conditions that reduce quality of life and increase the distress being felt due to the pandemic and the social restrictions designed to stop the spread. Prof James Scott and A/Prof Sue Patterson were part of a collaborative team led by Justin Chapman from QIMR Berghofer Medical Research Institute and in partnership with The University of Queensland, the University of Melbourne, Metro South, and the Queensland Alliance of Mental Health. The research team undertook a longitudinal study in an effort to better understand factors that predict distress in people with mental illness and to plan effective interventions to support physical health. The team published two papers from this work in 2021. Participants in the study were consumers who prior to the pandemic, had participated in an exercise program prior to the pandemic.

Psychosocial and Lifestyle predictors of distress and wellbeing in people with mental illness during the COVID-19 Pandemic.

The focus of the first study was to understand the psychosocial and lifestyle factors that predict distress and wellbeing for people with mental illness during the pandemic. The participants were assessed for psychological distress, wellbeing, loneliness, resilience and coping, social support, alcohol use, physical activity, smoking, sleep, and diet at three time points before and during the pandemic. The data collected during the pandemic coincided with tight social restrictions meaning that participants were required to stay at home except for essential reasons.

The research team found that although lifestyle change factors such as alcohol consumption, sleep, diet and social supports contributed to experiences of distress, having two or more mental illnesses was associated with greater distress. Greater social supports, resilience, sleep quality and diet were protective against distress during the pandemic. The authors suggested that healthy lifestyle programs that aim to increase social connectedness could be helpful for people with multiple mental illnesses to improve their health post pandemic.



COVID-19

PSYCHIATRY

Psychosocial and lifestyle predictors of distress and well-being in people with mental illness during the COVID-19 pandemic

Australasian Psychiatry
2021, Vol 29(6) 617-624
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James G Scott QIMR Berghofer Medical Research Institute, Brisbane, Queensland, Australia; Metro North Mental Health Service, Brisbane, Queensland, Australia; and Queensland Centre for Mental Health Research, Wacol, Queensland, Australia

Abstract

Objectives: People with mental illness may be vulnerable to psychological distress and reduced well-being during the COVID-19 pandemic. The aim of this study was to assess psychosocial and lifestyle predictors of distress and well-being in people with mental illness during the pandemic.

Method: People with mental illness who participated in an exercise programme prior to the pandemic were invited to complete surveys about mental health and lifestyle corresponding to before and during the pandemic.

Results: Social support reduced, alcohol intake increased, and sleep quality and diet worsened during the pandemic, contributing to distress. Psychological distress was associated with the two or more mental illnesses, and negatively associated with having a physical disease. Better diet appeared to protect against increases in distress; loneliness hindered improvements in well-being.

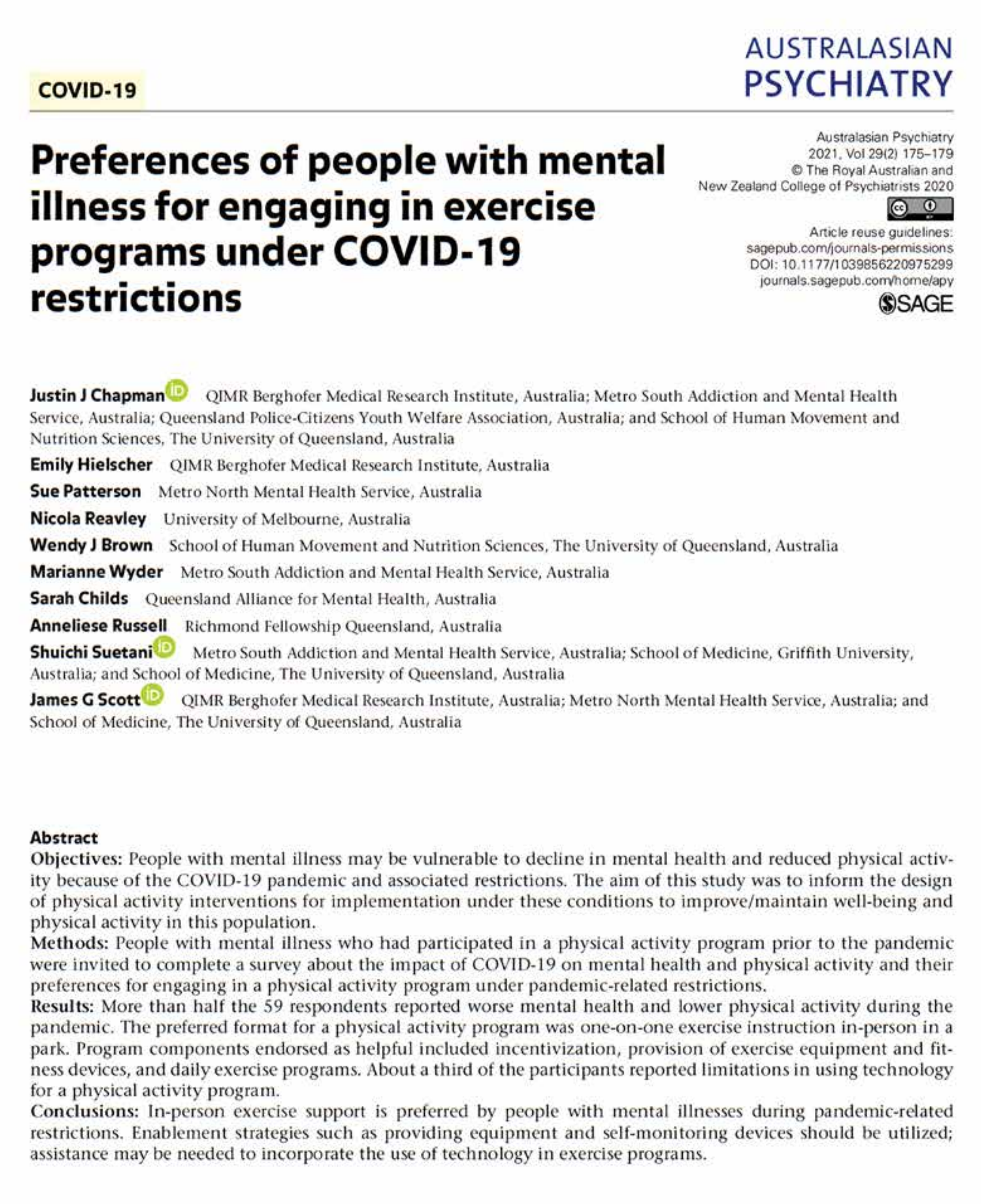
Conclusions: Healthy lifestyle programmes designed to improve social connection may improve health for people with mental illnesses during and after the COVID-19 pandemic.

Preferences of people with Mental Illness engaging in Exercise Programs under COVID-19 Restrictions.

The focus of the second paper was to gather information that would inform the design of an intervention that could reduce the risk of decline in mental and physical health related to the restrictions imposed by the pandemic. Specifically, the study explored the physical exercise preferences of consumers. The cross-sectional survey of 59 people found that most participants lacked access to equipment. Many of them did not have a pedometer, fitness tracker or equipment for aerobic or resistance exercise.

People were exercising less than they were before the pandemic and reported that they were not exercising as much as they wanted to. Most participants were not confident exercising on their own. Of those with an internet connection, 26% and 30% were not confident finding exercise videos or using exercise related apps, respectively. The most preferred exercise option was outdoor instruction in a park.

The authors concluded that, during lockdowns, physical activity can be promoted by providing additional support to use smart phone or internet resources to foster home exercise and by providing consumers with exercise equipment and professional instruction.



COVID-19

AUSTRALASIAN
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Preferences of people with mental illness for engaging in exercise programs under COVID-19 restrictions

Australasian Psychiatry
2021, Vol 29(2) 175–179

DOI: 10.1177/1039856220975299
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James G Scott QIMR Berghofer Medical Research Institute, Australia; Metro North Mental Health Service, Australia; and School of Medicine, The University of Queensland, Australia

Abstract

Objectives: People with mental illness may be vulnerable to decline in mental health and reduced physical activity because of the COVID-19 pandemic and associated restrictions. The aim of this study was to inform the design of physical activity interventions for implementation under these conditions to improve/maintain well-being and physical activity in this population.
Methods: People with mental illness who had participated in a physical activity program prior to the pandemic were invited to complete a survey about the impact of COVID-19 on mental health and physical activity and their preferences for engaging in a physical activity program under pandemic-related restrictions.
Results: More than half the 59 respondents reported worse mental health and lower physical activity during the pandemic. The preferred format for a physical activity program was one-on-one exercise instruction in-person in a park. Program components endorsed as helpful included incentivization, provision of exercise equipment and fitness devices, and daily exercise programs. About a third of the participants reported limitations in using technology for a physical activity program.
Conclusions: In-person exercise support is preferred by people with mental illnesses during pandemic-related restrictions. Enablement strategies such as providing equipment and self-monitoring devices should be utilized; assistance may be needed to incorporate the use of technology in exercise programs.

Melatonin in Adolescents – Option to Reduce Sedating Medications?

Aislinn Kennedy
Clinical Pharmacist
Metro North Mental Health Service

In December 2020, approval was granted by the RBWH Medicines Advisory Committee to trial the use of Melatonin within the adolescent mental health wards at the RBWH. There was anecdotal evidence that, to avoid using Benzodiazepines, 'off label' usage of sedating medications is used in adolescent inpatient populations. 'Off label' usage of medication means to use the medication in a manner which is not provided for by the approved product information. The use of medications in this way can have side effects, therefore guidelines in this area suggest that other pharmacological interventions may be necessary to manage insomnia and sleep disturbances. In these instances, Melatonin use over a short period is preferred.

The approval of melatonin use prompted Aislinn Kennedy, with assistance from Minnie Park, Clinical Pharmacists, both with the Mental Health Pharmacy Department, to conduct a retrospective quality assurance activity that aimed to evaluate the use of Melatonin within the adolescent mental health wards. She wished to determine the benefits, if any, of approving the ongoing use of Melatonin. Aislinn assessed the use of melatonin based on cost, reductions of other 'off label' medications, and the number of patients taking melatonin.

Of the 105 patients admitted to the adolescent wards during the evaluation period, 42 patients were prescribed melatonin. Twenty-two consumers started on melatonin prior to admission thus prescription on the ward avoided abrupt discontinuation of therapy. Twenty consumers commenced melatonin during admission. This was said to be beneficial for patients as it allowed them to trial melatonin whilst an inpatient which further allowed them and their carers to make an informed decision on the benefits, and whether they would continue using melatonin past discharge.

Aislinn recommended that a further review of off-label medication use would be beneficial to better understand how it is being used for insomnia and sleep disturbances. Reductions in the use of some 'off label' sedating medications such as olanzapine, quetiapine, diazepam, oxazepam, and mirtazapine were observed. However, there were increases in other 'off label' sedating medications including clonazepam, promethazine, and lorazepam. It is not clear if these changes were related to insomnia or other patient needs such as Acute Behavioural Disturbance Management or the management of substance misuse. This would require a review of patient charts which was not within the scope of the current project.

This project was presented to the Medicines Advisory Committee in September 2021 to inform the decision-making process regarding whether to approve the use of melatonin on an ongoing basis. After presentation at the Medicines Advisory Committee, melatonin was approved for use on all RBWH inpatient wards.

We asked Aislinn for a comment about the project, and its practical implications:

"This project was a great introduction into quality improvement projects. As a junior pharmacist, it allowed me to gain some insight into how medications are approved by hospital committees and to start considering simple ways to improve the continuity of care for my patients. Moving forward, it would be interesting to see how the 'off-label' medications are being used within the adolescent unit and to evaluate the impact of the hospital wide melatonin approval. I really enjoyed completing this project and I am in the process of completing an audit of zuclopenthixol acetate usage within the RBWH Mental Health inpatient units."

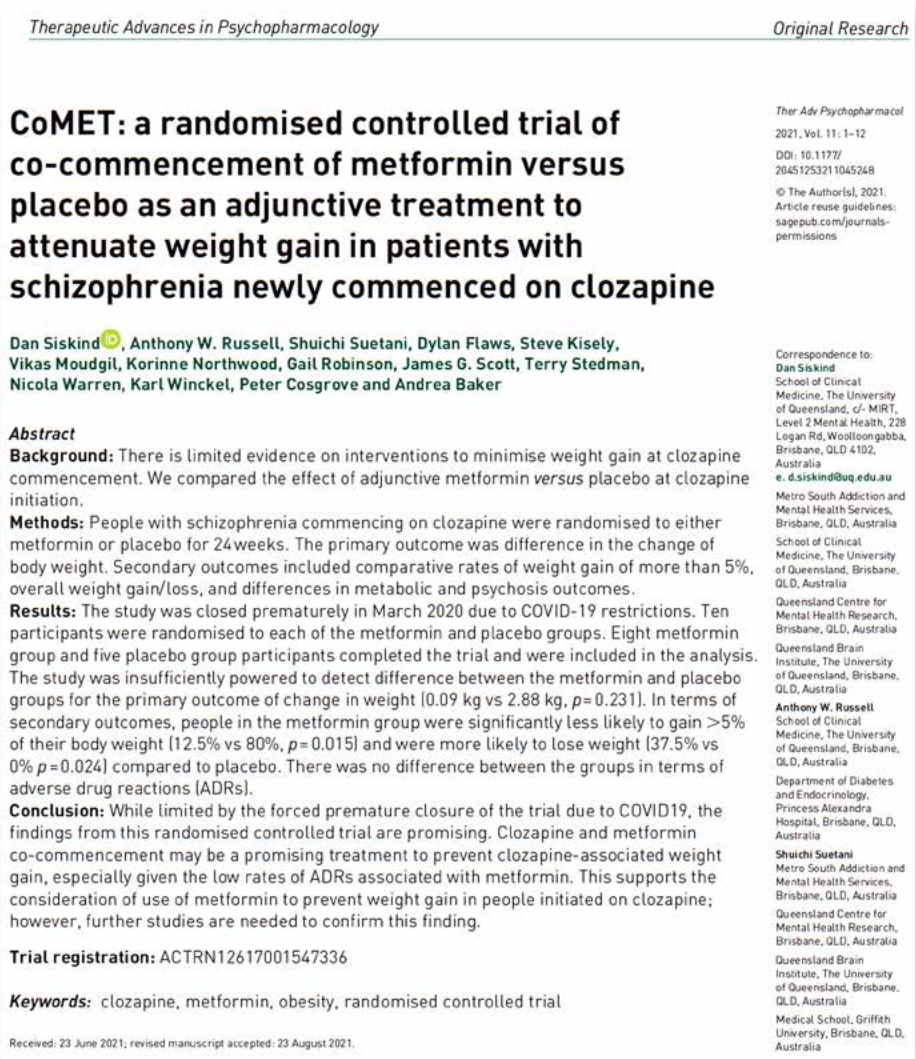
CoMET: a randomised controlled trial of co-commencement of metformin versus placebo as an adjunctive treatment to attenuate weight gain in patients with schizophrenia newly commenced on clozapine

Clozapine is the most effective medication to reduce positive symptoms, hospitalisation, and overall mortality for people with treatment refractory schizophrenia, however, Clozapine is also associated with increased weight. There is limited evidence about how weight-gain can be prevented when commencing Clozapine, and no randomised controlled trials have occurred to investigate that potential for Metformin to help prevent weight gain.

This trial saw participants randomly allocated to receive either Metformin or a placebo when starting on Clozapine. The trial team also measured the difference in weight at the end of the 24-week trial compared to the baseline measurement.

Recruitment for the trial concluded prematurely due to COVID-19 with a total of 20 people consenting to participate in the study (10 to metformin, and 10 to placebo). However, due to various reasons, 8 metformin and 5 placebo participants finished the trial.

Although they were not able to meet their recruitment targets, the results showed that, compared to the placebo groups, those in the metformin group where significantly less likely to gain more than 5% of their body weight. A properly powered study, needs to occur before these results can be interpreted with confidence. However, these preliminary results are in line with previous research and show promise for future research of Metformin use to prevent weight gain when starting Clozapine.



Therapeutic Advances in Psychopharmacology

Original Research

Ther Adv Psychopharmacol
2021, Vol. 11: 1–12
DOI: 10.1177/20451253211045248

CoMET: a randomised controlled trial of co-commencement of metformin versus placebo as an adjunctive treatment to attenuate weight gain in patients with schizophrenia newly commenced on clozapine

Dan Siskind, Anthony W. Russell, Shuichi Suetani, Dylan Flaws, Steve Kisely, Vikas Moudgil, Korinne Northwood, Gail Robinson, James G. Scott, Terry Stedman, Nicola Warren, Karl Winckel, Peter Cosgrove and Andrea Baker

Abstract
Background: There is limited evidence on interventions to minimise weight gain at clozapine commencement. We compared the effect of adjunctive metformin *versus* placebo at clozapine initiation.
Methods: People with schizophrenia commencing on clozapine were randomised to either metformin or placebo for 24 weeks. The primary outcome was difference in the change of body weight. Secondary outcomes included comparative rates of weight gain of more than 5%, overall weight gain/loss, and differences in metabolic and psychosis outcomes.
Results: The study was closed prematurely in March 2020 due to COVID-19 restrictions. Ten participants were randomised to each of the metformin and placebo groups. Eight metformin group and five placebo group participants completed the trial and were included in the analysis. The study was insufficiently powered to detect difference between the metformin and placebo groups for the primary outcome of change in weight (0.09 kg vs 2.88 kg, $p = 0.231$). In terms of secondary outcomes, people in the metformin group were significantly less likely to gain >5% of their body weight (12.5% vs 80%, $p = 0.015$) and were more likely to lose weight (37.5% vs 0% $p = 0.024$) compared to placebo. There was no difference between the groups in terms of adverse drug reactions (ADRs).
Conclusion: While limited by the forced premature closure of the trial due to COVID19, the findings from this randomised controlled trial are promising. Clozapine and metformin co-commencement may be a promising treatment to prevent clozapine-associated weight gain, especially given the low rates of ADRs associated with metformin. This supports the consideration of use of metformin to prevent weight gain in people initiated on clozapine; however, further studies are needed to confirm this finding.

Trial registration: ACTRN12617001547336

Keywords: clozapine, metformin, obesity, randomised controlled trial

Received: 23 June 2021; revised manuscript accepted: 23 August 2021.

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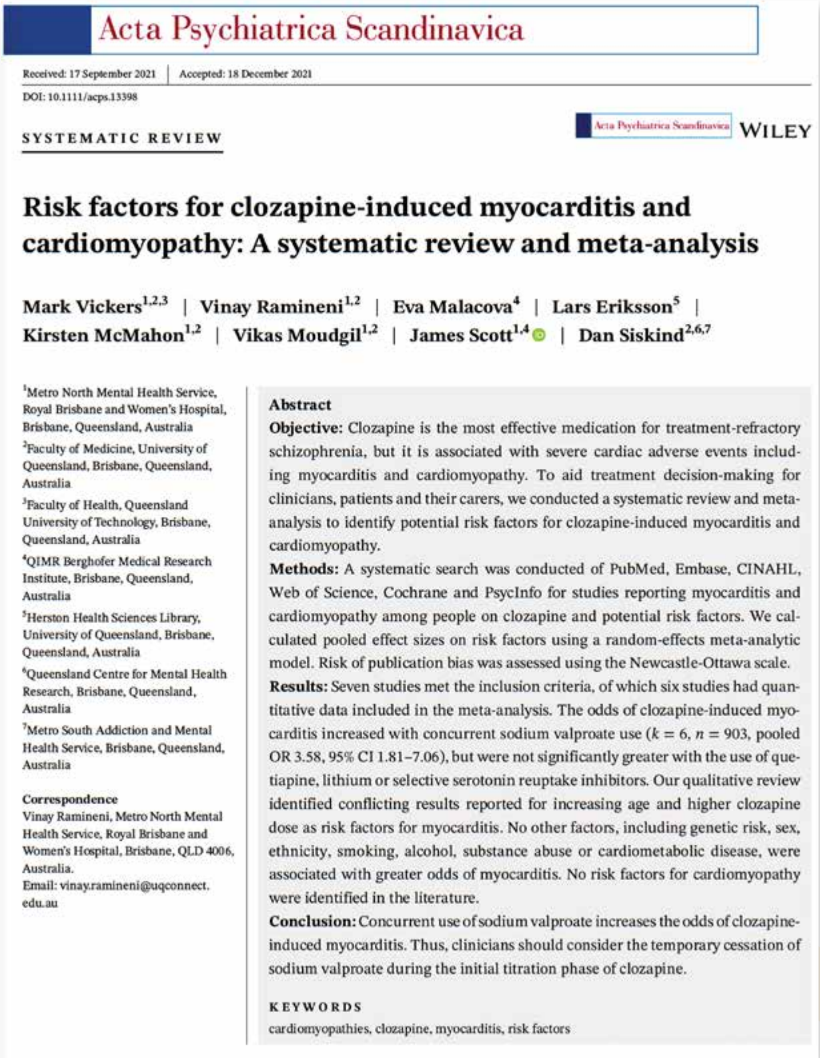
Risk factors for clozapine induced myocarditis and cardiomyopathy: systematic review and meta-analysis

Schizophrenia is a devastating disease that can lead to high levels of impairment and suffering for patients and their loved ones. Unfortunately, up to 30% of people with schizophrenia do not respond to first line or even second line treatments and are considered treatment resistant. In this group the most effective medication is clozapine. Clozapine is commonly used in clinical practice and while it often produces dramatic improvements in quality of life it also comes with the additional burden of regular blood tests and side effect risks. One well recognized and potentially lethal side effect is inflammation of the heart, known as myocarditis. A further rare side effect is chronic enlargement and dysfunction of the heart known as cardiomyopathy.

At the Royal Brisbane and Women's Hospital a team of researchers, including Prof James Scott, Dr Mark Vickers, Dr Vinay Ramineni, Dr Kirsten McMahon, and Dr Vikas Moudgil from MNMH and colleagues from QIMR Berghofer Medical Research Institute have recently completed the first meta-analysis looking at risk factors for myocarditis and cardiomyopathy in patients using clozapine. The project aimed to synthesize the current evidence and enhance knowledge on this topic to improve patient selection, clozapine monitoring and treatment regimens. The team screened over 2,400 existing studies from seven medical databases. Data was pooled on 192 cases of clozapine induced myocarditis and 1,214 controls from seven existing studies. Over 50 risk factors were considered, including clozapine dose, age, gender, weight, ethnicity, smoking, cardiovascular disease, diabetes, and concurrent medications.

The research team found that concurrent sodium valproate use was significantly associated with increased odds of myocarditis. They found some evidence indicating higher clozapine dose and increasing age may also be associated with increased risk though this was conflicting. Interestingly, the project found that several factors which have anecdotally been considered as risk factors (e.g., gender, ethnicity, smoking, substance abuse, alcohol use, and cardiometabolic disease) were not associated with myocarditis. Almost no existing evidence was found on risks for cardiomyopathy. The research team were able to make a clear clinical recommendation based on this high-level evidence that to reduce the risk of myocarditis clinicians should consider the temporary cessation of sodium valproate during the initial titration phase of clozapine.



Acta Psychiatrica Scandinavica

Received: 17 September 2021 | Accepted: 18 December 2021

DOI: 10.1111/acps.13398

SYSTEMATIC REVIEW

Acta Psychiatrica Scandinavica WILEY

Risk factors for clozapine-induced myocarditis and cardiomyopathy: A systematic review and meta-analysis

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Abstract

Objective: Clozapine is the most effective medication for treatment-refractory schizophrenia, but it is associated with severe cardiac adverse events including myocarditis and cardiomyopathy. To aid treatment decision-making for clinicians, patients and their carers, we conducted a systematic review and meta-analysis to identify potential risk factors for clozapine-induced myocarditis and cardiomyopathy.

Methods: A systematic search was conducted of PubMed, Embase, CINAHL, Web of Science, Cochrane and PsycInfo for studies reporting myocarditis and cardiomyopathy among people on clozapine and potential risk factors. We calculated pooled effect sizes on risk factors using a random-effects meta-analytic model. Risk of publication bias was assessed using the Newcastle-Ottawa scale.

Results: Seven studies met the inclusion criteria, of which six studies had quantitative data included in the meta-analysis. The odds of clozapine-induced myocarditis increased with concurrent sodium valproate use ($k = 6$, $n = 903$, pooled OR 3.58, 95% CI 1.81–7.06), but were not significantly greater with the use of quetiapine, lithium or selective serotonin reuptake inhibitors. Our qualitative review identified conflicting results reported for increasing age and higher clozapine dose as risk factors for myocarditis. No other factors, including genetic risk, sex, ethnicity, smoking, alcohol, substance abuse or cardiometabolic disease, were associated with greater odds of myocarditis. No risk factors for cardiomyopathy were identified in the literature.

Conclusion: Concurrent use of sodium valproate increases the odds of clozapine-induced myocarditis. Thus, clinicians should consider the temporary cessation of sodium valproate during the initial titration phase of clozapine.

KEYWORDS
cardiomyopathies, clozapine, myocarditis, risk factors

Researching Physical and Sexual Health in People with Severe Mental Illness

Dr Mark Vickers from the early psychosis unit has taken a focus on physical health in his research and recent scholarly project. We wanted to know about the research landscape in this area, and where his research is taking him.

Dr Mark Vickers
Psychiatry Registrar
Metro North Mental Health Service

What brought you to psychiatry and to research?

I was in the Army as a medic before I came to the Royal. It was here that I undertook my first research project with the RBWH Burns Unit. This was a very positive, collaborative experience for me. I kept doing more research projects. I think that I caught the bug. I then moved into psychiatry where I found the research to be even more interesting.

You've just done you Scholarly project on risk factors for clozapine induced myocarditis and cardiomyopathy, why was that important?

I just completed my scholarly project doing a scoping review looking at Clozapine and its effects on the heart, specifically myocarditis and cardiomyopathy, which has been featured in this review. I co-authored this paper with Dr Vinay Ramineni. In our service there are numerous patients who have developed myocarditis while on clozapine. These patients usually are then unable to continue this very effective medication. Our research provides some guidance on how to reduce the risk of myocarditis for future patients.

What are your future research plans?

Some of the research team had started to notice that there was a deficit of research about sexual health in young people with psychotic disorders, it's still a bit of a taboo subject that gets glossed over and not talked about. So, we did a scoping review looking at sexual and reproductive health in the mental health sphere. What we found was that young people with early psychosis are at higher risk of sexually transmitted infection and more likely to engage in risky sexual activity. There are public health implications to this, in terms of blood borne viruses and sexually transmitted diseases among an already vulnerable group. The evidence suggests the risk is related to impaired judgement in psychosis.

This is a really important area because it is under treated and underrepresented in the literature. It just isn't talked about. We also found that rates of unplanned pregnancy are high among young women with psychotic disorders. Unplanned pregnancies in women with psychosis can lead to poor maternal outcomes and has flow on effects for the next generation in terms of poor child health outcomes as well. We have just finished writing this up and we hope to see it published soon.

Now that we have the results of the review, the plan is to do a sexual health project within the Early Psychosis unit, looking at things like sexual behaviour, contraception access and use, how people access sexual health services and other risk factors. Over the next 3 years we are hoping to run the project collaboratively with the RBWH and the Toowoomba Hospital as well.

Young People

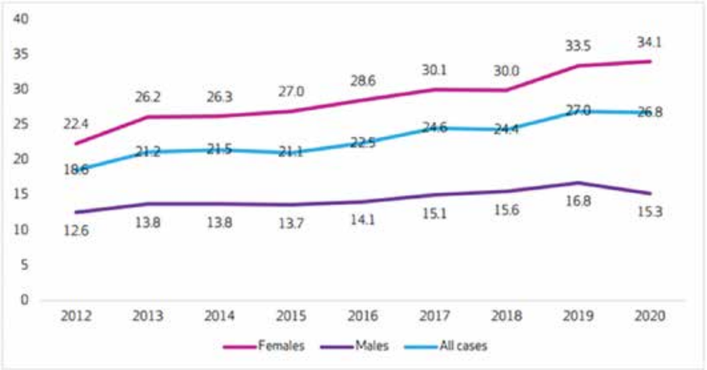
Prof James Scott
Director of Research;
Director of Early Psychosis Team
Metro North Mental Health Service

Introduction by Prof James Scott (Director of Research; Director, Early Psychosis).

There has been a rise in mental ill health in Australian youth. For example, Mission Australia in their National Survey of young people aged 15-19 years have shown a steady increase in the prevalence of anxiety and depression *(see Figure 5)*. Between 2012 and 2020, there has been a 44% rise in young people reporting high scores of psychological distress in the previous month, indicative of likely to have a mental disorder (anxiety or depression) increasing from 18.8% to 26.8% *(see Figure 5)* (Brennan et al., 2021). Adolescent females in particular are disproportionately affected, a finding which was first reported in 2014 (Bor et al., 2014). Whilst there are many proposed reasons for the rise in mental health problems in young people (i.e., social media, family breakdown, drug and alcohol use, increase educational pressures etc), there is no widely accepted and plausible explanation. Importantly, the rise in mental health problems preceded the pandemic and was occurring before the proliferation of social media. Equally importantly, the rise in mental health problems in young people is not evident globally but rather varies from country to country with some countries reporting a reduction in mental health problems in their young population (Biswas et al., 2020).

While population-based approaches that encompass universal prevention, early intervention and selected and targeted interventions are needed to address the worsening state of mental health for young Australians, the tertiary public mental health sector has a critical role. Public mental health services are uniquely placed in the spectrum of mental health care delivery to focus on young people with serious and complex mental illness from early adolescence through to emerging adulthood. As this is the clinical population for which our mental health service has primacy of responsibility, research efforts directed towards improving clinical care should be a priority for Metro North Mental Health.

MNMH incorporates a number of services for youth, including a dedicated adolescent inpatient unit at RBWH, a Child and Youth Mental Health Service providing community -based outpatient care for young people in the Caboolture catchment and Youth Step Up Step Down Unit service (a sub-acute, community-based rehabilitative residential program for young people aged 16 to 21 years of age). In addition, our teams have developed specialist services to support young people experiencing early psychosis and our Queensland Eating Disorder service provides specialised care for young people. MNMH has a long history of clinical research in adolescents and young adults which have been highly influential in clinical care. Research has taken a strong focus on the important role of trauma in psychosis and MNMH has produce a number of landmark studies. Almost two decades ago on the adolescent inpatient unit at RBWH, two Fellowship dissertations (similar to scholarly projects) were conducted that showed that the hallucinations of adolescents with PTSD (primarily from sexual violence) were indistinguishable from the hallucinations experienced by adolescents with psychotic disorders (Jessop et al., 2008; Scott et al., 2007). Another project, funded by the RBWH foundation, demonstrated that 90% of consumers with early psychosis had experienced child maltreatment, and the severity of maltreatment correlated with symptoms of psychosis (Dughig et al., 2015). These studies emphasised the need for trauma informed care and psychological treatments for trauma in people living with psychosis.



Female sample who answered K6: 2012 n=8,991, 2013 n=8,203, 2014 n=8,029, 2015 n=10,209, 2016 n=11,317, 2017 n=13,412, 2018 n=15,003, 2019 n=13,546 and 2020 n=13,307
Male sample who answered K6: 2012 n=5,613, 2013 n=5,614, 2014 n=5,061, 2015 n=8,168, 2016 n=9,162, 2017 n=9,117, 2018 n=11,164, 2019 n=9,711 and 2020 n=9,701

Figure 5: *Psychological Distress in Young People in Australia aged 15-19 years from 2012 to 2020*

Currently, planning is underway to better meet the needs of young people in the MNHS. Alongside this, opportunities will arise across MNMH to undertake research into young people with severe and complex health problems. Physical and mental health problems share many of the same risk factors and social determinants and therefore commonly co-occur. Health service research that improves holistic health care for these young people will be critical to improving clinical outcomes. In the years ahead, MNMH is ideally placed to lead this research.

In this section we are pleased to highlight some of the work MNMH clinicians have undertaken in 2021 to better understand mental illness in young people. Dr Emily Hielscher, from QIMR Berghofer Medical Research Institute, completed her PhD under the supervision of Metro North's Prof James Scott, using data collected from over 1000 adolescents in Australian Schools. Her research has identified unique risk factors for suicide and assisted in understanding the psychosis spectrum of illness. Dr Ed Heffernan's leading research work was acknowledged with the awarding of an NHMRC Indigenous Health Research grant. He leads a team which aims to improve mental health, and social and emotional wellbeing outcomes and to prevent reincarceration of young Aboriginal and Torres Strait Islander people in the criminal justice system. Finally, the Youth Step Up Step Down facility provides an alternative less restrictive option for young people requiring mental health support of an intensity that is beyond what can be delivered in standard community services. An interview with Team Leader Sharon Gordon is featured explaining this service and a recent project that explored stakeholder perspectives on the purpose and expected outcomes from the service.

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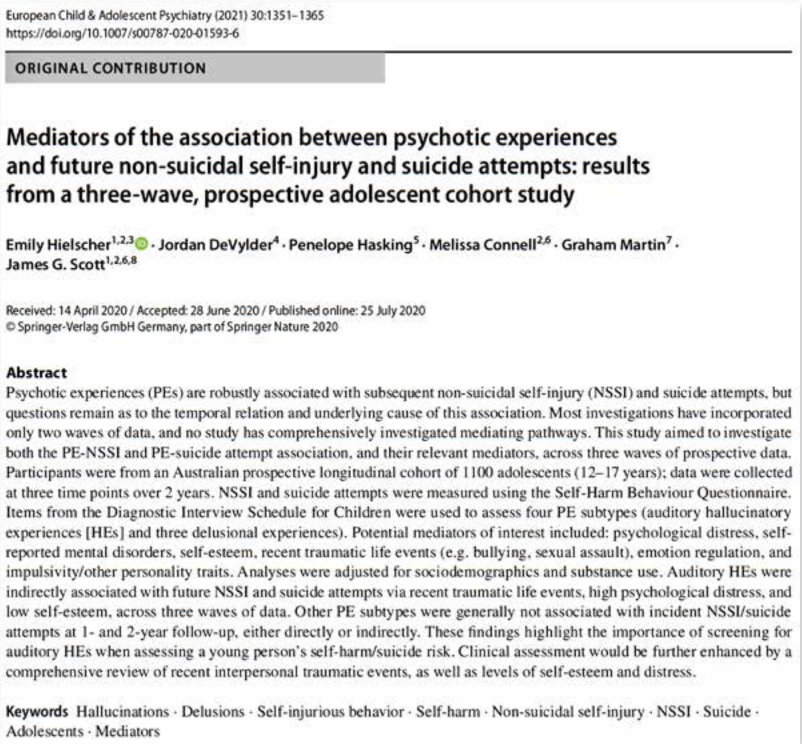
Psychotic experiences and suicidality in young people

The HEALing (Helping to Enhance Adolescent Living) Project was a longitudinal study conducted more than a decade ago which gathered data from 1,239 Australian high school students aged between 12-17 years over 3 years. Led by Professors Graham Martin and Penelope Hasking, the HEALing study provided a rich dataset available to researchers to better understand suicidality in Australian adolescents. When the study was designed, Metro North's Professor James Scott requested that measures of psychotic experiences were collected. The inclusion of these measures has provided a unique understanding of the interplay between psychotic experiences, non-suicidal self-injury and suicide attempts.

Psychotic experiences, which are often broken down into hallucinatory and delusional experiences, are particularly common during adolescence. They can be a warning sign for a range of poor health outcomes in young people, including self-injurious and suicidal behaviour. Professor Scott and Dr Melissa Connell (Clinical Psychologist) supervised Dr Emily Hielscher as she completed her remarkable PhD investigating in-depth the nature of the psychotic experience-suicidality relationship. These HEALing project findings have been published in a series of articles.

Mediators of the association between psychotic experiences and future non-suicidal self-injury and suicide attempts: results from a three-wave, prospective adolescent cohort study.



European Child & Adolescent Psychiatry (2021) 30:1351–1365
https://doi.org/10.1007/s00787-020-01593-6

ORIGINAL CONTRIBUTION

Mediators of the association between psychotic experiences and future non-suicidal self-injury and suicide attempts: results from a three-wave, prospective adolescent cohort study

Emily Hielscher[1,2,3] · Jordan DeVylder[4] · Penelope Hasking[5] · Melissa Connell[2,6] · Graham Martin[7] · James G. Scott[1,2,6,8]

Received: 14 April 2020 / Accepted: 28 June 2020 / Published online: 25 July 2020

Abstract

Psychotic experiences (PEs) are robustly associated with subsequent non-suicidal self-injury (NSSI) and suicide attempts, but questions remain as to the temporal relation and underlying cause of this association. Most investigations have incorporated only two waves of data, and no study has comprehensively investigated mediating pathways. This study aimed to investigate both the PE-NSSI and PE-suicide attempt association, and their relevant mediators, across three waves of prospective data. Participants were from an Australian prospective longitudinal cohort of 1100 adolescents (12–17 years); data were collected at three time points over 2 years. NSSI and suicide attempts were measured using the Self-Harm Behaviour Questionnaire. Items from the Diagnostic Interview Schedule for Children were used to assess four PE subtypes (auditory hallucinatory experiences [HEs] and three delusional experiences). Potential mediators of interest included: psychological distress, self-reported mental disorders, self-esteem, recent traumatic life events (e.g. bullying, sexual assault), emotion regulation, and impulsivity/other personality traits. Analyses were adjusted for sociodemographics and substance use. Auditory HEs were indirectly associated with future NSSI and suicide attempts via recent traumatic life events, high psychological distress, and low self-esteem, across three waves of data. Other PE subtypes were generally not associated with incident NSSI/suicide attempts at 1- and 2-year follow-up, either directly or indirectly. These findings highlight the importance of screening for auditory HEs when assessing a young person's self-harm/suicide risk. Clinical assessment would be further enhanced by a comprehensive review of recent interpersonal traumatic events, as well as levels of self-esteem and distress.

Keywords Hallucinations · Delusions · Self-injurious behavior · Self-harm · Non-suicidal self-injury · NSSI · Suicide · Adolescents · Mediators

The first of these published articles sought to investigate potential mediators of the relationship between psychotic experiences, such as auditory hallucinations, and future non-suicidal self-injury and suicide attempts. The research team examined the mediating effects of psychological distress, self-reported mental disorders, self-esteem, recent traumatic experiences, emotion regulation, and impulsivity on this relationship.

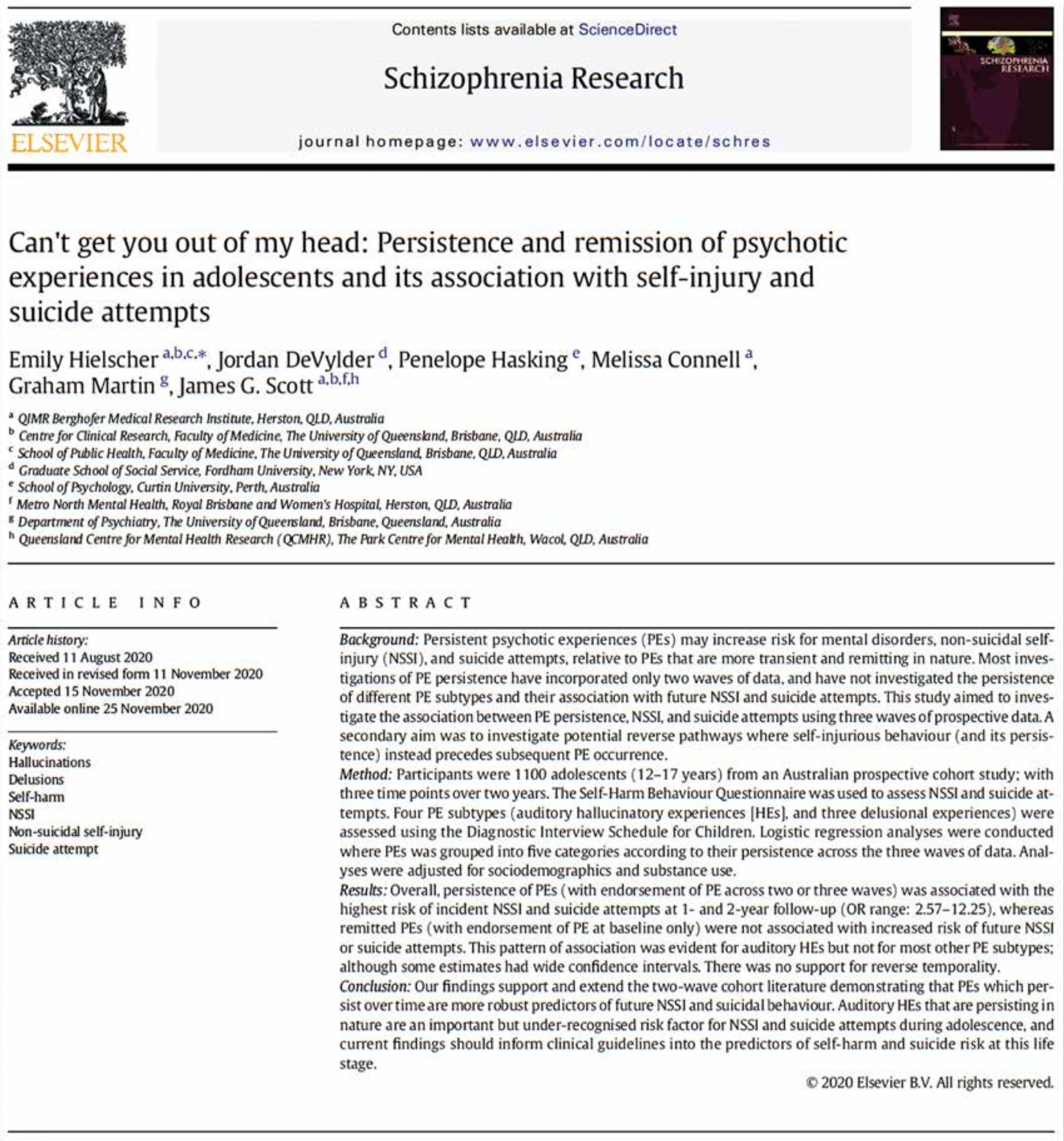
This study was able to fill an important gap. It was the first study in the world to investigate these effects with longitudinal data that spanned over 3 years, with 3 different data collection points.

Results suggest that the longitudinal relationship between auditory hallucinations and non-suicidal self-harm and suicide attempts was explained in part by recent traumatic life events, high psychological distress, and low self-esteem. The authors highlighted the importance of screening for auditory hallucinations in young people at risk of self-harm and suicide, and that this could be further improved by also screening for recent traumatic events (including sexual assault and bullying), self-esteem, and psychological distress.

Can’t get you out of my head: Persistence and remission of psychotic experiences in adolescents and its association with self-injury and suicide attempt.

Using the same dataset, the research team examined persistence and remisson of psychotic experiences and its association with non-suicidal self injury and sucide attempts, over a 3 year period. Most studies examine psychotic experiences in terms of their presence versus absence, however, there is growing evidence that psychotic experiences that are more persistent in nature are stronger predictors for future psychotic disorders, as well as self-injury and suicide attempts.

The research team found that persistence of psychotic experiences (across two or three years) was associated with the highest risk of future self-injury and suicide attempts. Remitted psychotic experiences (i.e., present at baseline but at no other timepoints) were not associated with increased risk of future self-injury or suicide attempts. The type of psychotic experience was another key consideration, where associations were strongest for those experiencing persistent auditory hallucinations, as opposed to delusional thinking. The authors concluded that auditory hallucinations are an ‘important but under-recognised’ risk factor for non-suicidal self-injury and suicide attempts in young people. The findings from both studies have important clinical implications that can inform guidelines and practice when working with young people experiencing psychotic symptoms, specifically to assist with early intervention for self-harm and suicide risk in young people.



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Schizophrenia Research
journal homepage: www.elsevier.com/locate/schres

Can't get you out of my head: Persistence and remission of psychotic experiences in adolescents and its association with self-injury and suicide attempts

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ARTICLE INFO

Article history:
Received 11 August 2020
Received in revised form 11 November 2020
Accepted 15 November 2020
Available online 25 November 2020

Keywords:
Hallucinations
Delusions
Self-harm
NSSI
Non-suicidal self-injury
Suicide attempt

ABSTRACT

Background: Persistent psychotic experiences (PEs) may increase risk for mental disorders, non-suicidal self-injury (NSSI), and suicide attempts, relative to PEs that are more transient and remitting in nature. Most investigations of PE persistence have incorporated only two waves of data, and have not investigated the persistence of different PE subtypes and their association with future NSSI and suicide attempts. This study aimed to investigate the association between PE persistence, NSSI, and suicide attempts using three waves of prospective data. A secondary aim was to investigate potential reverse pathways where self-injurious behaviour (and its persistence) instead precedes subsequent PE occurrence.
Method: Participants were 1100 adolescents (12–17 years) from an Australian prospective cohort study; with three time points over two years. The Self-Harm Behaviour Questionnaire was used to assess NSSI and suicide attempts. Four PE subtypes (auditory hallucinatory experiences [HEs], and three delusional experiences) were assessed using the Diagnostic Interview Schedule for Children. Logistic regression analyses were conducted where PEs was grouped into five categories according to their persistence across the three waves of data. Analyses were adjusted for sociodemographics and substance use.
Results: Overall, persistence of PEs (with endorsement of PE across two or three waves) was associated with the highest risk of incident NSSI and suicide attempts at 1- and 2-year follow-up (OR range: 2.57–12.25), whereas remitted PEs (with endorsement of PE at baseline only) were not associated with increased risk of future NSSI or suicide attempts. This pattern of association was evident for auditory HEs but not for most other PE subtypes; although some estimates had wide confidence intervals. There was no support for reverse temporality.
Conclusion: Our findings support and extend the two-wave cohort literature demonstrating that PEs which persist over time are more robust predictors of future NSSI and suicidal behaviour. Auditory HEs that are persisting in nature are an important but under-recognised risk factor for NSSI and suicide attempts during adolescence, and current findings should inform clinical guidelines into the predictors of self-harm and suicide risk at this life stage.

IMHIP-Youth: A multi-disciplinary collaboration to embed and evaluate a model of social and emotional wellbeing care for Aboriginal and/or Torres Strait Islander young people who experience detention

In 2020, A/Prof Ed Heffernan and Prof James Scott of Metro North, alongside project chief investigators Prof Megan Williams, Dr Carla Meurk, Dr Megan Steele, Gregory Pratt, A/Prof Scott Harden, Dr Marshall Watson, Dr Stephen Stathis and Prof Stuart Kinner, and many associate investigators, including Penny Dale, were awarded an NHMRC Indigenous Health Research grant valuing $1,988,280.32 in 2020. In 2021 the team embarked on the first phase of co-design between the researchers and relevant stakeholders. The project is administered by The University of Queensland and reflects a successful partnership between Aboriginal and/or Torres Strait Islander and non-Indigenous academics and clinicians across Queensland Health, Queensland Centre for Mental Health Research, QIMR Berghofer Medical Research Institute, and several other institutions and organisations inter-state, and has received the support of the Queensland Department of Children, Youth Justice and Multicultural Affairs (CYJMA).

The aim of the project is to improve mental health, and social and emotional wellbeing outcomes and to prevent reincarceration by improving responses to young Aboriginal and Torres Strait Islander people in the criminal justice system. To do this the IMHIP-Youth project will develop a model of social and emotional wellbeing which is Aboriginal and Torres Strait Islander-led.

The first phase of this project is co-design of the model. The project team intends to host a series of workshop events with relevant stakeholders, including community members and service providers, considering different aspects of the social and emotional needs of and gaps for Aboriginal and Torres Strait Islander young people. The first of four workshops took place on 8 June 2021 and focussed on the needs of young people relating to alcohol and other drugs (AOD).

Workshop attendees were asked to provide feedback about the problems and issues in the area, what is already being done and what they know works. The participants were also asked to envision what a successful model would look like. The information received on these topics was extensive, covering many factors contributing to effective service delivery. We have summarised some of their interesting findings.

What are the problems/issues and challenges?

The participants identified the problems, issues and challenges with AOD service delivery as including, racism, trauma, peer pressure, lack of opportunities and the home environment amongst other factors. One prominent theme that emerged was the need to consider the young person in the context of their family environment. The findings noted the impact of intergenerational trauma on alcohol and drug use. This is further underlined by the lack of culturally appropriate family interventions. Alternatively, a young person may be disconnected from their family systems and culture. There is a need to support young people using AOD services to connect with their cultural identity.

What are we already doing and what do we know works?

A range of beneficial services and initiatives were identified throughout discussions. This included the Murri Courts which link Aboriginal and Torres Strait Islander young people to cultural and support services to help them break the cycle of offending.

Other contextual factors were also discussed, including workforce strengths and incorporating person centred practices into care. Participants indicated that the workforce was a strength within the industry, described as “passionate, knowledgeable, and containing culturally courageous workers.” The training of staff in person centred, co-designed and trauma informed care and person-centred models of care were said to be beneficial.

The importance of genuine connections that provide love and care was also highlighted. However, services should also be collaborative and involve the whole family unit when providing culturally effective therapies such as storytelling.

What are the solutions?

Participants suggested life skills programs for young people, increased funding for early interventions and preventions, tailored and individualised programs based on development, and personal interests and cultural needs. They also suggested ongoing training for staff and increasing Aboriginal and Torres Strait Islander leadership within the workforce, to name just a few.

What will success look like?

The model of service would be successful if it is able to reduce the number of young people who experience homelessness or who commit criminal offences. It would contribute to reducing the amount of young people who face court and the amount of young people in detention centres whilst also addressing re-offending. AOD services should provide culturally safe and responsive care that meet the social and emotional wellbeing needs of Aboriginal and Torres Strait Islander young people, families, and communities through the provision of wellbeing supports.
The information gathered through the workshop was collated and published in a report on their website. This summary is only able to present a snapshot of the number of factors that were discussed at the workshop. Based on these findings, further workshops were planned to address other relevant factors such as the interface with mainstream mental health services, homelessness, and trauma.

The IMHIP-Youth Project

'IMHIP-Youth' is a multi-disciplinary collaboration to develop, embed and evaluate a model of social and emotional wellbeing care for Aboriginal and/or Torres Strait Islander young peoples 10-17 who experience detention.

The aim of the project is to achieve beneficial social, emotional, and wellbeing outcomes and to prevent reincarceration by improving responses to engage with young people in the criminal justice system. The project seeks to co-design, implement and evaluate an Aboriginal and Torres Strait Islander-led model of social and emotional wellbeing care for Aboriginal and/or Torres Strait Islander young peoples who experience youth detention. IMHIP-Youth is based on the Indigenous Mental Health Intervention Program (IMHIP) currently successfully operating in adult correctional settings in South East Queensland. IMHIP's design was led by Aboriginal and Torres Strait Islander peoples and provides a holistic strength-based approach to continuity of care and connection of individuals with their families and community following release from custody.

Aims and Objectives

The aims of this project are to:

1. Develop an intervention that improves outcomes for young Aboriginal and/or Torres Strait Islander peoples 10-17 who experience detention by transforming the way that the health system responds to their needs.

2. Contribute to building an evidence-base for social and emotional wellbeing models of care.

3. Promote Indigenous leadership and excellence in research, service delivery and clinical practice.

The project aims will be addressed through the following two objectives:

1. To adapt and implement a culturally appropriate in-reach and transitional model of social and emotional wellbeing care for Indigenous adolescents (10-17 years of age) in detention.

2. To evaluate this service.

These objectives will be achieved in two phases:

Phase 1: Stakeholder consultation and co-design

Phase 2: Implementation and Evaluation.

Co-Design

Phase 1 will utilise co-design principles. Co-design is a participatory process based on developing strong partnerships between researchers and stakeholders at the outset of a service design initiative. It is underpinned by the principle that those who use, or will have a role in the service will be experts in what they need, and in what works. Principles of co-design with Aboriginal and/or Torres Strait Islander peoples include ensuring that engagement is culturally safe and trauma-informed, and that respect for Aboriginal and/or Torres Strait Islander research methodologies is embedded from the outset.

Phase 2 will utilise the Ngaa-bi-nya framework for Indigenous program evaluation (Williams 2018). Ngaa-bi-nya is designed to prompt reflection regarding critical success factors for Indigenous programs. It consists of four domains: landscape; ways of working; resources; and learnings.

Youth Step Up Step Down: An interview with Sharon Gordon

Outcomes for young people experiencing mental health issues continue to be a significant concern across Queensland communities. Services such as Child and Youth Mental Health Service (CYMHS) provide case management and therapy on an outpatient basis with more acutely unwell young people admitted for intensive short-term, often life-preserving containment treatments within adult or adolescent inpatient units. However, many young people would benefit from a service option that bridges the gap between outpatient and acute inpatient care. Furthermore, adult inpatient units are not well set up to address the needs of adolescents and emerging adults and given that adolescent inpatient beds are scarce across Queensland it is clear that alternative models of care that target young people are needed.

Youth Step Up Step Down (YSUSD) services fill this gap by extending the range of mental health service options available in Queensland to young people with severe and complex mental health issues. We spoke to Sharon Gordon (Team Leader, YSUSD, Redcliffe Caboolture Hospital) about the YSUSD service and the Indicators of Success Project.

What is YSUSD and how does it care for young people?

The YSUSD services offer young people appropriate mental health recovery and prevention services in residential settings close to home. YSUSD are community bed-based (sub-acute) mental health services operating 24 hours a day, 7 days a week in a rehabilitative and residential environment. The services target young people aged 16 to 21 years who have *recently experienced,* or are at *increased risk of experiencing,* an acute episode of mental illness or further deterioration of mental health.

The Caboolture YSUSD operates as an integrated model where the Metro North Hospital and Health Service (MNHHS) provides clinical services alongside psycho-social recovery support services provided by Mind Australia (Mind). This model is designed to provide a service option for young people whose recovery is better suited to intensive, short-term (up to 28 days) treatment and support. YSUSD provides the physical and social surrounds that facilitates young people's engagement in interventions and programs that have potential to improve their mental health and reduce risk for self-harm. YSUSD compliments the traditional CYMHS and Adult Mental Health Service (AMHS) continuum of services. YSUSD works collaboratively with CYMHS and AMHS services to provide a treatment option that is developmentally tailored to a young person's individual needs.

Where did YSUSD come from and why is important to evaluate the model?

The YSUSD service model, funded by the Mental Health Alcohol and Other Drugs Branch, is based on the Youth Prevention and Recovery Care (PARC) model funded by the Victorian Department of Health and Human Services. To date there has been limited evaluation of the YPARC model. The exception to this is a report by Galloway, Scollo and Thomson (2016), titled: "Mental Health Prevention and Recovery Care". This evaluation concluded that, although PARC services play a role in improving the mental health of consumers, PARC services did not have a significant impact on preventing avoidable admissions and re-admissions to acute units. The report recommended investigating the experiences of consumers and service providers' decision-making and referral practices to provide more information concerning the role of PARC in supporting and treating mental health consumers. Given the current paucity of studies into the effectiveness of this service model and the vulnerability of youth experiencing mental health challenges and their families and the cost to taxpayers of funding such services this study investigated how a program such as YSUSD is best able to support young people with severe and complex mental health issues.

Tell us about the YSUSD Indicators of Success Project:

The study aimed to investigate expectations of YSUSD stakeholders (consumers, families/carers, referrers, staff, and Executive staff) for a successful outcome from an admission to YSUSD. Specifically, the study explored stakeholder perceptions of a) issues faced by young people seeking admission to YSUSD and b) what are the desired outcomes of admission to YSUSD. The project gathered the views/experiences of 20 consumers (via focus group), 10 families/carers and nine referrers (via face to face or telephone interview), 20 staff (via focus group or face to face interview) and 2 members from the management groups (i.e., executives from MNMH and Mind Australia) (via written survey) including their expectations of success, whether those expectations had been met and suggestions for change.

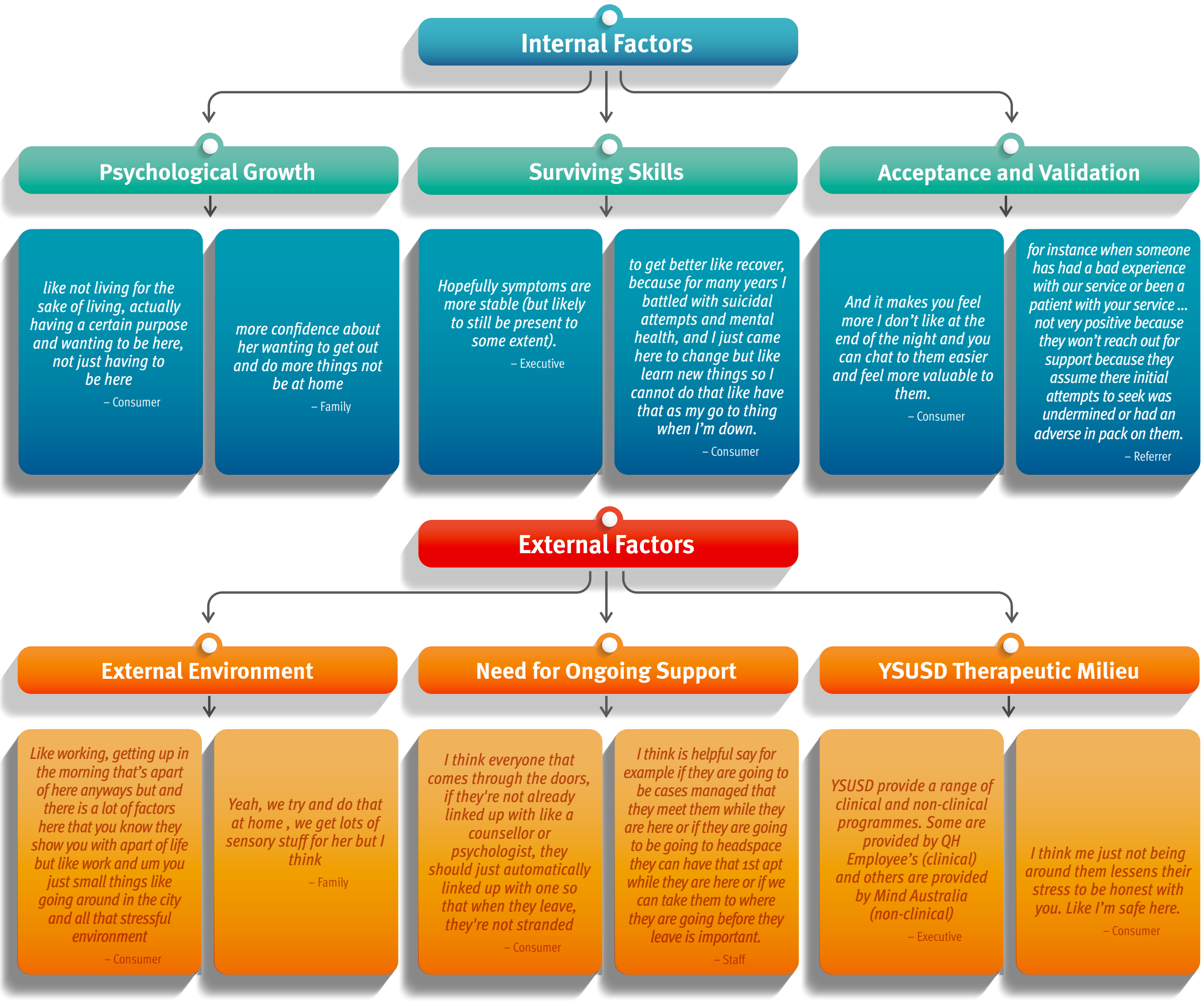
You have just completed the data analysis process. Do you have any early insights you would like to share?

Thematic analysis highlighted that consumers, staff, families, referrers, and executive have similar perceptions and expectations for admissions to YSUSD. However, consumers and referrers were more likely to focus on both illness management and improvements in life skills and quality of life. The responses were organised around two primary themes: Internal factors (Emotions, urges, behaviours, thoughts that are internal to the person) and external factors (Factors that impact the wellbeing of young people: family environment (e.g., family conflict, abuse, lack of validation); housing, employment, finances, school, being in the community). Internal factors had three subthemes: psychological growth, surviving skills and acceptance and validation. Respondents described the issues young people face and the goals or hopes for outcomes from an admission within these three subthemes.

External factors had three subthemes:

1. The external environment. This theme related to factors that impact the wellbeing of young people: family environment; housing, employment, finances, school, being in the community)
2. A need for ongoing support beyond the admission. This theme related to statements about young people wanting or needing support regardless of whether it has been provided or not. There were three subthemes for this theme: referral to MHAOD, connections to community Services and desire for continued links to YSUSD)

3. The YSUSD therapeutic milieu. This theme referred to the activities, people, and environment of the unit. This subtheme overwhelming highlighted strengths of the YSUSD environment and therapeutic approach but also offered a number of potential changes that participant's felt could strengthen the model. Stakeholders outlined the strengths and limitations of aspects of the programs and interventions offered, the importance of referral to supports and the peer support provided on the unit (particularly noting the interactions with Lived Experience workers as a strength). Additionally, consumers and families described a key purpose of YSUSD as a place for respite for both consumers and their families. Finally, the structure and physical environment was described as being of particular benefit.



Internal Factors

Psychological Growth

like not living for the sake of living, actually having a certain purpose and wanting to be here, not just having to be here
– Consumer

more confidence about her wanting to get out and do more things not be at home
– Family

Surviving Skills

Hopefully symptoms are more stable (but likely to still be present to some extent).
– Executive

to get better like recover, because for many years I battled with suicidal attempts and mental health, and I just came here to change but like learn new things so I cannot do that like have that as my go to thing when I'm down.
– Consumer

Acceptance and Validation

And it makes you feel more I don't like at the end of the night and you can chat to them easier and feel more valuable to them.
– Consumer

for instance when someone has had a bad experience with our service or been a patient with your service ... not very positive because they won't reach out for support because they assume there initial attempts to seek was undermined or had an adverse in pack on them.
– Referrer

External Factors

External Environment

Like working, getting up in the morning that's apart of here anyways but and there is a lot of factors here that you know they show you with apart of life but like work and um you just small things like going around in the city and all that stressful environment
– Consumer

Yeah, we try and do that at home , we get lots of sensory stuff for her but I think
– Family

Need for Ongoing Support

I think everyone that comes through the doors, if they're not already linked up with like a counsellor or psychologist, they should just automatically linked up with one so that when they leave, they're not stranded
– Consumer

I think is helpful say for example if they are going to be cases managed that they meet them while they are here or if they are going to be going to headspace they can have that 1st apt while they are here or if we can take them to where they are going before they leave is important.
– Staff

YSUSD Therapeutic Milieu

YSUSD provide a range of clinical and non-clinical programmes. Some are provided by QH Employee's (clinical) and others are provided by Mind Australia (non-clinical)
– Executive

I think me just not being around them lessens their stress to be honest with you. Like I'm safe here.
– Consumer

Where to from here?

The results from the project have already led to some practical changes on the unit, such as making the DBT groups more interactive, arranging more access to Psychiatrist time for families, modifying groups to better suit people who are neurotypical and normalisation of the use of the facility for respite purposes. Results are also being used to inform the development of an evaluation model for the service.

Reference:

1. Galloway, J., Scollo, G., & Thomson, N. (2016). *Mental Health Prevention and Recovery Care: A clinical and community partnership model of sub-acute mental health care.* Department of Health and Human Services.

Early Psychosis

Prof James Scott
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Introduction By Prof James Scott (Director of Research; Director, Early Psychosis); and Dr Stephen Parker (Director of Training).

Many people are surprised to learn that almost one in thirty people will experience an episode of psychosis some time in their lives. Psychosis is an ‘umbrella term’ referring to mental disorders characterised by impairment in reality testing as evidenced by the presence of hallucinations or delusions. These symptoms are frequently accompanied by negative symptoms such as social withdrawal, amotivation and poor self-care, cognitive symptoms such as problems with planning and organisation and mood symptoms like mania and depression. Responding well to the needs of young people and their families following the onset of psychosis is critical in ensuring good clinical and functional outcomes. The Early Psychosis service at Metro North is actively involved in research to understand how we can best support young people with emerging diagnoses such as schizophrenia and bipolar disorder.

Professor James Scott, Director of the Early Psychosis service, has led an internationally recognised programme of research since commencing with the service in 2010. These have included observational studies which aim to understand the causes of psychosis and the changes that people experience when they develop psychosis. Dr Bjorn Burgher has led a remarkable longitudinal neuroimaging study that illuminates how the brain changes in people with psychosis. Participants with early psychosis completed a cognitive task whilst undergoing neuroimaging using functional Magnetic Resonance Imaging to see how different areas of the brain connect. Their performance on the cognitive tasks and their scans were compared to healthy controls. The participants and controls then repeated the imaging and cognitive tasks 12 and 18 months later. Dr Burgher demonstrated for the first time that the subtle cognitive difficulties experienced by people with early psychosis were a result of the inefficient connections within the brain. Details of this study are featured below.

Professor Scott has been examining how the immune system can produce antibodies which change the brain and cause psychosis. In his first study, blood from all people admitted to hospital for their first episode of psychosis was examined to determine the presence of antibodies which affected cells in the brain. The team showed that five percent of patients with first episode psychosis had these brain antibodies. They then went on to treat these patients with immunotherapy and demonstrated excellent clinical outcomes.

Professor Scott and his colleagues are now completing two further studies of immune mediated psychosis. The first, known as the Higher Risk of Autoimmune Psychosis Study (H-RAP) examines clinical features that predict the presence of antibodies in people living with psychosis. The H-RAP study is featured in this review. The second study is of antibodies to Muscarinic Receptors in the brain. This is a novel area of research, funded by the National Health and Medical Research Council. Discovering the causes of psychosis is essential in finding better treatments.

The early psychosis service has provided excellent care for young people experiencing the early stages of psychosis. Professor Scott believes the research focus of the service has supported the patient care and the strong emphasis on evidence-based practise by the team. Family involvement is critical to support young people with psychosis. Melissa Holland leads the Family Education Programme. Her work and plans for further evaluation of this critical service are featured in this review.

Higher Risk of Autoimmune Psychosis (H-RAP) Study

In the Mental Health Research Digest 2020, we featured a case study authored by Sarangan Katheesan, Georgia Bertram, Dr Anne Stark, and Prof James Scott alongside Dr Robert Adam (neurologist) of the RBWH. The case study presented the circumstances of a 23-year old male with an exacerbation of treatment-refractory psychosis after receiving intravenous immunoglobulin (IVIG) for suspected autoimmune psychosis (AP). This case represented the second false positive case of IVIG-induced psychosis following a course of IVIG to be documented in the literature and highlights the problems with antineuronal antibody testing in the absence of a clear clinical indication.

How did this case inform the H-Rap Trial?

We had started the H-RAP Trial prior to seeing this patient. In 2016, the RANZCP published guidelines for the management of schizophrenia recommending universal anti-neuronal antibody testing of all patients with first episode of psychosis (Galletly et al., 2016). Over time, there was evidence to suggest that people with immune mediated psychosis had high risk clinical features. We wrote an article which recommended that only selected patients should be tested for antibodies (Scott et al., 2018). We then applied for a grant to find the evidence to support our recommendation. This is how H-RAP came about.

What is the H-RAP Study and what are you trying to achieve?

H-RAP is an observation study which screens a large number of people experiencing psychosis for anti-neuronal antibodies and compares the results of the screening with the clinical symptoms they are experiencing. The hypothesis was that only people with high risk clinical features for auto immune psychosis (sudden onset of illness, neurological symptoms, severe cognitive impairment etc) would be true positive for the presence of the antibodies. We also hypothesised that screening people without these high risk clinical features would result in false positives- people being positive for antibodies on the blood tests but not having a true auto immune psychosis as was highlighted in the case we wrote up in 2020.

How is it going? Do you have preliminary findings or something like that you would like to share?

We have just finished the screening phase of the study. We screened 753 people with psychosis for anti-neuronal antibodies of whom 17 were positive. We are now following up these individuals to see who has true autoimmune psychosis and who are false positives. What we can state at this time is that the antibodies are uncommon, and the initial evidence supports targeted antibody testing of people with psychosis.

Why is H-Rap important and what are the potential clinical implications?

Since the discovery of anti-neuronal antibodies causing psychosis in a very small number of individuals, there has been a lot of confusion amongst clinicians as to who should be tested and how positive antibody tests should be interpreted. H-RAP will provide clarity and inform guidelines about the testing for anti-neuronal antibody testing in people with psychosis. It will lead to more efficient use of limited health resources and avoid unnecessary over-investigation of people who are living with psychosis.

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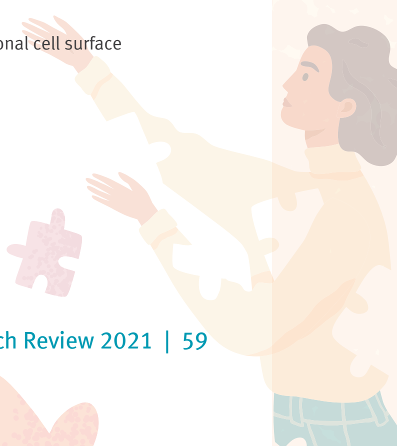
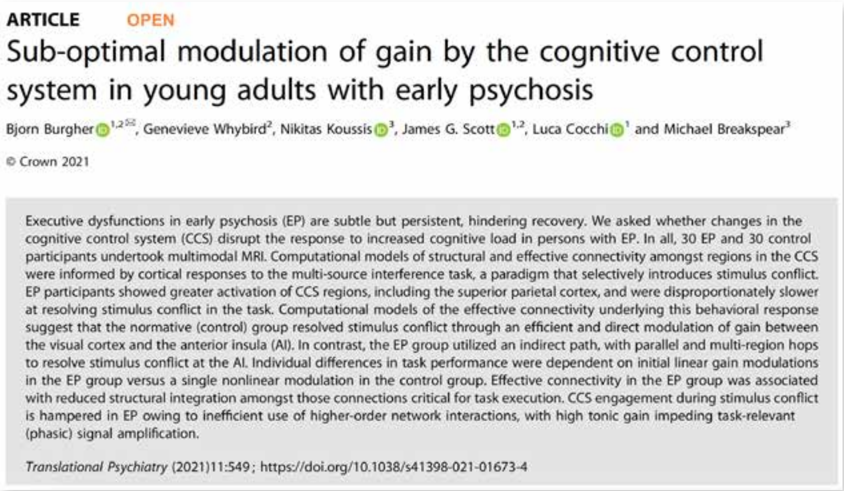


Sub-optimal modulation of gain by the cognitive control system in young adults with early psychosis

Work from Dr Bjorn Burgher was published in the highly prestigious journal “Translational Psychiatry”. This research project sought to compare the connectivity between regions of the brain in people with early psychosis with healthy controls whilst undertaking a cognitive task. Despite early interventions for cognitive deficits in young adults with early psychosis, it is common for these to persist. Addressing these cognitive deficits is an important factor in managing early psychosis, particularly in the choice of antipsychotic medication and cognitive therapies. Understanding the brain mechanisms implicated in these cognitive impairments may allow for customised recovery programs for patients.

Dr Burgher recruited 30 people with early psychosis and 30 healthy controls aged 17-25 year olds to a study where he used Magnetic Resonance Imaging (MRI) and functional MRI (fMRI) to investigate changes in the cognitive control system (CCS) when faced with a multi source interference task. The CCS is made up of cingulo-opercular and the frontoparietal brain networks. The CCS supports of planning and decision making required during complex social and environmental circumstances, such as work and school. The project was a repeated measures design and brain scans were conducted at baseline and 12 and 18 months.



ARTICLE OPEN

Sub-optimal modulation of gain by the cognitive control system in young adults with early psychosis

Bjorn Burgher[1,2], Genevieve Whybird[2], Nikitas Koussis[3], James G. Scott[1,2], Luca Cocchi[1] and Michael Breakspear[3]

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Executive dysfunctions in early psychosis (EP) are subtle but persistent, hindering recovery. We asked whether changes in the cognitive control system (CCS) disrupt the response to increased cognitive load in persons with EP. In all, 30 EP and 30 control participants undertook multimodal MRI. Computational models of structural and effective connectivity amongst regions in the CCS were informed by cortical responses to the multi-source interference task, a paradigm that selectively introduces stimulus conflict. EP participants showed greater activation of CCS regions, including the superior parietal cortex, and were disproportionately slower at resolving stimulus conflict in the task. Computational models of the effective connectivity underlying this behavioral response suggest that the normative (control) group resolved stimulus conflict through an efficient and direct modulation of gain between the visual cortex and the anterior insula (AI). In contrast, the EP group utilized an indirect path, with parallel and multi-region hops to resolve stimulus conflict at the AI. Individual differences in task performance were dependent on initial linear gain modulations in the EP group versus a single nonlinear modulation in the control group. Effective connectivity in the EP group was associated with reduced structural integration amongst those connections critical for task execution. CCS engagement during stimulus conflict is hampered in EP owing to inefficient use of higher-order network interactions, with high tonic gain impeding task-relevant (phasic) signal amplification.

Translational Psychiatry (2021)11:549; https://doi.org/10.1038/s41398-021-01673-4

Dr Burgher showed that information processing within the CCS of people with early psychosis were less efficient than those of healthy controls because of impaired “gain control”; the ability to selectively enhance or suppress sensory inputs in the brain. This may explain some of the cognitive problems that inhibit returning to work and study that is sometimes experienced by people with early psychosis.

Dr Burgher has since left MNMH to establish the Queensland Neurostimulation Centre. We asked him about the importance of this work:

How does your research inform our understanding of psychosis?

This study was important for identifying a neural mechanism, called “gain control”, underlying cognitive impairments in psychosis. Gain control in the brain acts like a signal amplifier, that tunes information processing up and down, according to the demands of the environment.

As an expert in Neurostimulation, do you think this intervention has a role in the treatment of people with Early Psychosis.

Neurostimulation is well poised to target mechanisms such as gain control. This is because neurostimulation is highly precise and can act as tuning parameter for signal amplification or suppression. In future, neurostimulation may be used to treat certain symptoms within the psychosis syndrome, including hallucinations and specific cognitive impairments.

Educating the family of young people experiencing psychosis

Since 2016, the Early Psychosis team has offered a Family Education Program for family and carers of young people experiencing psychosis. Over the years the organisers have sought to continuously improve the way in which the program in delivered. Currently, the program is being run by Melissa Holland, Senior Social Worker with the Early Psychosis Team, with support from the multidisciplinary team to facilitate the sessions. We spoke to Melissa about the changes made to the program over the years, what form it has currently taken and the plans for improvement.

Tell us about the Early Psychosis Family Education Program, what does the program look like and what are you aiming to do?

The family education program, as it is now, is designed as a Psychoeducational program that is delivered to a diverse range of family members, parents, and carers of a young person that has had a first episode of psychosis. The program has historically been run by different social workers in different formats over the years. This year we are running the program as four sessions for 2 hours. The first session discusses 'what is psychosis', what are the presenting features, how do you manage someone who is going through that for the first time and why people may experience psychosis.

The second session highlights that recovery is possible. We talk about how to promote recovery and we look at relapse as well to acknowledge that relapse happens, how you might notice relapse and what the potential triggers are. We go through ways of communicating with a young person who may be experiencing psychosis. Lastly, we focus on the grief and loss that a parent or carer might experience and the common experiences and challenges that families face.
The third session is where we hand things over to a psychiatrist to talk about medications and why we use medication and length of treatment recommendations.

During the last session we bring in guest speakers including a carer consultant and a lived experience representative. This is helpful for carers that have specific questions, to connect them with supports or establish their own informal peer support group.

Why is this program so important?

Family engagement has a strong evidence base. If we don't have the families on board or if they don't understand the young person's experience, outcomes for the young person might be very different.

Family interventions have shown to significantly improve outcomes for young people experiencing psychosis resulting in improved relapse prevention. Families/carers who understand psychosis (e.g., symptoms, treatment, and recovery), enhance their problem-solving and coping skills, and engage in psychological and emotional support are better equipped to care for loved ones with psychosis. Carer burden and burnout is reduced, high expressed emotion prevented or addressed, and it can assist with the process of grief. (Claxton et al., 2017; Day et al., 2018; Ma et al., 2018).

As a team we think it is really important to offer as much information as we can to help carers who are looking for resources to help themselves care for their young people.

What do you think families and carers need out of a program like this?

The program is about creating a space to collaborate with other families and carers who have gone through this. I have observed parents sharing their story and other parents are nodding along, saying they have been through the same thing. During the breaks or at the end of the session people will start to interact and share experiences. It reduces isolation and helps them feel like they are not alone. It gives them a sense that *'the other people in the room have gone through similar things.'*

We have also introduced to the families this year the concept of grief and loss with the aim to normalise the experience and open a conversation for parents to share their experiences. From there we then facilitate a mindfulness exercise in self compassion for families and carers.

Moving forward, do you have any plans to assess the program? What is the overall goal?

We really want to evaluate the program. We want to think about why we are doing the things we are, how we are going to do it and what are families/carers leaving with or learning. So, we have so far done an informal evaluation of the program and collecting pre and post data. It used to be shorter 2 session, talk-based format. However, we observed that there was too much content to cover in 2 sessions and it was very much sitting and listening to people talk. This year we have tried to change that and made it more of an experience where carers can learn practical skills to help them.

Next year we would like to do a more formal evaluation. We would like to know if there is anything that families found helpful, did a skill or strategy we presented change how families see their young person or how they supported them? Another big question for us will centre around gaps in the program. We want to know what we are missing so that we can improve the program for next year.

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Research into the mental health of older people

Introduction by Prof Andrew Teodorczuk (Staff Specialist and Director of Clinical Training, TPCH) and Prof Gerard Byrne (Director, Older Persons' Mental Health Service, RBWH).

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As the Metro North population ages, there are many more older people with mental disorders and this is reflected in referrals to the older persons' mental health services in the district. Some of these patients pose complex diagnostic and management challenges, but others have straightforward but highly prevalent anxiety and depressive disorders. Many of these older people have co-morbid general medical conditions, including neurodegenerative and cerebrovascular diseases. They are often physically frail and prone to falls. Many are widowed and living alone. This is of critical importance because social isolation is a major predictor of suicidal ideation in older Australians, accounting for about 30% of the risk (Almeida et al. 2012). Many older people do not have English as their first language.

Research into mental disorders in older people has a long history at MNMH. Clinical trials in people with Alzheimer's disease or in those who are at high risk of developing Alzheimer's disease have been going on since at least 1996. Most of these have been Phase IIb or Phase III studies, but at least one was a Phase I study (Andreasen N et al. 2015). Much of this dementia research has been conducted through the memory clinics at the RBWH (now STARS) and TPCH. It has involved collaborations between psychiatry, neurology, and geriatric medicine. A current collaborative NHMRC-funded prospective study investigating polygenic risk for Alzheimer's disease is led by Prof Michael Breakspear (Lupton et al. 2021).

Prof Andy Teodorczuk has recently convened DECLARED 2021 (www.declared2021.com) the largest gathering of delirium researchers and experts in the Southern Hemisphere. The congress was originally scheduled for 2020 but due the pandemic was moved to 2021. Leading delirium and dementia researchers from around the world presented their work, including from Metro North Professor John Fraser, A/Prof Dylan Flaws, Professor Alison Mudge and Dr Eamonn Eeles. Remarkably with 7 representatives on the steering committee, Metro North had a strong voice in the design and delivery of the 3 day event held at the BCEC. The theme was patient and carer involvement in delirium care.

The success of the conference enabled the Australasian Delirium Association to pledge funds to help set up the first new academic journals in the Delirium field. Delirium and its sister journal Delirium Communications was launched on World Delirium Day 2022 and Professor Andrew Teodorczuk is one of the four founding Editors. A Metro North research team led by Dr Eamonn Eeles published the inaugural paper in Delirium Communications exploring the use of AI in Delirium practice (Eeles et al., 2022).

Old Age Psychiatry at TPCH has grown in impact over the last year. A systematic review into the role of ECT in Delirium undertaken by Registrar Katie Lupke overseen by A/Professor Stephen Parker and a team of Old Age and General psychiatrists at TPCH has been published in the prestigious Acta Psychiatrica Scandinavica. The findings firmly demonstrate that there is no evidence in support for ECT in managing delirium in older people. In 2022, two of the shortlisted 10 presentations concerned research into Old Age Psychiatry from TPCH. Led by a Registrar, Dr Ilina Agarwal, under the supervision of Dr Conor O'Luanaigh exciting new findings in relation to the prevalence of loneliness in Australian Older mental illness will be presented. This builds on the seminal earlier work into Loneliness undertaken by Dr O'Luanaigh in Ireland (O'Luanaigh et al, 2012).

Secondly, though at an early-stage, work in relation to the grass roots *“Grand Friends – an intergenerational project”* will be presented by Team Leader Fiona Hope. Grand friends is an adaption of intergenerational approaches used in non-mental health settings and has been implemented by the OPMH MDT. Being innovative and highly successful, plans are afoot to seek funding and further develop, research and disseminate the important initiative.

The Geriatric Anxiety Inventory (GAI) was developed at the RBWH by Prof Gerard Byrne at the University of Queensland (UQ) Academy of Psychiatry and Prof Nancy Pachana at the UQ School of Psychology and validated with the assistance of staff and patients at RBWH. The GAI is now the standard method of assessing anxiety in older people and is available in more than 20 languages. The GAI developers have recently published a book summarizing the field – *Anxiety in Older People: Clinical and Research Perspectives* (Byrne & Pachana, 2021).

Prof Byrne is now collaborating with A/Prof Nadeeka Dissanayaka and Dr Ji Hyun Yang, and their graduate students, on a program of research investigating cognitive impairment and anxiety in older people with Parkinson’s disease and other neurodegenerative diseases (Dissanayaka et al., 2022; Zhang et al., 2022). This group has recently received an MRFF grant to develop technology-assisted remote psychotherapy to reduce anxiety in people living with dementia and their carers. Psychiatry of old age advanced trainee Dr Magdalena Hagn recently completed data collection for her study on anxiety in older people with psychotic disorders. Dr Joshua Flavell is undertaking PhD research into frontotemporal dementia.

2021 has been a high impact year in terms of older people’s mental health research activity. Hopefully this smorgasbord of initiatives, publications and collaborations will continue to grow across all of Metro North in order to guide best practice.

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Understanding the importance of education research on Delirium

Delirium is a medical condition that has been known about since antiquity. More recently in the last 30 years, with the formation of international societies such as the Australasian Delirium Association, there has been a proliferation in scientific studies such that we now have a greater understanding of the syndrome.

However, despite these advances, it is abundantly clear that we struggle with clinical care and challenges exist with translating evidence into best practice. There is a lack of standardisation of screening approaches and increasingly we over prescribe antipsychotics. Further, we don't routinely monitor delirium nor manage the chronic impact of delirium with effective delirium rehab. In brief, though anyone can make a diagnosis, we collectively fail to make one, and in so doing, patients with delirium and their families continue to have poor outcomes. Arguably, the opportunity to make a difference through education is enormous. The need is further driven with the publication last year of the Clinical Care Standard for Delirium. Since completing a Doctorate in understanding education best practice in delirium (Teodorczuk, 2013), Prof Andrew Teodorczuk and colleagues have led a program looking more widely at effective education approaches. The continuum of research undertaken includes interprofessional education, systems learning, Undergraduate education, teaching approaches led by Liaison teams, e-learning, family education, and importantly, work-based learning. In 2020, Prof Teodorczuk published a definitive review of education approaches (Lee, 2020) with international colleagues from the UK, Canada and Belgium. The conclusion was that, though we can demonstrate that effective teaching can make a difference at all Kirkpatrick levels *(see Figure 6)* and the quality of studies was good, more research needs to be focused on learning through practice and mimetic strategies.

One approach that is showing promise is the Delirium Early Monitoring System (DEMS). There are strong theoretical reasons as to why an artefact such as DEMS could enhance learning through practice. The DEMS being a tool to upskill healthcare workers on delirium can inform conversations to enhance practice. In such a manner Delirium score could become a vital sign similar to Blood Pressure and undertaking regular monitoring could become a mainstream part of practice. Through the process of using DEMS staff can learn, especially as we know that teaching alone is insufficient due to situational pressures. Feasibility was established back in the Northeast of England (Rippon, 2016) and the tool was validated at St George Hospital, NSW. Prof Teodorczuk contributed to the validation paper published in 2021, which is featured below.

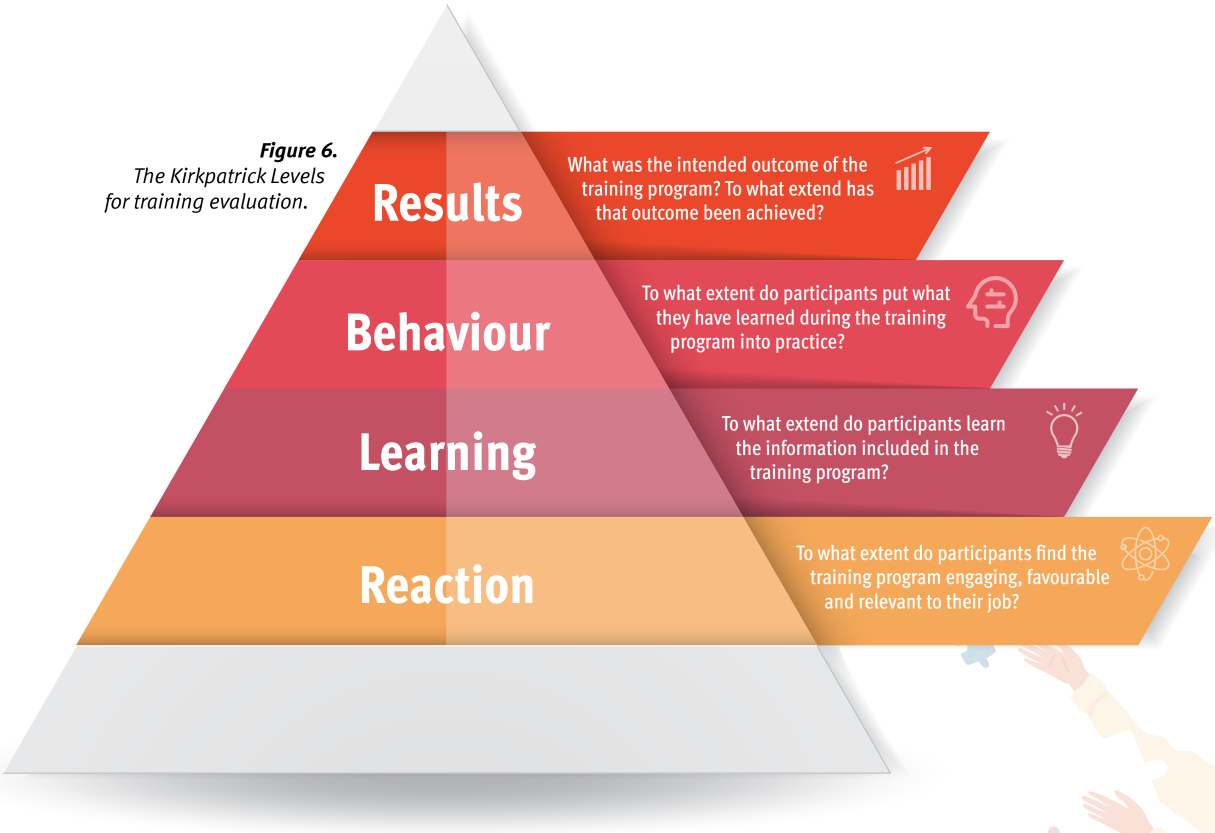

Figure 6.
The Kirkpatrick Levels for training evaluation.

The plan is now to embed DEMS into practice within clinical settings. A core group including Dr Frederick Graham from the Centre of Health Services Research and Professor Stephen Billett from the School of Education at Griffith University are meeting with a view to determining whether it is possible to include the Delirium Early Monitoring System-Delirium Observation Screening Scale (DEMS DOSS) within electronic notes and also to establish future Grant targets.

Arguably, there is a need to formally evaluate health benefits, improvements in learning and culture and economic savings associated with the Delirium Early Management system. Given the core group of interested Delirium researchers already working within Metro North (Prof Alison Mudge, Dr Eamonn Eales, Prof John Fraser and A/Prof Dylan Flaws to name but a few) undertaking such research within TPCH, RBWH, Caboolture and Redcliffe would make sense.

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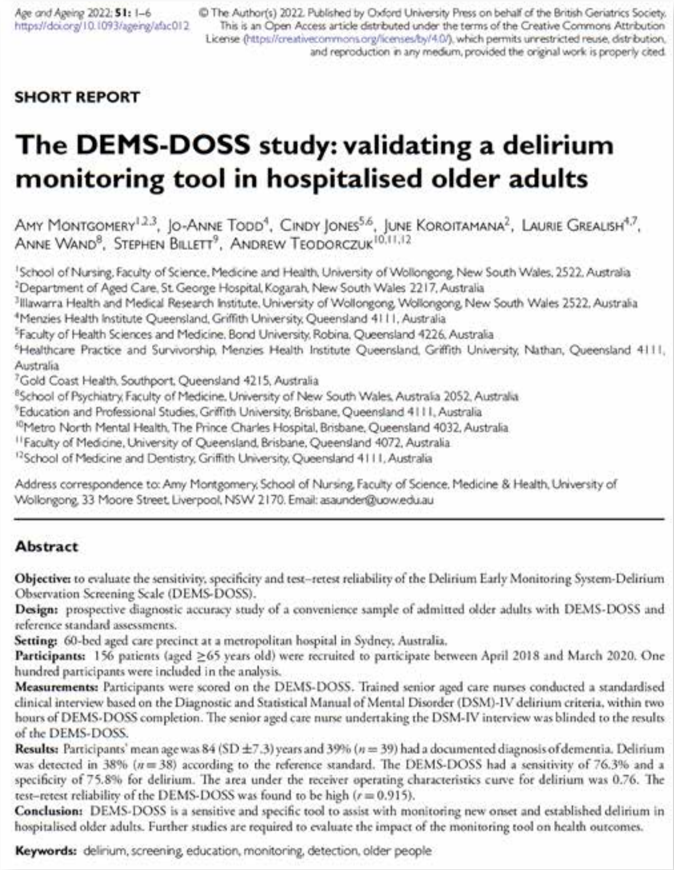
The DEMS-DOSS Study: Validating a delirium monitoring tool in hospitalised older adults

A key step in development of the DEMS is validation of the DEMS DOSS and as such, the aim of the project was to determine the sensitivity, specificity and, test-retest reliability of the DEMS-DOSS as a delirium monitoring tool. This means that the authors wanted to know how well the DEMS DOSS was able to correctly identify a patient with Delirium (sensitivity) and how well it could correctly identify a person without delirium (specificity).

The work was undertaken in NSW at St George Hospital, a 60-bed aged care precinct in Sydney, Australia. Overall, 156 patients aged 65 years old or older were recruited to participant between April 2018 and March 2020. Participants were scored on the DEMS-DOSS by a nurse in the morning between 8am and 10am, then participants were scored a second time, within 2-hours of the first score by a second nurse. Comparison of these 2 scores would allow for the authors to assess the test-retest reliability of the DEMS DOSS. Further to administering the DEMS DOSS, a trained Senior Aged Care Nurse conducted a standardised clinical interview based on the DSM-IV delirium criteria. The nurse undertaking the DSM IV interview was blinded to the results of the DEMS-DOSS.

The study found that DEMS-DOSS is a sensitive and specific method of monitoring for delirium in hospitalised older people. On average, participants were 84 (± 7.3) years old and 38.2% (n=39) had a diagnosis of dementia. Delirium was detected in 37.3% (n=38), this rate aligns with the estimated prevalence of delirium among older inpatients. The DEMS-DOSS had a sensitivity of 75.8% and a specificity of 75.8% for delirium. The area under the receiver operating characteristics curve for delirium was 0.76, showing that the DEMS-DOSS is capable of accurately identifying a patient with delirium. Overall, the test-retest reliability of the DEMS-DOSS was found to be excellent (r = (0.903+0.927)/2 = 0.915). This was an important step towards implementing a tool like the DEMS-DOSS. The authors concluded by suggesting that further studies are required to evaluate the impact of the DEMS-DOSS on health outcomes. These findings have been published in Age and Ageing, the leading Geriatric academic journal with an Impact Factor of 10.68 and presented at the Australasian Delirium Association Congress DECLARED held in 2021.



Age and Ageing 2022; **51:** 1–6
https://doi.org/10.1093/ageing/afac012

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SHORT REPORT

The DEMS-DOSS study: validating a delirium monitoring tool in hospitalised older adults

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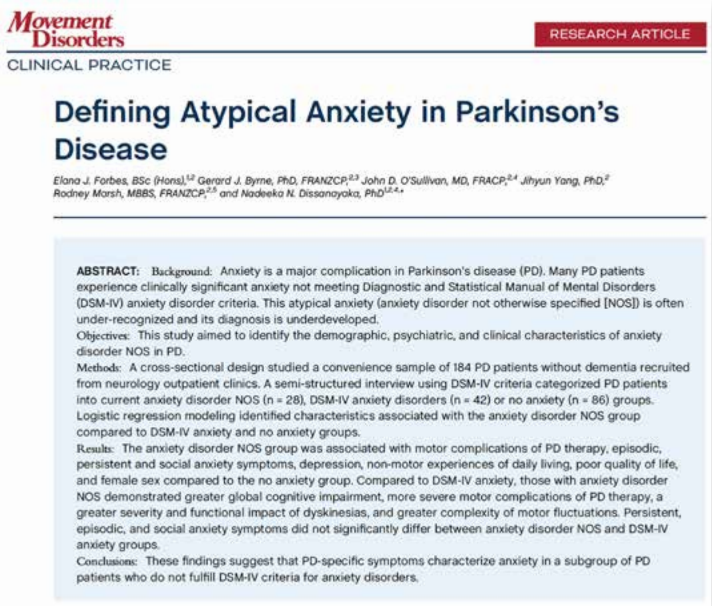
Abstract

Objective: to evaluate the sensitivity, specificity and test–retest reliability of the Delirium Early Monitoring System-Delirium Observation Screening Scale (DEMS-DOSS).
Design: prospective diagnostic accuracy study of a convenience sample of admitted older adults with DEMS-DOSS and reference standard assessments.
Setting: 60-bed aged care precinct at a metropolitan hospital in Sydney, Australia.
Participants: 156 patients (aged ≥65 years old) were recruited to participate between April 2018 and March 2020. One hundred participants were included in the analysis.
Measurements: Participants were scored on the DEMS-DOSS. Trained senior aged care nurses conducted a standardised clinical interview based on the Diagnostic and Statistical Manual of Mental Disorder (DSM)-IV delirium criteria, within two hours of DEMS-DOSS completion. The senior aged care nurse undertaking the DSM-IV interview was blinded to the results of the DEMS-DOSS.
Results: Participants' mean age was 84 (SD ±7.3) years and 39% ($n = 39$) had a documented diagnosis of dementia. Delirium was detected in 38% ($n = 38$) according to the reference standard. The DEMS-DOSS had a sensitivity of 76.3% and a specificity of 75.8% for delirium. The area under the receiver operating characteristics curve for delirium was 0.76. The test–retest reliability of the DEMS-DOSS was found to be high ($r = 0.915$).
Conclusion: DEMS-DOSS is a sensitive and specific tool to assist with monitoring new onset and established delirium in hospitalised older adults. Further studies are required to evaluate the impact of the monitoring tool on health outcomes.

Keywords: delirium, screening, education, monitoring, detection, older people

Parkinson’s Disease: Defining Atypical Anxiety

Many patients with Parkinson’s Disease also experience anxiety that does not meet the DSM criteria, also known as atypical anxiety (anxiety disorder not otherwise specified [NOS]). However, atypical anxiety is under recognised and due to the complex presentations in people with Parkinson’s Disease, it can be difficult to diagnose. Elana Forbes (The University of Queensland) co-authored an article with MNMH’s Prof Gerard Byrne and colleagues exploring this issue with the aim of identifying the demographic, psychiatric and clinical characteristics of anxiety within people with Parkinson’s Disease.



Movement Disorders
CLINICAL PRACTICE

RESEARCH ARTICLE

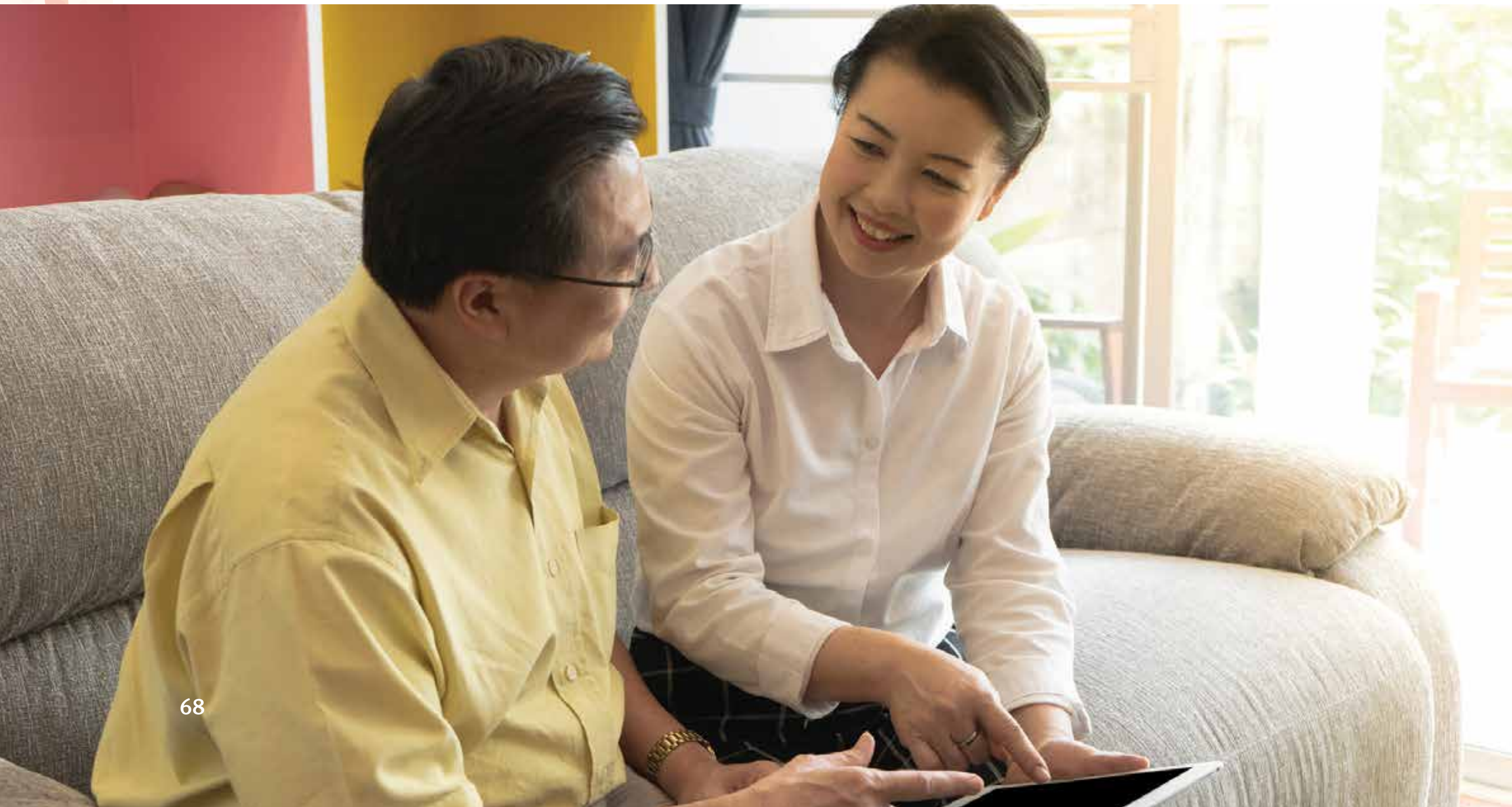
Defining Atypical Anxiety in Parkinson’s Disease

Elana J. Forbes, BSc (Hons),[1,2] Gerard J. Byrne, PhD, FRANZCP,[2,3] John D. O’Sullivan, MD, FRACP,[2,4] Jihyun Yang, PhD,[2] Rodney Marsh, MBBS, FRANZCP,[2,5] and Nadeeka N. Dissanayaka, PhD[1,2,4,]*

ABSTRACT: Background: Anxiety is a major complication in Parkinson’s disease (PD). Many PD patients experience clinically significant anxiety not meeting Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) anxiety disorder criteria. This atypical anxiety (anxiety disorder not otherwise specified [NOS]) is often under-recognized and its diagnosis is underdeveloped.
Objectives: This study aimed to identify the demographic, psychiatric, and clinical characteristics of anxiety disorder NOS in PD.
Methods: A cross-sectional design studied a convenience sample of 184 PD patients without dementia recruited from neurology outpatient clinics. A semi-structured interview using DSM-IV criteria categorized PD patients into current anxiety disorder NOS (n = 28), DSM-IV anxiety disorders (n = 42) or no anxiety (n = 86) groups. Logistic regression modeling identified characteristics associated with the anxiety disorder NOS group compared to DSM-IV anxiety and no anxiety groups.
Results: The anxiety disorder NOS group was associated with motor complications of PD therapy, episodic, persistent and social anxiety symptoms, depression, non-motor experiences of daily living, poor quality of life, and female sex compared to the no anxiety group. Compared to DSM-IV anxiety, those with anxiety disorder NOS demonstrated greater global cognitive impairment, more severe motor complications of PD therapy, a greater severity and functional impact of dyskinesias, and greater complexity of motor fluctuations. Persistent, episodic, and social anxiety symptoms did not significantly differ between anxiety disorder NOS and DSM-IV anxiety groups.
Conclusions: These findings suggest that PD-specific symptoms characterize anxiety in a subgroup of PD patients who do not fulfill DSM-IV criteria for anxiety disorders.

A total of 184 Parkinson’s disease patients were recruited from outpatient clinics. These participants engaged in interviews to determine whether they met the criteria for a current anxiety disorder under the DSM, atypical anxiety, or no anxiety. The characteristics in people with Parkinson’s Disease with atypical anxiety were compared to those with anxiety disorders and those with no anxiety.

Compared to those with a no anxiety diagnosis, atypical anxiety was found to be associated with motor complications from Parkinson’s Disease therapy, depression, non-motor experiences of daily living, poor quality of life and being female. They also found that atypical anxiety was associated with greater global cognitive impairment, more severe motor complications from Parkinson’s Disease therapy, and more severe functional impact of dyskinesias (involuntary jerky movements) compared to those with anxiety disorder as diagnosed using the DSM. This study identified characteristics that are associated with atypical anxiety in people with Parkinson’s Disease. Future research should look at the relationship between anxiety and dyskinesias, fluctuations and cognitive impairment to assist in the development of guidelines for diagnosis and treatment of atypical anxiety in people with Parkinson’s disease.



Neural correlates of attentional deficits in Parkinson’s disease patients with mild cognitive impairment

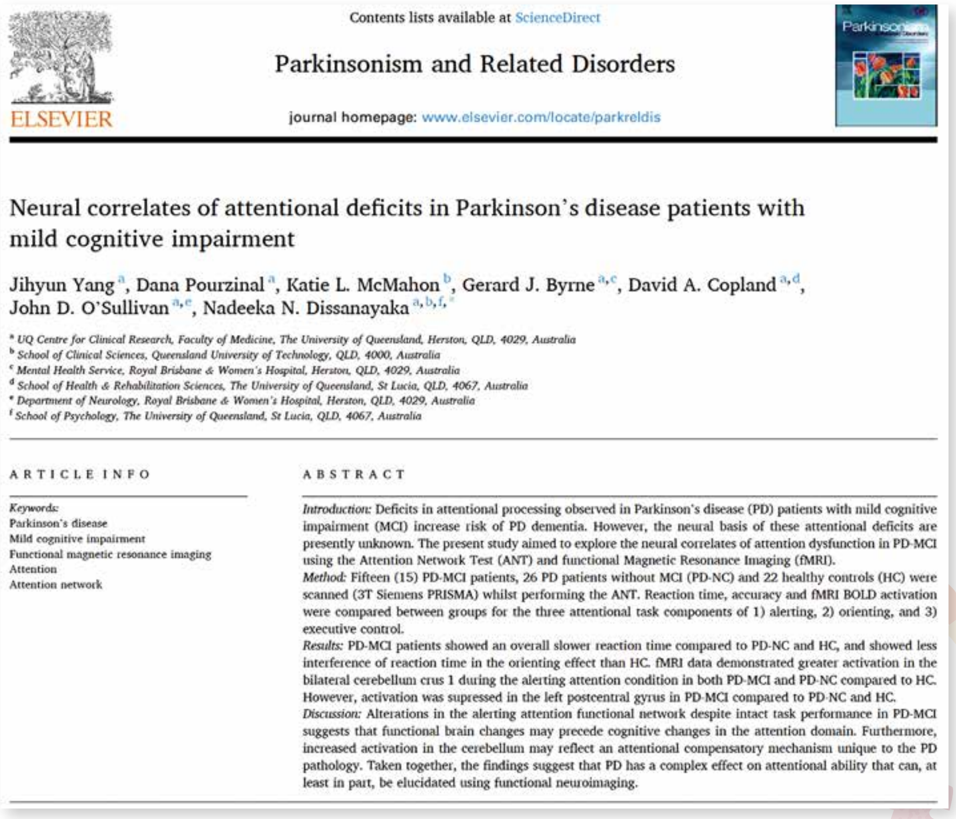
Existing literature has established that Mild Cognitive Impairment (MCI) in people with Parkinson’s Disease is a predictor of dementia. Mild cognitive impairment commonly presents with attentional deficit, which has a direct impact on the quality of life for patients. In this paper, Jihyun Yang (The University of Queensland) worked with Professor Gerard Byrne and his colleagues to explore the neural networks for attention in patients with Parkinson’s Disease using the Attentional Network Test (ANT) and functional Magnetic Resonance Imaging (fMRI).

The ANT evaluates three attentional networks in the brain. Firstly, ‘alerting’ measures a person’s ability to maintain an alert state and respond to warning signals. Secondly, ‘orientating’ requires a person to select information from sensory inputs to determine and pay attention to their original source. Finally, ‘executive control’ refers to fronto-executive control and conflict processing. The study compared neural networks in Parkinson’s Disease patients with MCI to those without using the ANT. The ANT was conducted whilst the participants (N = 41) were in the fMRI scanner. It was found that reaction times were slower on the ANT for patients with MCI when compared to other Parkinson’s patients without cognitive impairment and to healthy controls.

There were several unexpected results. For instance, there was no difference between the alerting and executive control networks in Parkinson’s Disease patients with and without MCI. The only neural network that showed differences between groups was orientating. Patients with MCI showed smaller orienting effects compared to healthy controls, meaning that patients with MCI were more efficient at orientating their attention which was suggested to be due to dopaminergic medications which can have positive cognitive effects. However, no differences were seen between patients with or without MCI.

The fMRI results saw a deactivation of the left postcentral gyrus for patients with MCI despite the maintained performance in the alerting task. The authors suggested that this deactivation may precede the observable impairments and thus the ANT can be used to detect altered function before more obvious changes.

There was also no fMRI difference between groups in orientating and executive attention tasks. They also found greater activation in the left cerebellum in MCI patients compared to healthy controls. The greater activation in the cerebellum was suggested to be a potential compensatory mechanism specific to patients with Parkinson’s Disease, but further research is needed to confirm this.



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Neural correlates of attentional deficits in Parkinson’s disease patients with mild cognitive impairment

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ARTICLE INFO

Keywords:
Parkinson’s disease
Mild cognitive impairment
Functional magnetic resonance imaging
Attention
Attention network

ABSTRACT

Introduction: Deficits in attentional processing observed in Parkinson’s disease (PD) patients with mild cognitive impairment (MCI) increase risk of PD dementia. However, the neural basis of these attentional deficits are presently unknown. The present study aimed to explore the neural correlates of attention dysfunction in PD-MCI using the Attention Network Test (ANT) and functional Magnetic Resonance Imaging (fMRI).
Method: Fifteen (15) PD-MCI patients, 26 PD patients without MCI (PD-NC) and 22 healthy controls (HC) were scanned (3T Siemens PRISMA) whilst performing the ANT. Reaction time, accuracy and fMRI BOLD activation were compared between groups for the three attentional task components of 1) alerting, 2) orienting, and 3) executive control.
Results: PD-MCI patients showed an overall slower reaction time compared to PD-NC and HC, and showed less interference of reaction time in the orienting effect than HC. fMRI data demonstrated greater activation in the bilateral cerebellum crus 1 during the alerting attention condition in both PD-MCI and PD-NC compared to HC. However, activation was supressed in the left postcentral gyrus in PD-MCI compared to PD-NC and HC.
Discussion: Alterations in the alerting attention functional network despite intact task performance in PD-MCI suggests that functional brain changes may precede cognitive changes in the attention domain. Furthermore, increased activation in the cerebellum may reflect an attentional compensatory mechanism unique to the PD pathology. Taken together, the findings suggest that PD has a complex effect on attentional ability that can, at least in part, be elucidated using functional neuroimaging.

Older Persons and Diet: Mealtime care and dietary intake in older psychiatric hospital inpatient: A multiple case study

Older inpatients are at increased risk of malnutrition with prevalence rates as high as 60%. A/Prof Dylan Flaws was involved in a recent mixed methods research project authored by Kate Flint (The University of Queensland) that aimed to describe the energy and protein intake among older psychiatric inpatients and the nutrition and mealtime care practices that were in place. The project sought to determine whether further investigation regarding interventions in this area was necessary.

The study was conducted over 6 weeks and presented case studies of 8 patients (aged 67-90). Dietary intake of patients was observed over two days each week by using a visual plate waste and estimations of the energy and proteins intake. The results of the study showed that it was common for older persons admitted to psychiatric units to have inadequate dietary intake. Only three participants in this study were meeting the estimates for their energy and protein intake.

The study identified three main barriers to dietary intake including, missed meals or snacks, inadequate food provided, and lack of reliable mealtime assistance. Missed meals mostly occurred due to preparation requirement for ECT procedures or oversleeping in the morning and missing breakfast. Inadequate food provision was related to the flexibility in mealtimes, replacement meals and the energy and protein content of the menu. Lack of consistent mealtime assistance was problematic for several patients. The impact of mealtime assistance was evidenced in one of the case studies, where the only day that the participant had received an adequate intake during the trial period was the same day that they had also received staff assistance during mealtimes. This barrier was likely due to a lack of time, poorly defined roles, and a lack of shared responsibility.

The authors finished by concluding that interventions targeting these barriers would also need to be multidisciplinary to make sure that patients order and receive adequate food, especially to make up missed meals. However, further research into these barriers would be necessary to confirm the conclusions drawn from the case studies.

Received: 31 July 2020 | Revised: 24 October 2020 | Accepted: 23 November 2020
DOI: 10.1111/jan.14728

ORIGINAL RESEARCH:
EMPIRICAL RESEARCH - MIXED METHODS

JAN

WILEY

Mealtime care and dietary intake in older psychiatric hospital inpatient: A multiple case study

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Abstract

Aims: To investigate the energy and protein adequacy of meals and dietary intake of older psychiatric inpatients and describe patient and mealtime factors potentially influencing intake.

Design: Multiple case studies.

Methods: Psychiatric inpatients aged 65 years and older, admitted to a single mental health ward during the 6-week study period (April–May 2019) were eligible for inclusion. Dietary intake was observed for two consecutive days each week (minimum four observation days). Visual plate waste methods were used to estimate patients' dietary intake at mealtimes, with energy and protein intake calculated using known food composition data and compared with estimated requirements. Medical records were reviewed weekly to collect information on potential factors related to intake and mealtime care. Data from all sources were first summarized in a case record for within-case analysis using descriptive statistics, followed by cross-case analysis.

Results: Eight participants (five men, age 67–90 years, two underweight and one overweight, and four requiring some mealtime assistance) had 5–12 days of observation data recorded. Three met their estimated daily energy and protein requirements throughout the study period, while the remaining five participants did not. The main barriers identified as contributing to insufficient energy and protein intake were as follows: missing meals (asleep and treatment); inadequate food provided (insufficiency of the standard hospital menu); and need for increased mealtime assistance.

Conclusion: Poor dietary intake may be common among older psychiatric patients, suggesting that they may also need nursing and multidisciplinary nutrition care interventions shown to effectively prevent and treat malnutrition in other older inpatient groups.

Impact: Older psychiatric patients experience similar nutrition and mealtime issues to other older inpatients. This study highlights the need for nurses and the

Management of Serious Mental Illness

Introduction by Prof James Scott (Director of Research; Director, Early Psychosis).

Prof James Scott
Director of Research;
Director of Early Psychosis Team
Metro North Mental Health Service

Metro North Mental Health Services provides care for some of the most vulnerable people in our community. The clinical care is particularly focused on those living with serious mental illness. Serious mental illness has been defined as a mental, behavioural, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities. Few other facilities outside of the public mental health services are available to meet the needs of people experiencing acute episodes of serious mental illness. The diagnoses encompassed by this term include schizophrenia, bipolar disorder, treatment refractory depression and severe personality disorder. Often people living with serious mental illness experience both mental health and physical health problems, substance use disorders and social challenges such as homelessness, unemployment, loneliness, and social isolation.

Metro North Mental Health Services have been involved in clinical trials to reduce the symptoms of schizophrenia. These have included trials of psychological interventions such as Social Cognitive Interaction Training (SCIT) and adjunctive pharmacotherapy such as Mangosteen. The secondary analysis of the Mangosteen trial is featured in this review.

One very successful trial led by Metro North Mental Health investigated the benefit of sodium benzoate for psychosis symptoms. The finding from this study led to a further current trial, Cadence Discovery, that aims to find a mechanism of action and dose for sodium benzoate for people with treatment refractory schizophrenia. You can read more about the Cadence Discovery Trial in this section.

Metro North Mental Health is a significant provider of Electroconvulsive Therapy (ECT), which is an important therapy for people with treatment resistant mental illness. Understanding factors associated with ECT is critical for ensuring high quality and safe care for consumers. To assist with this MNMH has established a database of information relating to these procedures which provides a rich opportunity to understand this procedure, its benefits, and how it can be improved. Dr Subramanian Purushothaman, Director of ECT at the RBWH, sat down with us to talk about his research interests and the research potential of the ECT Database. You can read this interview below.

Public mental health services are responsible for providing clinical care to people living with serious mental illness. Metro North Mental Health has an opportunity to improve the lives of people living with serious mental illness through the embedding of research into clinical services. Ongoing partnerships between clinicians and researchers will enhance the clinical care that Metro North Mental Health provides to consumers.

Cadence Discovery Trial

Metro North Mental Health Services have been involved in clinical trials to reduce the symptoms of schizophrenia over a number of years. Currently, the most common medication used to manage symptoms associated with schizophrenia are antipsychotics that act through dopamine receptors; however, these medications have high rates of side effects with only modest clinical efficacy. The alternative to dopamine acting medications is those which target N-methyl-D-aspartate (NMDA) receptors which have been shown to improve all symptom domains associated with schizophrenia. The efficacy of the NMDA medications can be supported by the inclusion of adjunct sodium benzoate.

One very successful trial led by MNMH investigated the use of adjunctive sodium benzoate in people with early psychosis. Although the study found that sodium benzoate, which is a widely used food preservative, offered no benefit in reducing psychosis symptoms in the early stages of psychosis, three other studies have demonstrated that it is effective in improving symptoms in those living with treatment refractory schizophrenia.

Inspired by the findings of these studies and influenced by the very positive outcomes seen in some patients with severe psychosis, Professor James Scott, and his team of clinician researchers across MNMH were successful in being awarded funding from the RBWH Foundation for a mechanism of action and dose finding study of sodium benzoate in people with treatment refractory schizophrenia.

The study protocol was published in the journal “Trials” which is a highly respected journal ranked Q1 for Medicine. Recruitment is well underway across Metro North Mental Health. The study aims to recruit 52 people living with treatment refractory schizophrenia. They will be randomised to receive 1, 2 or 4 grammes of sodium benzoate or placebo in addition to their usual treatment.

The team’s hypothesis is that participants allocated to receive sodium benzoate will have a significant reduction in positive, negative, and general psychopathology symptoms of schizophrenia as measured on the Positive and Negative Syndrome Scale (PANSS). In the event that this effect occurs, the team also expect to be able to identify biochemical changes which will indicate a mechanism of action.

Professor Scott and his team hope the study can provide definitive information about the use of sodium benzoate in schizophrenia. There is an urgent need for novel and effective treatments to be available for people living with schizophrenia.

If sodium benzoate is effective in reducing symptoms in people with treatment refractory schizophrenia, it may become a treatment option before clozapine for the 1 in 4 consumers who don't respond to antipsychotic therapy. It could also be used as an adjunctive treatment to improve the response to clozapine. Well designed clinical trials of sodium benzoate are needed to establish if it has a role in the management of schizophrenia.

STUDY PROTOCOL Open Access

Cadence discovery: study protocol for a dose-finding and mechanism of action clinical trial of sodium benzoate in people with treatment-refractory schizophrenia

Andrea Baker[1,2], Lachlan Clarke[1,3], Peter Donovan[3,4], Jacobus P. J. Ungerer[5,6], Gunter Hartel[1], George Bruxner[7], Luca Cocchi[1], Anne Gordon[8], Vikas Moudgil[9], Gail Robinson[3,7], Digant Roy[8], Ravinder Sohal[9], Emma Whittle[4] and James G. Scott[1,2,3,9*]

Abstract

Background: Schizophrenia is a persistent psychotic disorder often accompanied by severe disability and premature mortality. New pharmacological treatments are urgently needed. Sodium benzoate, a common food preservative holds potential to be an effective, accessible treatment for schizophrenia, though the optimal dosing and mechanism of action of the compound requires further investigation.

Methods: Individuals with persistent treatment-refractory schizophrenia (n=52) will be recruited. Patients will be randomised in a 1:1:1:1 ratio to receive treatment of one of three active doses (1000, 2000 or 4000 mg daily) of sodium benzoate or placebo for 6 weeks duration. The primary outcome measurement is change in the Positive and Negative Syndrome Scale (PANSS) total score. Secondary outcome measurements are PANSS subscales, Global Assessment of Function (GAF), Clinical Global Impression (CGI) and Patient Global Impression (PGI-I). Change in concentrations of peripheral amino acids (D-alanine, L-alanine, D-serine, L-serine, glycine and glutamate), plasma sodium benzoate, plasma catalase, 3-nitrotyrosine, malondialdehyde and high-sensitivity C-reactive protein (hs-CRP) will be determined as tertiary measures.

Discussion: This trial seeks to build upon previous research indicating potential efficacy of sodium benzoate for reduction of symptoms in individuals with treatment-refractory schizophrenia. The trial aims to improve the understanding of the mechanism of action of the compound.

Trial registration: Australian New Zealand Clinical Trials Registry (ANZCTR) ACTRN12621000327886. Registered on 23 March 2021.

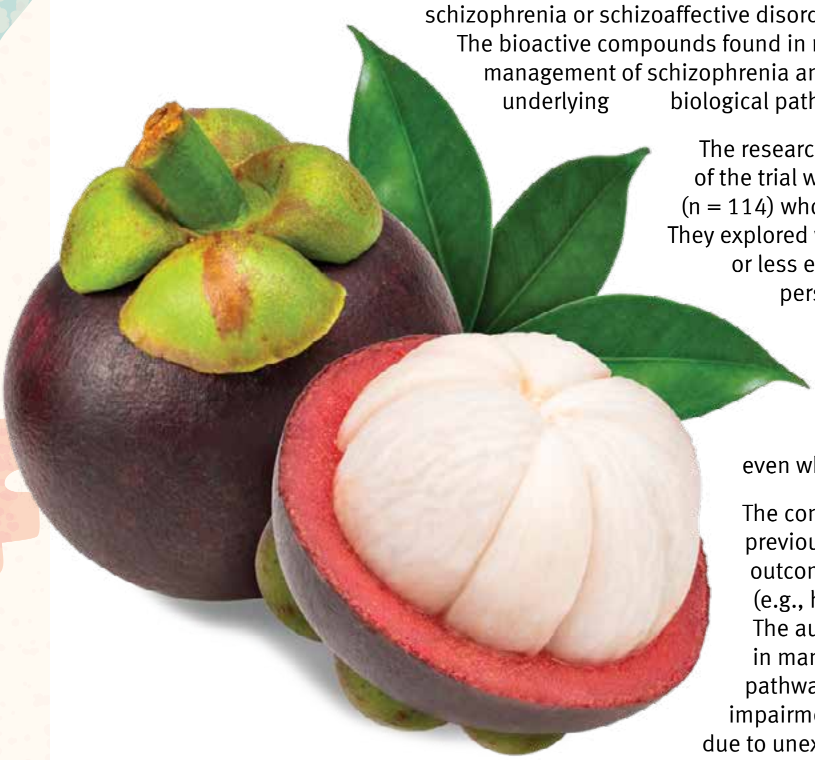
Keywords: Schizophrenia, Adjunctive, Treatment refractory, Sodium benzoate, Intervention, RCT, Clinical trial, PANSS

The Effect of Adjunctive Mangosteen Pericarp on Cognition in People with Schizophrenia: Secondary Analysis of a Randomized Controlled Trial

MNMH has been a collaborator on a multi-institute study led by Professor Michael Berk from Deakin University that conducted a randomised controlled trial (RCT) to investigate the effect of adjunctive mangosteen pericarp on the cognition of people with schizophrenia. This trial was the first of its kind. The mangosteen is a tropical fruit found across South-East Asia and which has various uses in traditional medicine, including tuberculosis, osteoarthritis, and dysentery. The RCT involved a 24-week double blind, placebo-controlled trial of mangosteen pericarp extract supplementation.

Of the 148 participants (mean age = 38.9), half were assigned a 1,000mg/day dose of Mangosteen and half were given placebo. The primary outcome of interest was the Positive and Negative Syndrome Scale which evaluates the positive, negative, and general psychopathology symptoms of schizophrenia. The treatment group has significantly higher symptom severity compared to the control group. However, both groups saw improvement in their symptoms over the 28 weeks of the study.

The first paper resulting from this trial, which was featured in last year's review, could not corroborate previous literature in this area that supported the effectiveness of adjunctive treatment for schizophrenia or schizoaffective disorder as no-between group differences were found. The bioactive compounds found in mangosteen's have been implicated in the management of schizophrenia and schizoaffective disorder targeting the potential underlying biological pathways.



The research team has since published a secondary analysis of the trial where they considered a subset of participants (n = 114) who completed cognitive outcomes at follow up. They explored whether the mangosteen extract would be more or less effective at improving cognition depending on a person's baseline clinical factors such as cognitive functioning, depressive symptoms, and illness severity and duration. Results again indicated that there was no difference between the group that received a placebo and those receiving mangosteen, even when clinical factors were controlled for.

The conclusions from both papers are in contrast to previous literature in this area where improved cognitive outcomes have been reported for other populations (e.g., healthy adults with mild cognitive impairment). The authors suggested that the active compounds found in mangosteen may function using different biological pathways for other conditions such as mild cognitive impairment. Alternatively, the current findings may be due to unexplored effects of metabolism and individual differences. Further research in this area may still be warranted.

The Effect of Adjunctive Mangosteen Pericarp on Cognition in People With Schizophrenia: Secondary Analysis of a Randomized Controlled Trial

Wolfgang Marx[1], David R. Skvarc[1], Mohammadreza Mohebbi[2], Adam J. Walker[1], Alcy Meehan[1], Alyna Turner[1,3], Andrea Baker[4], Seetal Dodd[1,5], Sue M. Cotton[5,6], James Graham Scott[4,7,8], Bianca E. Kavanagh[1], Melanie M. Ashton[1], Ellie Brown[5,6], John J. McGrath[4,9,10], Michael Berk[1] and Olivia May Dean[1,11]*

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Spotlight on Electroconvulsive Therapy

Dr Subramanian Purushothaman
Director of Electroconvulsive Therapy
Metro North Mental Health Service

Electroconvulsive Therapy (ECT) is a safe and highly effective treatment used widely around the world for people experiencing acute episodes of serious mental illness. Dr Subramanian Purushothaman is the director of Electroconvulsive Therapy (ECT) and manages the ECT Database at MNMH – RBWH along with the ECT team. The Database, which has collected 12 years of detailed data on the ECT, is a rich source information that has the potential to further the understanding of many under researched aspects of ECT procedures. We spoke to Dr Purushothaman about the Database and his research on ECT.

Tell us about the role of Electroconvulsive Therapy (ECT) in mental health services and the research you've been doing?

ECT is a valuable part of mental health treatment because, as part of a public hospital, we see lots of patients who have treatment resistant illnesses. ECT is quite helpful in those patients, so much so that it can sometimes be lifesaving. We perform emergency ECT's where there is a significant immediate threat to their life. Even during the pandemic ECT was an essential treatment which we were able to continue to perform. We provided more ECT during the peak of the pandemic then we had before.

MNMH has developed a database which stores information about all aspects of the ECT procedure we perform. The ECT database was established in 2008 to gather detailed data on a wide range of factors relating to ECT procedures including the type of treatment, consent, anaesthetic medication, dose, and whether the treatment was adequate amongst other things.

We thought that it was important to use this data, so we applied for an ethics exemption to analyse the data. Dr. Emily Martin and myself along with Dr. Emma Ballard and Ms. Julie Blake from QIMR Berghofer Medical Research Institute are involved in this project with guidance from Prof. James Scott. What we have found so far is that not many studies look at ECT treatment provision over a long period of time, and existing papers looked at large state-wide databases did not include the type of ECT, the electrode placement or the anaesthetic medication. So, our paper will be one of the first one which looks at a database spanning 12 years of public hospital data.

We have access to such as rich database, what needs to be done? And why is it important that we do research in this space?

One example of how our data can contribute to the existing research in this area is through the prevalence of ECT's performed for different diagnoses. We don't think that the current state of the literature accurately reflects the true scenario. Previous studies have included both private and public hospitals and concluded that the most common diagnosis for ECT was affective disorders but in our public hospital sample, we are doing more ECT for patients with psychosis. The implication being that if you are looking for evidence for ECT in psychosis, this should be taken from procedures performed in public hospitals. This was the subject of an upcoming paper that we are working on.

In the future we hope to look at the effects of anaesthetics on ECT, which has not properly been addressed in the existing literature. Anaesthetic medication affects the quality of the seizure induced. We would also like to be able to look at effects of electrode placement. There are not many studies that are able to look at these factors in such a large database that spans many years.

What are your other research interests and what are you working on in that space?

Another research interest of mine is the Psychiatric Advance Health Directives (PAHD) and recent changes to the Mental Health Act 2016 (Qld) which was amended recently. This area in the legislation is very complex and needs further clarification. PAHD are different to Advance health Directives (AHD) for medical conditions. Queensland legislation uses the principles of the Power of Attorney Act 1998 (Qld) for the PAHD. Patients who have given consent to ECT under a valid PAHD might have to wait for the tribunal to give consent under the current legislation to start the treatment. This might cause delay in starting the treatment thereby extending their length of stay and potentially increase the risk of their symptoms becoming more severe. Family members or guardians are not allowed to consent for ECT even if they are appointed as an attorney under a valid PAHD. This area needs further research to improve the awareness and understanding of PAHD and its interplay with ECT. Research can also help in identifying any areas that need improvement so that it can guide any future legislative changes.

Implementation and Innovation

Introduction by A/Prof Kylie Burke (Principal Research Fellow).

A/Prof Kylie Burke
Principal Research Fellow
Metro North Mental Health Service

Innovation and evidence-based approaches to implementation are key features of a continuous improvement and learning organisation. Improvements and efficiencies in health care emerge via the commitment and creativity of people and with the support of organisations and policy and funding partners.

Exploring new ways to identify, assess, diagnose, and intervene to improve the wellbeing and mental health of our consumers has long been a priority at MNMH. In recent years, this has seen shifts in models of care such as the embedding of a trauma-informed care approach throughout much of our service. It has also resulted in diagnostic and treatment improvements in medical and psychosocial approaches and the health care environment such as immunotherapy for first episode psychosis, the implementation of a peer mentor program for carers of consumers living with an eating disorder and the redesign of adult inpatient wards at RBWH to incorporate principles of sensory modulation that have been shown to influence the experience and outcomes of consumers.

Innovation on its own does not automatically result in adoption of the innovation or in sustainable change over time. The field of implementation science has emerged over the past two decades in an effort to broaden the reach and facilitate the uptake and maintenance of evidence-based interventions for psychosocial and medical health issues. Implementation science can be defined as “the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services” (Bauer et al., 2015). In doing so it aims to bridge the gap between what we know and what we do (the know-do gap) by addressing the barriers that slow or halt the uptake of proven health interventions and evidence-based practices into clinical care and policy.

MNMH clinicians have embraced both innovation and implementation science, undertaking projects that build new knowledge, enhance approaches to provision of mental health and AOD care and that seek to uncover the barriers and enablers that impede or foster adoption and maintenance of practice changes over time.

In this section we look at some of the new frontiers in which our people are working to create innovations, with projects that were undertaken in 2021 in areas such as digital innovation using machine learning and medical service innovations such as the ICU of the future. We also take a look at the ways in which implementation frameworks have been used to evaluate the impact of service initiatives such as Safespace.

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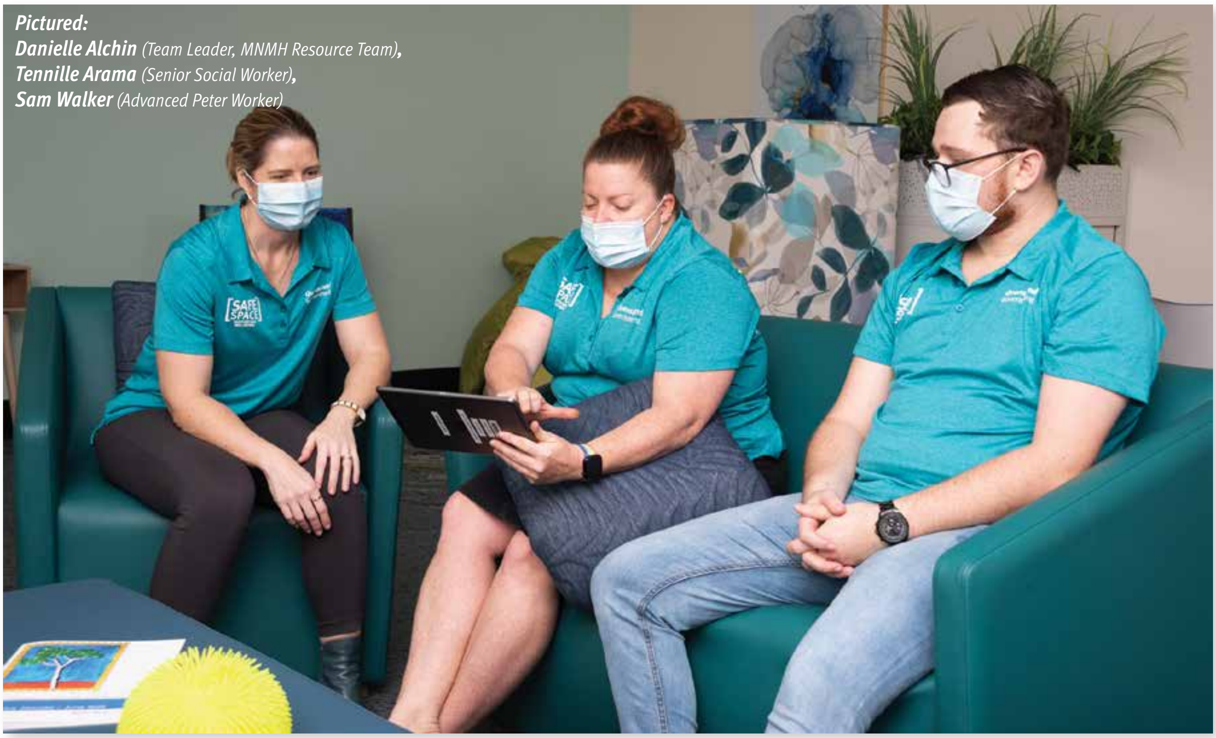
The Safe Space at TPCH: Reviewing the implementation project

For people experiencing psychological distress and crisis an Emergency Department is not an ideal environment to seek help. A 2018 report from the Australasian College for Emergency Medicine found that people presenting with acute mental health crises wait longer to be seen, spend more time receiving treatment and were more likely to leave before their treatment was completed. In 2019, Metro North received funding from the Mental Health Alcohol and Drugs Branch to establish a crisis support space or a Safe Space at The Prince Charles Hospital. The Safe Space is designed to provide a home-like, non-clinical environment where people in, or at risk of developing, mental health crisis, can receive timely interventions and compassionate care. The MNMH-TPCH Safe Space was officially opened in June 2021 and is staffed by two peer workers and one senior mental health clinician who provide a lived experience and professional lens to support consumers presenting to Safe Space.

To take a better look at the barriers and enablers of implementing the Safe Space facility within the service, Danielle Alchin, Team Leader MNMH Resource Team, conducted an implementation review. The review consisted of a survey of key internal and external stakeholders who were involved in the implementation and/or the consultation process for Safe Space. Thirteen responses to the survey were received. Further to the survey, interviews were conducted with 5 key stakeholders to gather further information.



Pictured:
Danielle Alchin *(Team Leader, MNMH Resource Team)*,
Tennille Arama *(Senior Social Worker)*,
Sam Walker *(Advanced Peter Worker)*

The one major enabler of implementation, as endorsed by 10 of the 13 respondents, was staff commitment. They noted the dedication and enthusiasm of the staff involved. In particular, the project officer, Shelly Kulperger, was considered an essential driving force to support implementation. The benefit of having a designated project position was noted in 3 interviews and 5 survey responses.

Additionally, some barriers to implementation were identified. The first barrier was differing expectations by key stakeholders, as well as differing ideas about what funded 'alternatives to Emergency Departments' should look like. They also reported barriers with some negative views about Safe Space services and stigma towards people presenting to health services for mental health concerns. Respondents to the review indicated that lack of cohesion between stakeholders may have caused delays and hindered implementation.

The key take-away's from the implementation process noted the importance of communicating the need and utility for new facilities widely to encourage engagement with the service. This should include the evidence base supporting new initiatives. They also recommended engaging in robust consultation with stakeholders to ensure positive advocacy and promotion throughout the process.

Pictured: *Shelley Kulperger (Safe Space Project Officer) testing the new facility.*

We asked Danielle Alchin, about the implementation review process, why it was important to conduct a review, and how the service can take these learnings into the future:

"I think it is important to review all of our implementation activities across the service. We sometimes hear feedback from staff that they don't know what happened to a particular activity after it was commenced, or worse, that new initiatives fall over once the initial drive or project team finish up. I think implementation reviews allow us to learn from each activity and hopefully ensure initiatives are embedded more fully and are sustainable."

Pictured:
Linda Milne *(Peer Worker),*
Ryan Lawrence *(Advanced Peer Worker),*
Karina Sankey *(previous Peer Worker),*
Tristan Adams *(Peer Worker),*
Tennille Arama *(Senior Social Worker)*

Digital innovation: Using Artificial Intelligence to improve service delivery

The potential for Artificial Intelligence (AI) to benefit healthcare operations and service delivery will allow assessment of risk for psychiatric disorders and can be applied to ongoing patient care by helping clinicians to alleviate or reduce complications in illness progression. AI algorithms have been employed in other healthcare fields to perform analysis of medical images and to correlate symptoms and biomarkers from clinical data to characterise an illness and its prognosis. Medical research is also benefitting from AI by helping to expedite genome sequencing and the development of new drugs and treatments by enabling access to knowledge that was previously extremely difficult to obtain or observe within our complex health data assets. Machine learning, a subfield of AI, has the potential to assist mental health clinicians to interpret complex data in a relatively short period of time using specialised algorithms. Machine learning has many potential applications including being able to assist with a patient assessment by predicting early deterioration of health status and even classifying the types of motion or activities.

The goal of inpatient psychiatric care is to provide a safe environment for both patients and staff. Strategies to manage or minimise self-harm in depressed and suicidal patients include a range of non-pharmacological approaches such as visual observations and therapeutic engagement. However, when a patient has persistent suicidal ideation, they are in a very vulnerable state and have a high risk of acting upon this particularly in the early stages of admission. Current technological advances in remote patient monitoring can record clinical observations related to varying physical phenomena. Continuous monitoring of human vital signs such as heart rate, pulse rate, breathing rates and patient movements could act as important clinical indicators for early detection of deterioration.

For example, Remote Patient Monitoring (RPM) is a rapidly emerging field in healthcare that is designed to assist clinicians with additional support to provide care in a wider range of settings. This is achieved by incorporating new Internet of Things methodologies in healthcare such as telehealth applications, wearable devices, and contact-based sensors. RPM is commonly used to measure vital signs or other physiological parameters such as motion recognition that can assist with clinical judgments or treatment plans for conditions such as movement disorders or psychological conditions. MNMH is currently conducting several research studies in the field of digital health for psychiatric care.

Remote Patient Monitoring Using Radio Frequency Identification (RFID) Technology and Machine Learning for Early Detection of Suicidal Behaviour in Mental Health Facilities.

A/Prof Niall Higgins of MNMH and A/Prof Xiaohui Tao from the University of Southern Queensland (USQ) were supervisors for a PhD project by Thanveer Dasha Shaik which sought to build an RPM system using radio frequency identification (RFID) technology for early detection of suicidal behaviour in a hospital based mental health facility. The patient would wear a passive tag with RFID readers located in their rooms to identify suicidal behaviour and monitor vitals *(see Figure 7)*.

Figure 7. *Ultra-high frequency RFID reader antenna and passive RFID tag.*

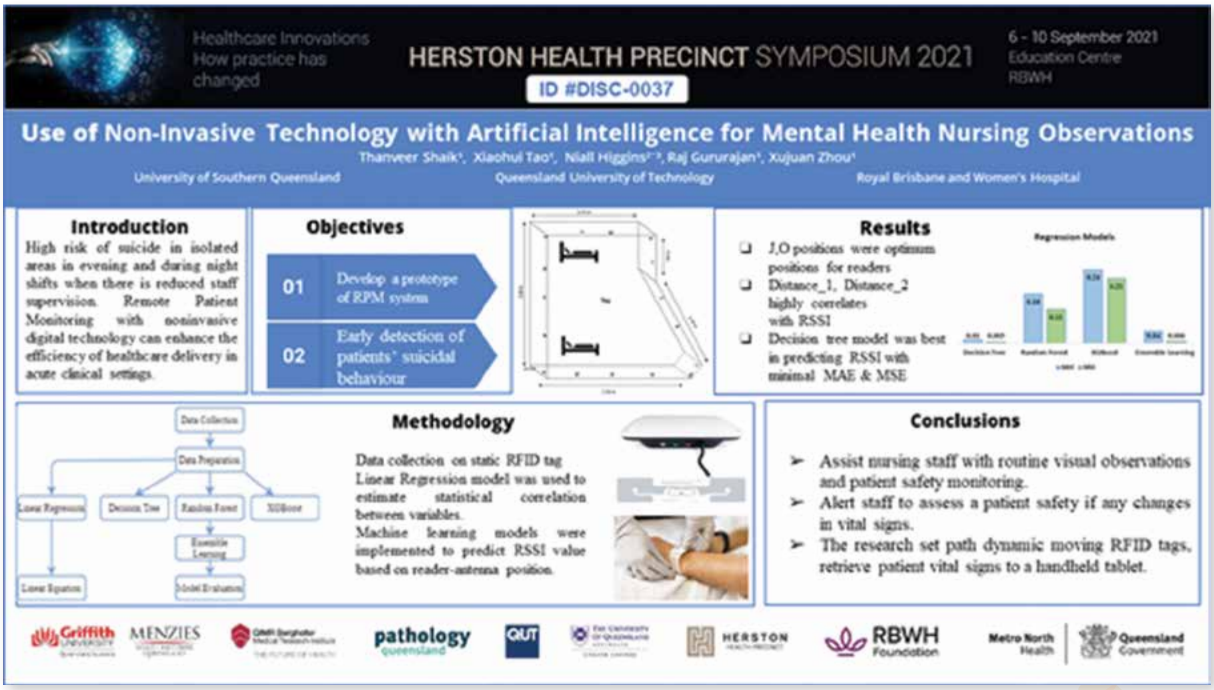
A range of machine learning models were investigated to help determine the optimum fixed positions of RFID reader–antennas in a simulated hospital ward based on the floor design of H Floor at the RBWH. The research set a path to analyse dynamic moving RFID tags and is currently building an RPM system to help retrieve patient vital signs such as heart rate, pulse rate, respiration rate and subtle motions to make this research state-of-the-art in terms of managing acute suicidal and self-harm behaviour in a mental health ward.

In-hospital suicides often occur in the evening and during night shifts when there is reduced staff supervision. During these times of high risk, suicides occur in isolated areas of the ward such as bathrooms and single rooms. In this study, a prototype for a Remote Patient Monitoring (RPM) system was developed for early detection of suicidal behaviour in a hospital based mental health facility.

Two UHF 870 radio frequency identification (RFID) readers with an integrated antenna were designed to read RFID tags within range of 5m using a one directional radiation pattern. The research team used AI machine learning models to calculate optimum positioning of the reader-antennas for the maximum received signal strength indicator (RSSI) signal from a non-battery powered passive RFID tag in a simulated hospital ward.

The biggest challenge for this study was tag readability due to reader–antenna radiation pattern and polarisation with reader-antenna and tag orientation. Two distance variables attributed to the readers were strongly correlated with dependent RSSI variable and a value decrease in these two variables enhanced the RSSI signal. The Decision Tree machine learning algorithm was best at predicting RSSI using regression modelling with mean absolute error 0.01 and mean squared error 0.003.

The clinical utility of this system lies with routine visual observations and patient safety monitoring by nursing staff. Staff could be alerted by an RPM system to return to a patient room and assess the safety of this patient if they have a change in vital signs or indeed if two sets of vital signs indicate sexual assault. The research set a path to analyse dynamic moving RFID tags and to build an RPM system to retrieve patient vital signs such as heart rate and respiration rate and send to a handheld tablet that is used by nurses for recording intermittent visual observations.



Healthcare Innovations
How practice has changed

HERSTON HEALTH PRECINCT SYMPOSIUM 2021

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6 - 10 September 2021
Education Centre
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Use of Non-Invasive Technology with Artificial Intelligence for Mental Health Nursing Observations

Thanveer Shaik[1], Xiaohui Tao[1], Niall Higgins[2,3], Raj Gururajan[1], Xujuan Zhou[1]

University of Southern Queensland | Queensland University of Technology | Royal Brisbane and Women's Hospital

Introduction

High risk of suicide in isolated areas in evening and during night shifts when there is reduced staff supervision. Remote Patient Monitoring with noninvasive digital technology can enhance the efficiency of healthcare delivery in acute clinical settings.

Objectives

01 Develop a prototype of RPM system

02 Early detection of patients' suicidal behaviour

Results

- ☐ J,O positions were optimum positions for readers
- ☐ Distance_1, Distance_2 highly correlates with RSSI
- ☐ Decision tree model was best in predicting RSSI with minimal MAE & MSE

Methodology

Data collection on static RFID tag
Linear Regression model was used to estimate statistical correlation between variables.
Machine learning models were implemented to predict RSSI value based on reader-antenna position.

Conclusions

- ➢ Assist nursing staff with routine visual observations and patient safety monitoring.
- ➢ Alert staff to assess a patient safety if any changes in vital signs.
- ➢ The research set path dynamic moving RFID tags, retrieve patient vital signs to a handheld tablet.

More in the way of Artificial Intelligence: Early screening for changes in mood

MNMH is also investigating the uses of Affective Computer technology. One research project which is currently underway aims to apply Affective Computer technology to assist consumers with symptoms of depression to self-identify a deterioration in their mood simply from the voice analysis of their day-to-day phone calls using their smart phone. Consumers have been invited to download an App that we have developed with scientists from University of Southern Queensland. All the processing is conducted using computer-generated speech features which have been widely used in the literature for speaker diarisation and emotion extraction. We have developed Artificial Intelligence (AI) based algorithms to learn the complex relationship amongst these features and various emotional states and currently can detect a deterioration in mood two weeks before the consumer is scheduled for a routine clinical appointment with a mental health clinician. This work is continuing, and we aim to recruit more consumers to confirm our initial work.

The use of artificial intelligence (AI) can enhance the capabilities of digital health systems through processing recorded data and by training deep machine learning models to build efficient predictive systems. Another MNMH research study that we are currently conducting is to create an objective measure of distress based solely on the voice that draws from the scientific field of Affective Computing. MNMH provides support to consumers facing distress on a day-to-day basis through the 1300 MH CALL line, which receives approximately 26 calls per day. Currently there is no objective measure for distress and patient assessment is dependent on the clinical skills of the health professional taking the call.

We are aiming to develop a deep learning neural network architecture that can be ported as a software application to determine distress levels in the input speech segments instantly. The phone caller's speech will first be isolated using existing APIs and then passed through a distress inference system that we are currently building. Features or representations will be extracted from the raw speech and then be fed to the distress inference neural networks. This network will output each distress level in the range [0-10] (0: no distress, 10: highest distress) with a probability score, where the distress level with the highest probability will be the current level. The distress level can be simultaneously displayed using a web interface on a computer or smartphone. The non-expert phone operator can use the distress level to assess the urgency of a call to appropriately refer the call to an expert or to order services such as police, ambulance etc. These and other research studies in digital mental health align directly with one of the key elements in our current Health Service Strategy 2015-2020 which is to: *"Build on existing relationships with emergency services in joint responses to people who may be at risk/in crisis, including co-responder models, implemented in priority areas of need"*.

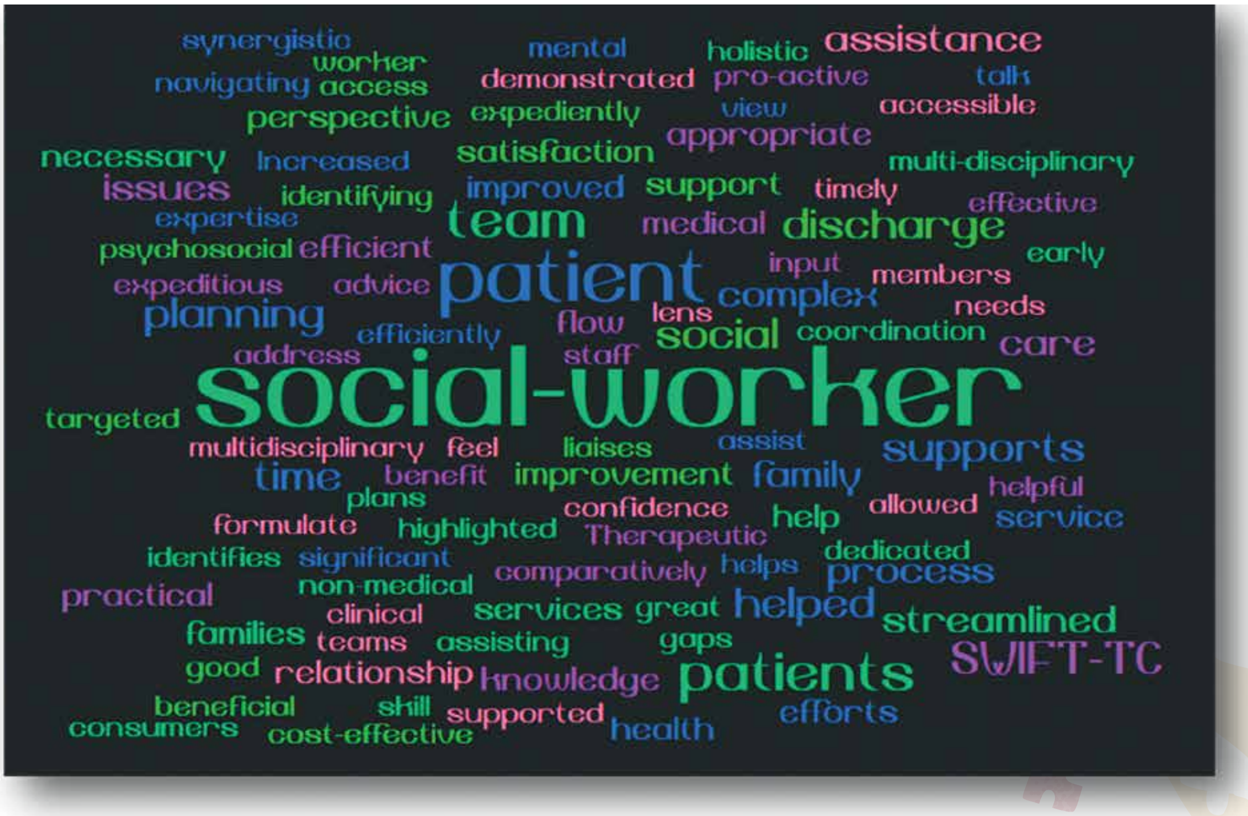
Social Work Inpatient Flow and Transition to Community (SWIFT-TC)

In 2021, Senior Social Worker Michelle Carter, supported by Social Work professional lead Alison Palmer and social workers Rebeka Riggs and Jacqui Vaevaemaki embarked on a project to highlight the vital role of social work services to the Redcliffe Caboolture acute inpatient units. The inpatient units at Redcliffe Caboolture Mental Health were the only inpatient units in MNMH without designated social work clinicians and it was recognised that Social Workers are uniquely placed in their ability to identify and address complex psychosocial barriers and socioeconomic disadvantage in our consumers. These factors are often barriers to discharge and increase the risk of relapse and readmission. The idea behind this project was to demonstrate the value of including social work services into the treatment plan in inpatient units which would allow for rapid, cohesive, and collaborative care.

The project entailed an eight-week trial for the implementation of social workers with an aim to support the discharge of consumers and to provide psychosocial assessments and interventions including complex care co-ordination. They sought to improve the social and health outcomes for inpatients by assertively and proactively connecting care to recovery throughout an individual's admission and discharge from hospital. They also aimed to collaborate with clinical staff to identify problems, create solutions and plan to reduce barriers to discharge. Over the trial period the team provided intensive and brief social work interventions to 76% of admitted consumers. Further, one third of patients were identified as homeless and referred to housing providers and assisted in accessing accommodation support. The team also administered 37 family focussed interventions, 97 psychosocial assessments resulting in 212 interventions, and 14 individual child safety and domestic violence interventions. They also saw a decrease in the average length of stay and readmission rates compared to 2019 and 2020 data for the same period.

The team surveyed the clinical staff on the wards to understand the impacts of the project. There was a 90% response rate amongst the doctors with 100% of respondents reporting positive experiences as to the value and benefits of having social work services incorporated into the treating team. Staff perceived that having a psychosocial perspective applied early in the assessment phase also addressed some reports of job dissatisfaction and stress among the team that was associated with undertaking tasks outside their scope of practice. This project is a great example of how quality improvement projects can build the evidence needed to better the care provided by the service. As a result of the incredible success of this project, social workers have now been permanently funded to continue working on the wards at RedCab Mental Health.

Figure 8. *Word cloud of Consultant and Registrar written feedback regarding the SWIFT-TC pilot project.*



Laura Freeburn: Recipient of the 2022 Clinical Excellence Queensland Healthcare Improvement Fellowship

Laura Freeburn
Nurse Educator
Metro North Mental Health Service

Who are you?

I am a Registered Nurse working as one of the Nurse Educators at MNMH RBWH. I started working in mental health at the Royal in 2010 as an AIN and have been fortunate to have worked across many units in a variety of nursing roles over this time. I hold a conjoint position with QUT, so one day a week you'll find me down the road at their Kelvin Grove campus as one of the lecturers there, representing mental health in their school of nursing.

Tell us about your research interests?

My research interests lay within trauma informed care, how can we provide the best possible care to our consumers by asking the question "what's happened to you", instead of "what's wrong with you" and acknowledging how past experiences influence current experiences. Additionally, through trauma informed care, I am passionate about staff wellbeing, acknowledging the impact trauma has on staff and how we can support each other and build resilience.

Tell us about your project and your recent successful fellowship?

Through the EB 10 innovation fund I had the opportunity with work with some incredible colleagues on a dedicated trauma informed care project. This project had a strong focus on education and awareness with a series of workshops delivered and supporting documents developed. I have been fortunate to have gained a position with the Healthcare Improvement Fellowship through Clinical Excellence Queensland for 2022. This fellowship supports front-line clinicians to become future leaders in healthcare improvement by providing them with high-level capability across a breadth of approaches to safety and quality. It will certainly be a big year ahead, but I look forward to the challenge.

What are your future research goals, how would you like research to fit into your career?

Research is so fundamental to informing our practice and ensuring we are providing the highest standard of care to our consumers. I hope research will always be a part of my career, addressing contemporary challenges we face in health care, and more specifically mental health nursing.

What advice would you give to someone who is interested in starting a project?

Collaboration is key. No matter what size your project, integral to the success of it is engaging with others, from corridor conversations to partners and key stakeholders. People will be invested in your success and will always want to help.

Associate Professor Dylan Flaws: Metro North Research Fellowship and his work on Post Intensive Care Syndrome (PICS) and ICU Experiences

A/Prof Dylan Flaws
Psychiatrist
Redcliffe Caboolture Short Stay Unit
Metro North Mental Health Service

A/Prof. Dylan Flaws completed his RANZCP Fellowship in 2021 and has since been working as a psychiatrist in the Caboolture Mental Health Short Stay Unit. Research has been a feature throughout A/Prof Flaws' training. He completed a master's degree during medical school, commenced a PhD and published 10 papers in high impact journals, including the Lancet. In his first year on the RANZCP training program he was awarded a $250,000 Junior Doctor Research Fellowship and began investigating delirium. He completed his PhD during his registrar training and became an Adjunct Associate Professor with QUT as an advanced trainee. His PhD work has been cited in 10 countries including USA, Canada and UK and across the 10 fields of research including Biochemistry, Mathematics, and Environment Sciences, and 6 patent citations and been mentioned in international guidelines including the UK NICE Guidelines, US National Bureau of Economic Research and Canadian Agency for Drugs and Technology in Health. The chest pain tool "EDACS-ADP" has been widely validated internationally including a US study of 112,000 patients where it was safe and superior to other strategies. It has been endorsed in international guidelines such as the American Heart Association, Brazilian and Indian Colleges of Cardiology who recommended it as the most suitable approach for the Indian setting. EDACS-ADP has since been adopted in 21 Hospitals in California, Hennepin County Medical Centre, and in Tehran. By the time he completed his fellowship, he had published 26 papers. He is now focused on the psychological recovery of patients suffering a critical illness. To-date he his work has been cited over 2,300 times.

10
publications

12
presentations
(6 as invited speaker)

4
four grants
totalling over
$800,000

$20,000
top-up
UQ fellowship

Understanding Post-intensive care recovery:

In his critical commentary A/Prof Flaws highlighted the need for a reconceptualisation of PICS. Currently, the interventions that exist have only shown short to medium term benefits. He suggests that this is due to an over simplified approach being used to conceptualise PICS. As it stands, PICS is commonly considered as a diagnosis that has a characteristic set of symptoms, however this is not the case. The circumstances that lead to a person's admission into ICU, and the environment waiting for them at discharge will differ in every case. Likewise, each person will also have a unique background with coping strategies, supports, and comorbidities that may influence their experiences of ICU. It would be consequently expected that presentations of PICS may differ case-by-case. Therefore, the precursors and contextual factors surrounding a person should be used to inform the way PICS is treated. In his guest editorial for Nursing in Critical Care, A/Prof Flaws suggested that there is limited evidence or agreement about the precursors and contextual factors to be able to identify risk factors predicting PICS in both adult and child populations. There is also a lack of research exploring in-hospital, modifiable risk factors such as the ICU environment, interactions with staff and other patients, and visits from family and friends.

Above: *Image courtesy of the Critical Care Research Group.*

The ICU of the Future:

In his work as the Head of Mental Health Research in the Critical Care Research Group (CCRG), A/Prof Flaws has recently contributed to filling this gap in the literature, specifically relating to the ICU environment. This contribution was done in collaboration with the ICU of the Future project manager, Oystein Tronstad and the TPCH CCRG. Evidence already exists that suggests that the ICU environment can be detrimental to staff and patients. The generally noisy environment increases errors made by staff and decreases job satisfaction, whilst also disrupting patient sleep and consequently contributing to immune system dysfunction, infection rates, falls and delirium. In addition to disrupted sleep, the noise and alarms present in ICU's cause patients and their family anxiety and stress. Furthermore, the lack of natural lighting has been identified as problematic for patients and staff. Currently, lighting is often maintained at a low illumination. For patients this can interrupt their natural circadian rhythm, once again interfering with sleep. Access to natural light and views can also positively affect staff satisfaction, mood, and concentration leading to better patient care, whilst lack of natural light can increase tiredness, lower mood, and lead to more human errors.

Given the impacts of the current environment in ICU's, there is a need to investigate how this might be improved. This was the objective of two qualitative studies by A/Prof Flaws and his colleagues investigating the ICU environment. Their aim was to investigate and understand the perspectives and experiences of clinicians, patients, and families to inform the design of an optimised ICU bedspace. The first study described the experience of clinician and the second focused on patients and their families. The data collection process involved focus groups and interviews with 30 clinicians, 17 patients and seven family members.

Above: *ICU of the Future team, Project Manager, Oystein Tronstad, Dylan Flaws and Professor John Fraser with TPCH Executive Director Tami Photinos and staff. Image courtesy of the Critical Care Research Group.*

When asked to envisage the ideal ICU, there were common themes shared by clinicians, patients, and families. Ideas included less noise and more natural lighting, in addition to better cognitive stimulation for patients and access to the outdoors for fresh air and natural light. Patients would like to see greater normalcy and ability to stay connected to their friends, family, and the outside world. Staff suggested utilising wireless technology for lines and attachments and generally more space to create a more comfortable, less cluttered environment. They would also like to see the replacement of curtains with something which will better preserve of privacy and dignity of patients and offer a better sound barrier between beds.

Overall, it was acknowledged by participants that the current environment in ICU is suboptimal and potentially hinders recovery. Therefore, it is obvious from this work that there is space for change in ICU environments and the way ICU patients are followed up and managed after ICU discharge. The perspectives of clinicians, patients, and their family members can be utilised to inform future designs of ICU's which could potentially lead to better patient outcomes, and better staff performance and satisfaction. Supported by funding from The Common Good Foundation, the TPCH CCRG team have developed a novel ICU bedspace design which will be installed into 2 bedspaces at TPCH ICU this year.

Above: *ICU of the Future architect's impression. Image courtesy of the Critical Care Research Group.*

eDIS-ICU – A new way to screen for ICU Delirium.

Delirium is a common complication of an ICU admission known to complicate recovery. Unfortunately, it is inconsistently diagnosed by clinicians. Current screening tools require specialist expertise and/or training. Some are time-consuming to administer, and reliability in routine clinical practice is questionable. The team at the TPCH CCRG, working in collaboration with A/Prof Flaws, have developed an innovative app designed to enable efficient and sensitive screening for delirium without specialist training. The pilot validation of their eDIS-ICU electronic screening tool was published in 2021 where they found it to be non-inferior when compared to the currently popular CAM-ICU pen-and-paper screening tool.

Shortly after the publication of the paper *"Screening for delirium in the intensive care unit using eDIS-ICU – A purpose-designed app: A pilot study"*, the team were approached by a research team wanting to test eDIS-ICU in Japan. This has culminated in a multinational validation which is currently underway in Australia, Japan, and Estonia in 2022.

A protocol for tracking outcomes post intensive care (TOPIC).

Looking to the future, A/Prof Flaws will begin actively recruiting to a project that aims to describe recovery after admission to ICU, including patient reported outcomes, predictors, and correlates for patients who experience PICS. As PICS is an emerging condition, the current literature addressing the effectiveness of interventions is limited and conflicting. In this project, A/Prof Flaws hopes to collect data from 300 patients over 12-months using clinical records and self-reported instruments to produce results around physical, cognitive, and psychological functioning. He and his team will follow up with these patients 6 weeks and 6 months after they leave ICU. With this data, A/Prof Flaws hopes to develop prediction and screening tools to improve the post-ICU rehabilitation and prevention of PICS. This process will also be repeated to measure the effect the ICU of the Future redesign has on patient recovery trajectories.

He will also be commencing a new interventional study in collaboration with the Redcliffe Intensive Care Unit and Phoenix Australia in 2022. They will explore whether an early psychiatric review in a post intensive care clinic can improve patient outcomes and reduce morbidity.

2021 Dissemination Activities

Journal Articles:

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Books and Chapters:

1. **Byrne, G.J.,** Pachana, N.A. (2021). *Anxiety in Older People: Clinical and Research Perspectives.* Cambridge University Press: Cambridge, England
2. **Fleming, C.** (2021). Single Session Family Consultation with Adults Affected by Eating Disorders. In M. F. Hoyt, J. Young, & P. Rycroft (Eds.), *Single-session thinking and practice in global, cultural, and familial contexts: expanding applications* (1st ed.). Routledge.

Conference Presentations:

Invited Speaker:

1. **Flaws, D.** (2021). Junior Doctor Perspective on Research. RBWH Junior Doctor Research Masterclass
2. **Flaws, D.** (2021). A protocol for Tracking Outcomes Post Intensive Care. Herston Health Precinct Grand Rounds
3. **Flaws, D.** (2021). Recovery After Critical Illness and Expert Panel Member. Queensland Critical Care Research Network (QCCRN)
4. **Flaws, D.** (2021). The Long Road of Mr. T. Caboolture Grand Rounds
5. **Flaws, D.** (2021). Mental Health Short Stay Unit. 10th Annual Australian Rotary Mental Health Symposium
6. **Flaws, D.** (2021). Recovery After Critical Illness. Psychiatry of Old Age advanced training lectures
7. **Scott, J.** (2021). Invited Plenary speaker (Webinar) Modifiable risk factors for mental disorders in children and adolescents. Royal College of Paediatrics and Child Health Conference, Singapore
8. **Braum, A.** (2021). A case study – Clinical scenario over a period of time. RANZCOG 2021 QLD/NSW State Scientific Meeting.

Oral Presentations:

1. **Buckley, J., Li, H.K.,** Clark, S., **Chatfield, A. & Durant, L**. (2021). What do practitioners want to know about in the alcohol and other drug space? Preliminary e-learning package access insights. *Drug and Alcohol Review, 40*(S1), S51. Presented at APSAD Scientific Drug and Alcohol Conference
2. Conway, A., Valerio, H., Peacock, A., Degenhardt, L., **Hayllar, J.,** Harrod, M. E., Henderson, C., Read, P., Gilliver, R., Amin, J., Christmass, M., Dunlop, A. J., Monterbello, M., Whitton, G., Reid, D., Lam, T., Alavi, M., Silk, D., Marshall, A., Dore, G. J., Treloar, C., & Grebely, J. (2021). Opioid overdose and naloxone access among people who recently used opioids or received opioid agonist treatment in Australia: the ethos engage study. *Drug and Alcohol Review, 40*(S1), S59. Presented at APSAD Scientific Drug and Alcohol Conference
3. **Delifel-Carlion, H., Boyce, M. & Wilson, H.** (2021). A novel responsive telehealth intervention to address overdose risk for people recently released from prison – the ROADS (Released Offender Alcohol and Drug Support) project. *Drug and Alcohol Review, 40*(S1), S64. Presented at APSAD Scientific Drug and Alcohol Conference
4. **Durant, L., Li, H. K., Higgins, N. & Hayllar, J.** (2021). Nurse-led overdose training in public opioid treatment centres: demonstration and first steps. Presented at Walk on the Wild Side (WOWS) 14 Symposium
5. Fischer, T., Agar, M., Hosie, A.M. & **Teodorczuk, A.** (2021). Unpacking agitation in practice: a call for greater precision. Presented at American Delirium Society Round Table
6. **Flaws, D.** (2021). Dangerous patients and aggression in the ICU: A role for Consultation-Liaison? Presented at RANZCP Consultation Liaison Symposium
7. **Flaws, D.** (2021). Recovery After Critical Illness. Presented at Australasian Delirium Association Congress DECLARED2021
8. **Flaws, D.** (2021). Recovery After Critical Illness. Presented at RANZCP Consultation Liaison Symposium
9. **Flaws, D.** (2021). Redesigning the ICU environment to optimise patient outcomes and post ICU recovery. Presented at UQ Seminar
10. **Flaws, D.** (2021). The Long Road of Mr. T. Presented at Psychiatry Education Session on Recovery After Critical Illness. The Prince Charles Hospital

11. **Flaws, D.** (2021). Tracking outcomes post intensive care (TOPIC). Presented at Redcliffe Hospital Research Symposium
12. **Flaws, D.** (2021). Tracking outcomes post intensive care (TOPIC). Presented at Caboolture Research Symposium
13. **Flaws, D.** (2021). Wellbeing during ICU Training. Presented at College of Intensive Care Medicine of Australia and New Zealand Annual Scientific Meeting
14. Gallagher, E., **Teodorczuk, A.,** & Traynor, V. (2021). Symposium 4: Delirium Education. Presented at Australasian Delirium Association Congress DECLARED2021
15. **Kelly, J.,** Meredith, P., **Taylor, M., Morphett, A. & Wilson, H**. (2021). Substances and the senses: An important piece of the recovery puzzle. *Drug and Alcohol Review, 40*(S1), S88. Presented at APSAD Scientific Drug and Alcohol Conference
16. **Kelly, J., Wilson, H. & Davis, C.** (2021). Breaking down barriers and optimising care for lesbian, gay, bisexual and transgender (LGBT) people in a tertiary alcohol and drug treatment service. *Drug and Alcohol Review, 40*(S1), S89. Presented at APSAD Scientific Drug and Alcohol Conference
17. **Li, H. K, Durant, L., Higgins, N. & Hayllar, J.** (2021). Establishing nurse-led overdose prevention training in public medically-assisted opioid treatment centres: Lessons learned. *Drug and Alcohol Review, 40*(S1), S97. Presented at APSAD Scientific Drug and Alcohol Conference
18. **Li, H. K., Buckley, J., Taylor, M.** & Clark, S. (2021). Checktools: Access insight to ultra-brief interventions for alcohol and drug use. *Drug and Alcohol Review, 40*(S1), S52. Presented at APSAD Scientific Drug and Alcohol Conference
19. **Li, H. K., Durant, L., Higgins, N. & Hayllar, J.** (2021). Focusing on opioid overdose prevention within public opioid treatment clinics in a climate of change. Presented at the International Mental Health Nurses Conference
20. Montgomery, A., Todd, J., Jones, C., Koroitamana, J., Grealish, L., Wand, A., Billett, S., **Teodorczuk, A.** (2021). The DEMS-DOSS study: validating a delirium monitoring tool in hospitalised older adults. Presented at Australasian Delirium Association Congress DECLARED2021
21. **Mounsey, R., Li, H. K. & Francis, C.** (2021). Barriers in managing tobacco dependence in Queensland youth: highlights from interviews with clinicians. *Drug and Alcohol Review, 40*(S1), S111. Presented at APSAD Scientific Drug and Alcohol Conference
22. **Palmer, K., Ralph, A. & Wilson, H.** (2021). Reducing Barriers to Alcohol and Drug Treatment through a Structured Brief Intervention Program Delivered by Adis 24/7 Alcohol and Drug Support. *Drug and Alcohol Review, 40*(S1), S116. Presented at APSAD Scientific Drug and Alcohol Conference
23. **Parker, S.** (2021). Asked to leave or choosing to go: predictors of early disengagement from community-based residential rehabilitation for people experiencing severe and persistent mental illness. Presented at 20th WPA World Congress of Psychiatry [virtual congress]
24. **Parker, S.** (2021). Community-based residential rehabilitation: do consumers improve, who completes care, and how do consumers reflect on the experience. Presented at RANZCP Congress
25. **Parker, S.** (2021). Discontinuation of community treatment orders prior to transition from intensive residential mental health rehabilitation care: the association with post-discharge outcomes. Presented at 20th WPA World Congress of Psychiatry [virtual congress]
26. Siefried, K. J., Acheson, L. S., Dunlop, A. J., Lintzeris, N., Christmass, M., Bonomo, Y., Arunogiri, s., **Hayllar, J.,** & Ezard, N. on behalf of the study investigators. (2021). A Clinical Research Network approach to a trial of oral Lisdexamfetamine for the treatment of acute Methamphetamine withdrawal. *Drug and Alcohol Review, 40*(S1), S132-S133. Presented at APSAD Scientific Drug and Alcohol Conference
27. Siefried, K. J., Ezard, N. Christmass, M., **Hayllar, J.,** & Ali, R. on behalf of the NCCRED Methamphetamine and Emerging Drugs Clinical Research Network Working Group. (2021). Towards an Australian clinical research network for methamphetamine and emerging drugs–outcomes of the national centre for clinical research on emerging drugs methamphetamine and emerging drugs clinical research network working group 2018-21. *Drug and Alcohol Review, 40*(S1), S133. Presented at APSAD Scientific Drug and Alcohol Conference
28. Suetani, S, White, A, Down, J, Teo, J, Korman, N, & **Parker, S.** (2021). The return of the breakfast club: on being influenced and starting to influence other. Presented at RANZCP Congress
29. **Taylor, M.** (2021). Smells like happy. Presented at the Breakthrough Forum
30. **Taylor, M. & Li, H. K.** (2021). Providing access to sensory approaches training to alcohol and other drug clinicians. *Drug and Alcohol Review, 40*(S1), S141. Presented at APSAD Scientific Drug and Alcohol Conference
31. **Taylor, M.,** Phillips, J. & **Li, H. K.** (2021). Towards trauma informed care when working with alcohol and drug issues. *Drug and Alcohol Review, 40*(S1), S142. Presented at APSAD Scientific Drug and Alcohol Conference
32. **Teodorczuk, A.** (2021). Delirium Education: where are we now? Presented at Australasian Delirium Association Congress DECLARED2021

33. Valerio, H., Alavi, M., Conway, A., Silk, D., Treloar, C., Martinello, M., Milat, A., Dunlop, A., Murray, C., Henderson, C., Amin, J., Read, P., Marks, P., Degenhardt, L., **Hayllar, J.,** Reid, D., Gorton, C., Lam, T., Montebello, M., Wade, A., Dore, G. J., & Grebely, J. (2021). Declining prevalence of current hepatitis c virus infection associated with increased treatment uptake among people who inject drugs: the ethos engage study. *Drug and Alcohol Review, 40*(S1), S146. Presented at APSAD Scientific Drug and Alcohol Conference

34. Watson, D, **Parker, S,** Harvey, S, & McGeorge, P. (2021). Rehabilitation psychiatry is all about the world around us. World Association for Psychosocial Rehabilitation Australia and RANZCP Section of Social, Cultural and Rehabilitation Psychiatry joint symposium. Presented at RANZCP Congress.

Poster Presentations:

1. **Li, H. K., Cochrane, P.** & Veitch, T. (2021). SCOT: Developing a shared care model of service for treatment opioid dependence from conceptualisation to implementation. *Drug and Alcohol Review, 40*(S1), S96. Presented at APSAD Scientific Drug and Alcohol Conference

2. Shaik, T. B., **Higgins, N.,** Gururajan, R., & Zhou, X. (2021). Use of Non-Invasive Technology with Artificial Intelligence for Mental Health Nursing Observations. Presented at the Herston Health Precinct Symposium 2021.

Grants:

1. Amminger, P., McGorry, P., Lin, A., Yung, A., Nelson B., Wood, S., Berger, M., Killackey, E., Thompson, A., O'Donoghue B., **Scott, J. G.,** Clarke, S., McGregor, I., Yuen, H. (2021-2025). The Cannabidiol Early Psychosis Project: A Randomised Controlled Trial. *Wellcome Trust* ($6,236,731.00)

2. **Davidson, F., Heffernan, E., Waterson, E.,** Southalan, L., Kinner, S., Borschmann, R. & Doherty, M. (2021-2022). National Principles for Forensic Mental Health. *National Mental Health Commission* ($98,000)

3. **Heffernan, E.,** Williams, M., Harden, S., **Scott, J.,** Watson, M., Stathis, S., Kinner, S., Meurk, C., Steele, M., Pratt, G. (2021-2023). IMHIP-Youth: A multi-disciplinary collaboration to embed and evaluate a model of social and emotional wellbeing care for Indigenous adolescents who experience detention. *Medical Research Future Fund (MRFF)* ($1,988,280.32)

4. Hielscher, E., **Scott, J. G.,** Crandon, T. (2021-2022). Fostering sense of purpose in young people to prevent anxiety and depression. *Wellcome Trust* ($83,000.00)

5. Hieschler, E., **Scott, J.G.,** Lawrence, D., Batterham, P. (2021). Australian Youth Self Harm Atlas. *Suicide Prevention Australia Innovation Grant* ($66,065.00)

6. Pratt, G., Combo, M., Bernards, C., Ekberg, S., Isua, J., Medlin, L., **Burke, K.,** Birch, S., Meuter, R., Mushin, I., **Scott, J.,** Toombs, M., Williamson, D., Douglas, T., **Alchin, D., Henaway, C.,** Bean, N., & Williams, H. (2021). Communication training for mental health professionals: developing cultural sensitivity and capability to improve Aboriginal and Torres Strait Islander people mental health outcomes. *NHMRC Ideas Grant* ($2,899,349.72)

7. **Brigg, N., Flaws, D.,** & Tippett, V. (2021). Understanding Recovery and Tracking Outcomes Post Intensive Care (UR-TOPIC). *Jamieson Trauma Institute* ($25,000.00)

8. Tronstad, O., Liu, K., Sato, K., **Flaws, D.,** & Sutt, A. L. (2021). eDIS-ICU – An international validation study to improve accuracy of screening for delirium in the ICU. *The Common Good Foundation* ($35,312.17)

9. Tronstad, O., Fraser, K., **Patterson, S., Flaws, D.,** Lavana, J., Brown. J., Hornby, M., Pearse, I., Ramanan, M., Tabah, A., Tucker, R., Stocks, G., & Cameron, A. (2021). ICU of the Future. *Qld Motor Accident Insurance Scheme* ($156,750.00)

10. Tronstad, O., **Patterson, S., Flaws, D.,** Lavana, J., & Fraser, K. (2021). Introduction and/or upgrade of multiple technologies as part of a patient centric ICU redesign. *Clinical Excellence Queensland – Queensland Technology Futures Fund* ($586,797.00).

Acknowledgements

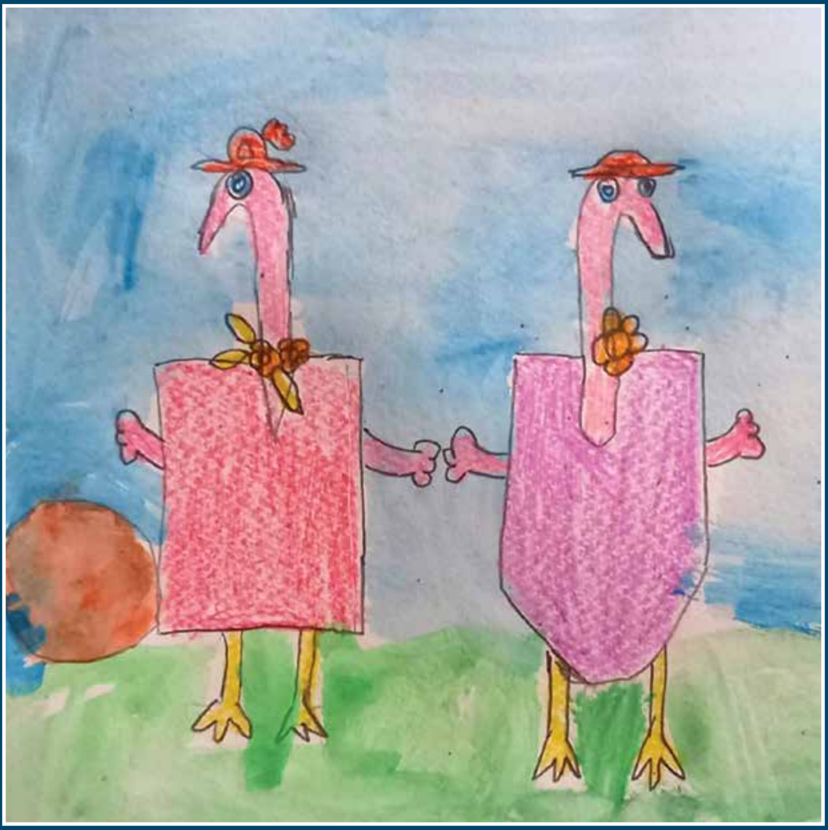
Thank you to all our consumers, clinicians, researchers, and partners who contributed to research or quality improvement projects in 2021.

MNMH would also like to thank our funding partners, including the RBWH Foundation, The Common Good and MNHHS for their generous funding of research. Your support allows our clinician-researchers to pursue innovations and improve care.

A special thank you also to the exceedingly talented consumers, Donna and Sam, whose art is displayed on the front and back covers of this review.

Butterfly's by Sam (front cover) *– Fluttering about together, releasing tension and solving problems, easing the stress from your mind and soul is an artwork created by Sam.*

Shovel and Spade by Donna (back cover) *– Donna created this fun image that was inspired by a garden themed art group. It's a happy colourful drawing representing the freedom of being outside.*



Metro North Mental Health provides specialist assessment and treatment services for people of all ages experiencing problems with mental health and/or substance use. Integrated community and inpatient services are provuided through three area based services: Inner North Brisbane, The Prince Charles Hospital and Redcliffe Caboolture Mental Health Services.