NUS National University of Singapore

Social Service Research Centre
Faculty of Arts & Social Sciences

SSR Conference 2024

Youth Mental Health Landscape: Upstream Prevention and Downstream Intervention

CONFERENCE PROCEEDINGS

Proceedings of the SSR Conference 2024 – Youth Mental Health Landscape: Upstream Prevention and Downstream Intervention

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Contributors

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Daphna Arbell Kehila has over 23 years of experience as an Expressive Arts Therapist. Living and working in the Asia Pacific region for more than three decades, Daphna deeply understands multicultural experiences, which she integrates into her work with various populations and organisations globally. Her work with The Red Pencil Singapore—a charity-based NGO dedicated to bringing creative arts therapy to individuals, groups, and families in Singapore—focuses on developing therapy programmes for the local community and providing clinical supervision to art therapists.

Denise Liu is a Principal Research Executive at Fei Yue Community Services. She has 14 years of experience in the social service sector and has published research on topics such as complex trauma and child abuse. She has also supported the evaluation of over 40 programmes and services such as therapeutic groupwork programmes, the Hidden Youth Outreach Service, and community development initiatives. Denise holds a Master's in Social Science (Psychology) from the National University of Singapore, and has been teaching and conducting training at institutions such as the Social Service Institute and the Singapore University of Social Sciences since 2013.

Dennis W. H. Teo is a Research Specialist at Translational Research, National Council of Social Service (NCSS). His current work with the Enhancing Positive outcomes in Youth and the Community (EPYC) team focusses on (a) understanding the changes that young offenders undergo upon entering the justice system and (b) estimating the effectiveness of intervention programmes aimed to rehabilitate these youths.

Eddie M. W. Tong attained his Ph.D. in Psychology from the University of Michigan in 2006 and is an Associate Professor in the Department of Psychology and Co-Director of the Social Service Research Centre (SSR) at the National University of Singapore (NUS). His main area of expertise is emotion, with a special focus on positive emotions and appraisal theories. He was recognised as a Rising Star by the Association for Psychology Science (APS) in 2011 and elected as a Fellow by APS in 2023. He is an Associate Editor of *Personality and Social Psychology Bulletin* and has been on the editorial board of several journals including *Emotion*. He has received numerous teaching awards including being in NUS's Honour Roll of the Annual Teaching Excellent Award.

Elizabeth Chia is the lead researcher for SHINE Children and Youth Services. She graduated with a Master's in Social Science (Psychology) from the National University of Singapore and has had over 10 years of experience conducting research in the social service sector. Her research focus lies with the children and adolescent population in Singapore, and she has conducted research on a vast number of topics, including perspectives on education and the role of digital technology in mental health. She has also supported multiple evaluation efforts of programmes and services, where she hopes to cultivate a data-driven practice within the organisation.

Eric Sng is currently overseeing Youth Mental Health & Volunteerism Capabilities at SHINE Children and Youth Services. A social worker by training, he has served in the social services for over 15 years and has a range of experiences in youth development, diversionary, outreach and mental health work. He is passionate about pioneering new programmes or approaches to close service gaps and meet needs more effectively. He also enjoys developing the next generation of social service practitioners and is a social work field educator, lecturer and tutor at the National University of Singapore.

After earning her PhD from the University of Basel, **Florence Lee** returned to Singapore and worked at the Institute of Mental Health (IMH) for 6 years. With her training from TCA College, she is currently practicing as a counsellor at a family service centre. In 2018, Florence co-founded a local ground up initiative, SOAR, to tackle the issue of stigma against people with mental health issues. Together with collaborators like Youth Corps, IMH and People's Association, SOAR has co-produced more than 5 workshop series pertaining to mental health and reached more than 400 unique workshop participants. Florence is a SG Strong Fellow.

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Hazirah Hoosainsah is the Community Manager of *let's talk*, the community forum that runs in tandem with *youth mindline*. Drawing from her background in clinical work, she also leads the team of professionals responding to questions surrounding youth mental health on the forum. She is particularly passionate about promoting help-seeking behaviour, dispelling the stigma around mental health, and advocating for holistic wellness within the youth demographic. Hazirah completed her Master's in Clinical Psychology in Seoul, South Korea and has worked in the field of mental health for over 5 years.

Janice Huiqin Weng is a Deputy Director at the Ministry of Health Office for Healthcare Transformation (MOHT). She leads the digital mental health programme, focusing on designing and co-creating innovative digital solutions to improve the health and well-being of citizens. An award-winning initiative developed during the pandemic period is *mindline.sg*, an anonymous self-care and self-help therapy platform. Prior to joining MOHT, Janice held leadership positions in consulting firms and led teams to deliver public policy and digital transformation projects for governments. She also has extensive experience in the human and social services sector, specialising in outcome measurement and nonprofit capacity building. Janice has a Master in Public Policy from the Lee Kuan Yew School of Public Policy.

Janil Puthucheary, 50, was elected as a Member of Parliament in 2011. He is currently Senior Minister of State, at the Ministry of Communications and Information, and the Ministry of Health. He is Minister-in-Charge of GovTech, the government technology agency, and a member of the Smart Nation Inter-Ministerial Committee. He chairs the Inter-Agency Task Force on Mental Health and Well-being and is a member of the Child and Maternal Health and Well-being Taskforce. He is also a member of the Ministerial Committee on Child Health and Development. He is a member of the National Integration Council and an Advisor to Cyber Youth Singapore. As part of the People's Association, he is a Board Member, Advisor to the PA Youth Movement, and Advisor to Narpani Peravai.

Jianbin Xu is a Research Fellow at the Social Service Research Centre. He holds a PhD in Social Work from the National University of Singapore. His research interests include exploring the role of spirituality in ageing and examining the application of mindfulness, narrative therapy, and existential therapy in the social work context.

Jungup Lee is an Associate Professor in the Department of Social Work at the National University of Singapore. Her research seeks to refine the understanding of how adverse childhood events relate to subsequent behavioural and mental health outcomes for children and adolescents. Specifically, Dr Lee's research focuses on identifying multi-level risk and protective factors (e.g., family, peer, school, and community levels) that shape various patterns of externalising and internalising behaviours to facilitate the development of more effective intervention strategies for social workers providing services to children, adolescents, and young adults. Her research interests include cyberbullying, school violence and safety, child maltreatment, online harassment, technology-facilitated sexual misconduct, juvenile justice, and youth mental health and digital well-being.

Lay Hoon Seah works as a Senior Research Fellow at the Social Service Research Centre. Her research work entails the use of qualitative methods and analysis such as interviews, ethnographic observations, researcher-practitioner collaborative inquiry, thematic analysis, discourse analysis and applied linguistic analysis.

Mythily Subramaniam graduated from the Lady Hardinge Medical College, India. She received her PhD in Gambling Studies from Monash University and is currently Assistant Chairman Medical Board (Research) and Lead Investigator of the Programme of Mental Health Policy Studies at the Institute of Mental Health (IMH). She also has a concurrent teaching appointment at the NTU Lee Kong Chian School of Medicine and the NUS Saw Swee Hock School of Public Health. She has worked in the field of mental health for more than 15 years and her main academic and research interests include psychiatric epidemiology, psychosis and addictions.

Natasha Koo is a passionate advocate for mental wellness. She holds a Bachelor's degree in Social Work and is currently a Social Work Executive in the Backbone Team of a Special Project – Youth Integrated Wellness Centre. She has had experience being a youth mental health social worker and is also a mental health researcher. Natasha believes that mental wellness should be approached in a holistic manner by finding healing and caring for the body, soul, and spirit.

Nicole Liaw is a researcher with 4.5 years of experience in the social service sector in Singapore. With a background in psychology, she has also gained valuable experience working in neuroscience and cognition labs during her college days. Her interests focus on the intersection of psychological principles and social service practices, aiming to enhance well-being through evidence-based research and innovative approaches.

Rayner Kay Jin Tan is an Assistant Professor at the NUS Saw Swee Hock School of Public Health, and a Visiting Research Fellow at the National Centre for Infectious Diseases. His research focuses on the social determinants of health, implementation science, community engagement, and health equity of vulnerable communities. He is a lead at SG Mental Health Matters and a workgroup member of Project Hayat to develop a National Suicide Prevention Strategy in Singapore, as well as chairperson at a trauma and substance use recovery centre and charity, The Greenhouse Community Services Limited.

S Vasoo is Emeritus Professor at the Department of Social Work, National University of Singapore. He obtained his Doctorate and Master of Social Work from the University of Hong Kong and holds a Diploma in Social Studies with distinction from the University of Singapore. He authored a number of monographs on social issues and has published various such articles both internationally and locally. He was awarded the Honorary Life Member of the Singapore Association of Social Workers for his outstanding contributions to social work in Singapore. He was the Member of Parliament from 1984 to 2001 and he also served as Chairman of the Government Parliamentary Committee for Community Development. He is Advisor to a number of Voluntary Welfare Organisations in Singapore and is still actively involved in community development work and activities. He was awarded the Distinguished Alumni of the Faculty of Arts and Social Sciences, National University of Singapore, as well as the Faculty of Social Sciences, University of Hong Kong.

Serenella Tolomeo's research focuses on determining psychological and neural mechanisms underlying mental health conditions. Her research goals integrate psychological medicine, cognitive neuroscience, neuroimaging and decision-making neuroscience measures. Her research career began with a BSc degree in Experimental Psychology from the University of Milano-Bicocca (Italy) and subsequently obtained a MSc in Clinical Psychology, Neuropsychology and Developmental Psychology at the University of Milano-Bicocca (Italy). She obtained her PhD in Medicine from the University of Dundee (UK) in 2020. She spent two years as a postdoctoral fellow at NUS conducting cognitive neuroscience and neuroimaging studies in mental health. She is currently a Senior Scientist at IHPC, A*STAR.

Sonia Khiatani is a clinical psychologist currently working with the Response, Early Intervention and Assessment in Community Mental Health (REACH) team at the National University Hospital. She completed her Masters of Clinical Psychology at the University of Melbourne. Sonia has experience working with children and adolescents with a range of mental health issues, including depressive disorders, anxiety disorders and autism spectrum disorder amongst others, and has been working with the hidden youth population for the past 4 years.

Vanessa Koh graduated with a Bachelor's degree in Social Work and has previously worked with SHINE Children and Youth Services on areas focusing on service development of youth mental health programmes and conducting research. She has had a longstanding interest in the field of mental health and believes firmly in the need to adopt a macro-perspective to understand and address existing challenges through a collaborative approach with practice. She has recently graduated with a Master's in Philosophy, Politics and Economics and hope skills learnt from the programme could be used to contribute back to the social sector.

Zoe Tee is a senior social worker at Fei Yue Community Services. She is currently the Deputy Head of the Youth Department, leading the Integrated Service Provider (ISP) team and is also actively involved in macro social work relating to NEETs youth in Singapore. Previously, Zoe was involved in portfolios in the Ministry of Social and Family Development (MSF) relating to youth-at and in-risk. She was a probation officer and was subsequently involved in indirect social work practice such as operational policies relating to child welfare, such as the Family Guidance Order. Zoe is presently pursuing her master's in social work under the Ee Peng Liang Scholarship.

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About SSR

The NUS Social Service Research Centre (SSR) was set up in 2014 with the aim of bringing resource and ideas to promote and test social innovations and help evolve a new social infrastructure for Singapore's next phase of social development. We envision that bold social solutions provided through research can potentially bring about transformative improvements in the well-being of the underprivileged. Since its inception, the Centre has embarked on various research partnerships with government ministries and social service agencies in Singapore.

For more information, visit our website: https://fass.nus.edu.sg/ssr/

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1. Setting the Stage: Introduction to the Proceedings

Jianbin Xu and Lay Hoon Seah

The period of youth ushers in unique developmental tasks and challenges. In an era of rapid societal changes, technological advancements, and globalisation, young individuals who are seeking to establish themselves in society face numerous challenges including mental health challenges. It is important for them to find a beacon of hope and an anchor of support as they navigate these challenges. Understanding and addressing the mental health challenges and needs of youths can foster their hopefulness and resilience, uplift their mental well-being, bolster their functioning and thriving, and facilitate their future development.

As mental health evolves into a more multifaceted social concern, it deserves society's focused attention, thoughtful discussion, and conscientious action, entailing holistic, creative, and forward thinking. Mental health (particularly youth mental health) has become a vibrant area of policy, research, and practice in Singapore, with recent years witnessing a surge in attention, interest, and action. For example, the Interagency Taskforce on Mental Health and Well-being was established in July 2021, which launched the National Mental Health and Well-Being Strategy in October 2023. Under these circumstances, there is an increasing proliferation of discourses on the implications of and the solutions to the growing significance of youth mental health issues in Singapore. Echoing this crescendo, the NUS Social Service Research Centre (SSR) Conference 2024, themed "youth and mental health," was timely and significant. The event garnered strong attendance with over 500 attendees, including policymakers, educators, researchers, practitioners, and other stakeholders, both in person and online.

The conference aimed to discuss the antecedents and consequences of mental health conditions among youths, as well as to explore both upstream prevention and downstream intervention to bolster mental health functioning among youths. The conference was structured into four sessions: the opening session and three panels, which discussed various dimensions of youth mental health in the Singapore context. Panel 1 examined the risk and protective factors influencing youth mental health; Panel 2 explored the role of digital mental health in upstream prevention; and Panel 3 presented several downstream intervention innovations. Each panel featured three presentations.

The proceedings of this conference closely follow the conference structure. This introductory chapter provides a panorama of the conference proceedings, encapsulating a spectrum of findings, perspectives, and insights on empowering youth mental health.

A Compass for Navigating Youth Mental Health

The opening session launched the conference with an array of insightful and thought-provoking perspectives that inform youth mental health research and practice in Singapore.

In his welcome remarks, Associate Professor Eddie M. W. Tong, SSR's Director, noted that the rising concern surrounding mental health in Singapore has prompted the government to prioritise it nationally. From his perspective, the broader context surrounding young Singaporeans could contribute to their sense of insecurity and pessimism. He advocated a whole-of-society approach to addressing youth mental health issues in Singapore, which involves coordinated efforts from diverse segments of society. In addition to listing several ways of supporting youth mental health, he emphasised, "Perhaps most important of all, listen to our youths and not judge. Give them affirmation that they matter. Make them feel hope."

The Guest-of-Honour of the conference, Dr Janil Puthucheary, Senior Minister of State, Ministry of Health, delivered the keynote address. He outlined a distinct constellation of mental health challenges facing young people and reiterated the importance of in-person interactions. As mental health is a complex phenomenon affected by various interrelated individual, biological, and social factors, he called for a collective and holistic approach to addressing the social and health-related factors underlying youth mental health issues. From his perspective, both upstream endeavours to cultivate resilience from a young age and downstream efforts to address the mental health needs of young individuals are vital for youth mental well-being. He exemplified several of these efforts in his speech.

Dr S. Vasoo, NUS Emeritus Professor, presented the introduction speech. He emphasised the necessity of developing a system to identify and support young individuals at risk of mental health issues. He regarded it as vital to help a young person build "the capacity to come back." When discussing youth mental health challenges such as digital abuse and workplace retrenchment, he stressed that human touch matters and that enhancing counselling and follow-up services is crucial for assisting young people who have encountered such challenges. Dr Vasoo advised harnessing community forces to support, innovate, and experiment with initiatives and programmes for youth mental health.

Undercurrents of and Anchors for Youth Mental Health

Risk factors such as adverse childhood experiences and childhood trauma may constitute the treacherous undercurrents of life that have the potential to impair youth mental health. Addressing these risk factors can prevent them from exerting enduring deleterious effects on vulnerable youths. Conversely, protective factors tend to function as anchors for youth mental health. Reinforcing these anchors can empower young individuals to navigate the intricacies and dynamics of mental health. Panel 1 (titled *Risk and Protective Factors of Youth Mental Health Outcomes*) illuminates a multitude of risk and protective factors that correlate with mental health outcomes in youths.

In her chapter, *What Ails Our Youth: A Psychosocial Perspective of Youth Mental Health,* Associate Professor Mythily Subramaniam explores the risk factors and protective factors that may influence youth mental health. She notes that diverse factors spanning personal, social, and global levels shape the complexities of youth mental health. From her perspective, identifying risk and protective factors is instrumental in developing support systems and targeted interventions for youth mental health. She proposes a comprehensive approach to positive youth mental health that engages parents, schools, and communities, in addition to youths.

Associate Professor Jungup Lee's chapter is entitled *Exploring the Intersections of Trauma, Adversity, and Youth Mental Health and Promising Protective Buffers*. It demonstrates that bullying-related adverse experiences and childhood trauma are risk factors for youth mental health issues such as depression and anxiety. This chapter also discusses potential protective factors that may moderate the negative impact of risk factors on youth mental health and enhance youth mental well-being. The chapter holds clear implications for developing educational programmes about mitigating the negative impact of adverse and traumatic experiences on youth mental health.

The title of Mr. Dennis W. H. Teo's chapter is *Identifying Factors that Promote Long-term Recovery in Youth Mental Health*. This chapter presents a pioneering study of the fundamental factors that drive youths' long-term mental health recovery. As part of the Enhancing Positive outcomes in Youth and the Community (EPYC) project, this longitudinal study investigated 444 youths in Singapore. It identified cross-problem effects and protective factors that are relevant for youth mental health treatments and support. Based on this study, this chapter provides an evidence-based lens through which practitioners can appreciate the long-term impact of several significant risk and protective factors on youth mental health.

These chapters converge to generate a relatively comprehensive picture of the undercurrents and anchors that may impact the dynamics of youth mental health. With a deeper appreciation of these risk and protective factors, social service providers would be in a better position to design and deliver prevention, early identification, and early intervention services, nurturing qualities such as competence, resilience, mettle, and equilibrium in children and youths and developing a comprehensive support system for them.

Digital Initiatives: A Beacon of Hope for Upstream Prevention

The internet, smartphone apps, and other digital technologies have an increasingly pervasive and penetrating impact on life and society. With this tide, the wave of digital mental health support is emerging. Featuring three inspiring examples, Panel 2 (titled *Upstream Prevention: Digital Initiatives and Peer Support for Youth Mental Health*) explores how digital mental health support can stand as a beacon of hope for the upstream preventive and supportive services for youth mental health.

Ms. Janice Huiqin Weng and her colleagues' chapter is titled *Advancing Youth Mental Health through Digital Solutions: Insights from the Development and Implementation of youth mindline and let's talk*. This chapter pinpoints several barriers to accessing youth mental health services that have implications for the

design of digital mental health support. It proceeds to elucidate a promising digital approach to enhancing youth mental health using a comprehensive framework that led to the creation and operationalisation of two personalised digital platforms for youth mental health in Singapore: *youth mindline* and *let's talk*. Both digital platforms contain features that engage and foster trust with youths. This chapter also presents the use of artificial intelligence in the provision of digital mental health support.

Dr Geck Hong Yeo's chapter, *Implementing Digital Peer Support Training for Adolescent Mental Health*, provides a noteworthy example of digital peer support training, which was focused on the development of four digital peer support skills: mattering, selfhood, compassion, and mindfulness. This study involved 450 students from three high schools in Singapore. The study examined the effects of the training intervention using a combination of outcome measures, including the adolescents' written responses to peer disclosure cases.

In their chapter, *Digital Mental Health in Practice: What Have We Learned?*, Ms. Vanessa Koh and her colleagues present two studies to illustrate the functions of and the considerations for SHINE's youth-centred digital mental health practice, which incorporates social media and a mental health e-buddy app (i.e., Myloh). This chapter notes that Myloh served to bolster practitioners' confidence in service users' ability to self-manage their mental health. It asserts that the use of digital technology holds the promise of enhancing youth mental health services, particularly if practitioners can develop digital competence, hold a positive view of digital mental health practice, and engage in the practice carefully while staying mindful of its potential risks.

Digital mental health is gaining a momentum due to its numerous advantages such as accessibility, flexibility, anonymity, destigmatisation, resourcefulness, cost-effectiveness, and efficiency as stated in these chapters. Additionally, the advent of AI technology would herald new realms of opportunity for youth mental health. Thus, social service professionals need to explore how to better harness the power of digital technology for youth mental health. However, it is worth noting that digital mental health can be a double-edged sword. Hence, it is important to view digital mental health through a balanced lens, refraining from simply painting a rosy picture of it while losing sight of its drawbacks.

Innovative Approaches: A Wellspring of Power for Downstream Intervention

As a traditional and effective field of mental health care, downstream intervention often needs to tackle complex youth mental health conditions, which may cause youths with these conditions to flounder in the quagmire of life lingeringly. Additionally, downstream intervention needs to adapt to the rapidly and intricately evolving landscape of youth mental health. To be adaptable and sustainable, the field needs to be innovative. Embracing creative thinking, Panel 3 (titled *Downstream Intervention: Innovative Approaches in Addressing Youth Mental Health*) focuses on the innovative interventions for young individuals experiencing mental health conditions.

Entitled *Broken Crayons Still Colour: Development and Evaluation of a Psychoeducation Workshop Series*, Dr Florence Lee's chapter sheds light on co-

production, a new service model emphasising the collaboration among multiple stakeholders, including patients, in designing and delivering services. The chapter describes how *Broken Crayons Still Colour*, a co-produced psychoeducational workshop series on mental health recovery in Singapore was developed. It showcases the role of *Broken Crayons Still Colour* in creating a psychologically safe space where young patients and family members can engage in genuine conversations while on their road to recovery from psychosis. The chapter underscores the importance of co-production in developing mental health interventions that would allow recovering patients to exercise agency and amplify their voice.

In her chapter, *Expressive Arts Therapy to Support Mental Health of Children and Youth in Singapore*, Dr Daphna Arbell Kehila explores the role of art therapy in supporting child and youth mental health in Singapore based on the findings of her study. This study analysed data from 48 art therapy programmes comprising needs assessments and pre/post programme questionnaires. It also analysed six interviews with art therapists serving young clients. Her findings illustrate how art therapy can effectively support children's and youths' development and mental health, as well as empower them by offering space and freedom for their identity exploration. The study also identifies several challenges faced by art therapy programmes that warrant more attention by stakeholders in the field. Recognising the value of a holistic care ecology for child and youth mental health, the chapter recommends integrating art therapy programmes into Singapore's social, educational and health service systems.

The final chapter is entitled *Using Practice Research to Inform the Hidden Youth Intervention Programme*. This programme seeks to respond to the complex needs of hidden youths (i.e., young individuals who have isolated themselves from society for a minimum of six months, not primarily due to mental disorder) in Singapore. In this chapter, Ms. Denise Liu and her colleagues discuss the programme team's employment of practice research to shape and refine the programme. Reflecting on how effective practice research related to hidden youths can be conducted, the authors highlight the importance of synergising both researchers' "head knowledge" and practitioners' "heart knowledge" and of amplifying hidden youths' voices. They also underscore the importance of a pragmatist paradigm involving action orientation and qualitative inquiry.

These chapters epitomise how embedding youth mental health intervention in innovative approaches can be rewarding. These innovative approaches serve as a source of strength, empowering youths to navigate life challenges and uncertainties, while fostering courage, confidence, vitality, hope, and purpose in them.

Conclusion

The chapters outlined above offer readers with a plethora of multidisciplinary insights about youth mental health from a diverse range of perspectives. Spanning social work practitioners, practitioner researchers, academic researchers, and policymakers, these perspectives drew upon their respective disciplines and rich experiences in researching and working with youths. Collectively, their studies underscore the importance of adopting an ecosystem perspective when examining

youth mental health issues. This involves considering the multifaceted cognitive, psychological, social, and environmental factors that shape and influence individuals, families, and communities, while recognising their interconnectedness and interdependencies.

The innovative programmes showcased in the chapters encourage programme developers and practitioners to adopt an integrative approach to developing youth mental health-related programmes that incorporate diverse stakeholder voices and the possibility of employing multiple modalities, be it art, group work, the human touch, or digital platforms. These groundbreaking initiatives demonstrate that with a spirit of adventure, creativity, humility, and perseverance, tangible improvements can be made in supporting our youths. They serve as an inspiration and a call for action, reminding us that there is more we can and should do to champion and enhance the well-being of our young generation.

We would like to express our deep gratitude to the authors for contributing to this compilation, the moderators who facilitated the panel discussions, and our SSR colleagues who have spared no effort to organise both the conference and these proceedings.

May your reading journey be both enjoyable and rewarding.

2. Opening Remarks by SSR Director

Eddie M. W. Tong

Note: This speech is kept verbatim from the conference with minor edits.

Guest of Honour, Dr Janil Puthucheary, Senior Minister of State for Health, Emeritus Professor S. Vasoo, everyone in attendance in-person and online,

I like to welcome you to the NUS Social Service Research Centre's 2024 Conference, titled "Youth Mental Health Landscape: Upstream Prevention and Downstream Intervention."

Youth mental health has taken on particular significance recently. Multiple studies including those conducted in Singapore have highlighted growing mental health issues among youths. Citing two studies, the Ipsos World Mental Health Day 2023 Report found that one in four young adults under the age of 35 reported having considered self-harm or suicide at least once. Our Ministry of Health's National Population Health Survey 2022 found that the age group that has the highest rates of poor mental health includes adolescents and young adults.

Findings like these are of concern. First, the fact that a sizable portion of our youths are feeling depressed, anxious, stressed or pessimistic, instead of good emotional well-being, is already a worrying trend. Second, research has long found that youth is a critical developmental phase. For instance, emotional, social, family, and academic difficulties at adolescence can predict poorer emotional control, relationship difficulties, career challenges, depression, and even poorer physical health later on in adulthood.

Reflecting this concern, in a recent sitting of Parliament on 6th of February this year, youth mental health took centre stage. Deputy Prime Minister Lawrence Wong laid out several plans that clearly underscore mental health as a top national priority, including increasing the number of mental health professionals by up to 40% by 2030, introducing mental health services to all polyclinics and 900 more general practitioner clinics, boosting the number of frontline personnel and volunteers by another 28,000, and deploying more than 1,000 teacher-counsellors across schools, among others.

Even before this, the Interagency Taskforce on Mental Health and Well-being was set up to tackle mental health issues. It recently launched the National Mental Health and Well-being Strategy which has several aims, including strengthening our mental health services, supporting service providers to ensure early identification and intervention, and promoting mental health and well-being including in the workplace.

Likewise, mental health experts, as cited in several local news coverages in the past year, have noted the increase in cases of depression, stress, and suicidal thoughts among youths. They have called for early intervention, accessible and tailored care services, safe sharing spaces, support for parents, and more empathy to the concerns of the youths.

Similarly, more and more Singaporeans recognise the importance of safeguarding mental health. For instance, in the same Ipsos report, 78% of Singaporeans state that their mental health is equally important as physical health. In the MOH 2022 survey, about 56.6 per cent of Singapore residents reported that they were willing to seek help from health professionals. Hence, Singaporeans treat mental health seriously.

I believe we are in a unique juncture in our nation's history where there is broad consensus that some of our youths need help, and we need to help them.

I personally do not feel that youths are suffering mental health issues because they are so-called 'soft', lacking resilience in their character or lacking creativity and drive in problem solving. Not in my observation as an educator and researcher here in NUS where I have seen youths with vigour, drive, grit, and inventiveness. Yes, some youths need more help than others, but one also needs to understand the broader context that our youths are in, that could feed into their sense of pessimism and insecurity such as cost of living issues, academic worries, career prospect concerns, and even climate change.

The solution necessarily has to take the 'whole-of-society' approach with co-ordinated participation from various segments of society, including the community, government agencies, welfare organisations, healthcare, academia, schools and workplaces. Research should also address every level of the problem, examining every stage of the young person's developmental process and studying both person and broader factors including family, peer, community, and societal forces.

How can we help our youths? There are many ways. For instance, eradicate the stigma associated with mental health. Support family members in their efforts to help their children. Enable schools and employers to respond effectively to mental health issues among their students and young workers. Provide educational programmes on mental health in schools. Address harmful social media influences. Develop care facilities that are safe spaces for youths to confide, recover, and grow in. Increase awareness and accessibility of care resources. Create a culture that values diversity of talents and recognises different types of success. Perhaps most important of all, listen to our youths and not judge. Give them affirmation that they matter. Make them feel hope.

Therefore, having a conference on youth mental health is timely, and today, we will cover a range of key issues from risks and protective factors to prevention and intervention strategies. Of course, no single conference or research study can resolve the issue, but everyone contributes a step. We are very heartened and humbled that the responses to this year's conference have been very positive. We have more sign-ups than previous conferences. As of now, we have more than 600 sign-ups for both our in-person and online conference. The strong demand underscores how seriously youth mental health is taken. We like to apologise to online attendees who prefer to attend in person, as our seats available for registration are over-subscribed. I sincerely hope that the conference will benefit you equally online.

Before we begin the conference, I would first like to thank several people and organisations who make this conference possible. I would like to thank the Ministry of Social and Family Development and Tote Board for their support. I would like to express my deep gratitude to my colleagues at SSR for their tireless effort in organising this conference. Finally, I like to thank all speakers and moderators.

I now open the conference.

3. Guest-of-Honour's Speech

Dr Janil Puthucheary, Senior Minister of State, Ministry of Health

Note: This speech is adapted from the Ministry of Health News Highlights.

Associate Professor Eddie Tong, Director of Social Service Research Centre,

Ladies and Gentlemen,

Good morning. Thank you for inviting me to join you at the Social Service Research Centre Conference today on youth mental health.

Background of the Youth Mental Health Scene

I am very heartened to see the growing attention on the mental health of our young people in Singapore. It underscores the importance of prioritising their mental well-being but it also underlines the fact that we can do something about this. If you can help young people develop the life skills and resilience and get through the trials and tribulations of the first two or three decades of life, they will probably be okay. We cannot solve and prevent every problem, but teenagehood and young adulthood is a period of turbulence and change and having the right strategies for that difficult time is important, especially for those who are at risk of mental health and well-being issues.

When we look at the research on the mental health of young people, including some here in Singapore, you can find numbers that are quite stark and concerning. In Associate Professor Eddie Tong's speech, he cited the Ipsos World Mental Health Day 2023 Report which found that one in four young adults under the age of 35 reported having considered self-harm or suicide at least once. There was another recent nationwide study on adolescents' mental health and resilience conducted by the National University of Singapore and the Ministry of Education which found that about 12% of Singaporean adolescents met the clinical criteria for a mental disorder.

If you look closely at the data in the recent NUS-MOE study, you will see that over time, a significant number of adolescents who first demonstrated symptoms and concerns that could potentially meet the criteria for mental disorder - self resolved.

If you look at various other studies, self-reported surveys, screening and triage, the numbers are very high. As those patients and clients are followed through, only a small proportion turn out to have a clinically diagnosed mental health condition. That delta is very important. We have to take seriously why there are these concerns at the point of presentation. Why is it that mental health symptoms and concerns about mental well-being self resolve? How can we help these clients, patients or individuals resolve these problems faster and better? How can we correctly identify the small number who turn out to have a clinical condition earlier and intervene faster? I explained this delta not to reduce the concern that we should have, but to encourage a deeper understanding of the issues, so that we can apply our strategies correctly.

We can help people get through stressors, whether they are facing the normal stressors of life, or if they are having an abnormal reaction to the stressors of life. For cases where there is truly something wrong and where intervention by a multi-disciplinary team of professionals is needed, we must intervene earlier and identify those who have a clinical disorder. All of this does not remove the issue that mental health remains an increasing area of concern for our youth today. It is therefore important for us, as a society, to address these issues holistically.

Unique Mental Health Challenges Faced by Youths

Youths face immense challenges in their developmental journey. As they navigate the transition from adolescence to adulthood, they have to grapple with many expectations and stressors tied to the pursuit of self-identity, as well as academic and personal goals. It takes time to establish who you are, that pursuit of self-identity. Amidst all these, young people in the first three decades of life have to deal with the uncertainly and insecurity of the future such as their academic and professional goals or starting a family. But actually, that has been so for thousands of years and for many civilisations and societies around the world. Not all of which perhaps are dealing with mental health issues in the same way that we and many other developed societies are.

My sense is that, there are two major factors in our society and in similar societies that are different and driving these concerns. These are issues to do with identity, survival, economic insecurity and potentially climate change. These large forces affect all of us around the world and many of these forces have been with us for some time. What is different now? I think there are two major issues. For one, I think our society is a little bit more, from an individual's perspective, fragmented. Our social networks are a little bit smaller even though we have much larger online connections. We have WhatsApp contact lists that run into the hundreds, if not thousands and we have Facebook friends that run into the tens of thousands. We need to have some physical connection which allows us to offload and share with others and have a shoulder to cry on. We have fewer people like that in our lives. We have to make an effort to find such connections – human, personal and real-world connections.

At the same time, we are faced with an order of magnitude increase in the amount of information about everybody else's socialisation. This includes the Instagram effect, where you look online and see the lives of everybody which may or may not be correctly represented. This balance of contracting physical and social circles and an increasing exposure to inordinate amounts of inappropriate information is perhaps one of those major driving factors. I think this is one of those things that we do need to pay attention to.

The problem is that paying attention to these issues is not going to be about removing social media or removing access to technology, because the genie is out of that bottle and it is very much part of our lives. There are also a lot of good things that technology and social media can deliver for us. The question is how do we deal with these issues? How do we mitigate or push against the tide. Hence, the upstream and downstream interventions of your conference are very apt.

Based on the National Youth Council's survey in 2021, youths were concerned about online harms, unregulated use of technology and social media, which might have distorted their perception of reality, created unrealistic expectations and social comparisons, and strained their relationships with people. One of my takeaways is, young people get it. When we talk about these issues and what may be driving some of the pressures that they may have, they do not pretend that it is not so. They do get it and understand these concerns. This means that if we are able to come up with good strategies for mitigation and intervention, it would find fertile ground in the young people of today and it can make a real difference. We have a receptive audience who wants to do something for themselves and for their peers.

The National Mental Health and Well-being Strategy

The complexities of youth mental health issues require a holistic and collective approach to address the underlying social and health-related factors. To better promote social-health integration for mental health, we set up the Interagency Taskforce on Mental Health and Well-being in July 2021 to oversee and coordinate national mental health efforts, focusing on cross-cutting issues that require interagency collaborations. The Taskforce launched the National Mental Health and Well-Being Strategy in October last year. We are setting out our approach on how we are going to deal with the problems that we have today and how we are going to organise ourselves going forward.

Earlier last month, several Members of Parliament put forth a motion on advancing the mental health of the nation, and ultimately all of Parliament endorsed the whole-of-Singapore effort to implement the national strategy. The key issue we are struggling with is how are we actually going to get things done. These were the issues that were highlighted in the Parliamentary Debate including school-based and community-based efforts for supporting youth, youth-at-risk and the general population. There are continuing efforts and new initiatives being developed to address these issues.

Upstream Efforts to Develop Resilience from a Young Age

One upstream effort to mitigate the risk of mental health issues among youths is to build resilience at a young age. Resilience is paramount in helping our youths navigate transitions and dealing with setbacks in life. We want them to be able to develop the capacity to bounce back from adversity and be able to effectively manage stress and the uncertainties that accompany many life transitions and milestones.

At the national level, upstream public education campaigns such as the Health Promotion Board's (HPB) "It's OKAY to Reach Out", and the National Council of Social Service's "Beyond the Label" campaigns help to normalise conversations around mental health and encourage early help-seeking.

We also need to provide targeted support, especially to our youths in our schools. One of our upstream mental health initiatives is the promotion of Mental Health Education in the Character and Citizenship Education curriculum in schools, and

mental resilience and well-being programmes in Institutes of Higher Learning (IHLs). We want students to take it a step further by having the knowledge and skills to deal with emotional regulation, differentiating normal stress from distress or mental illness, and playing a role for each other. It is not just about self-control and self-learning. But how can we help people around us by providing peer support and building the appropriate networks so that we generate a social resilience and not just a personal resilience.

There is also an ecosystem of support to identify early students with mental health challenges in schools and IHLs. Peer support structures have been established in schools and IHLs where students look out for one another and encourage a peer in distress to seek appropriate help from trusted adults, parents, educators or counsellors. All schools, polytechnics and the Institute of Technical Education (ITE) have dedicated time and space for educators to check-in and monitor students' well-being to understand that these ideas of assessing the resilience of students and their abilities to cope with the stressors of life in the education system are built into the process. It was something that was done informally when I was educated, and a bit more understanding when I was an educator. Now it has come to the fore and it is very much part of the structured approach that educators have to put into practice by asking themselves if their students are coping well with what they are going through and providing support for their students.

Turning now to the issue of technology and social media. One of the strategies that we talked about in the Taskforce and put out in our report is how to deal with this in a way that is appropriate. What we do not want to do is lay the blame on social media and technology and suggest that going screen-free is going to fix the issue. The reality is that technology can play a powerful, positive and useful role in our life and helps us to connect with people. I have aged parents. If it were not for social media and instant messaging, I would not be in such close touch with them and they would not have the ability to reach out to me in quite the same way.

So there are positive uses. The Taskforce decided that we should focus on the positive uses of social media and messaging technology so we are developing a Positive Use Guide. We want to be able to establish what is a sense of good social behaviour and what are ways in which parents can role model good use of technology to their children so that they can grow up with these ideas from the best role models - their parents. The Positive Use Guide will guide the healthy and positive use of technology, and provide recommendations on how to mitigate its negative impact.

Downstream Efforts to Support Youths with Mental Health and Well-being Needs

What about the downstream intervention? In schools, students, educators, counsellors, professionals have been trained to de-escalate strong emotions, facilitate classroom conversations on mental health and sensitivity, provide additional support by a referral to a trained counsellor or mental health professional. So we have teams like the Response, Early intervention and Assessment in Community mental Health (REACH) teams that do this.

In the community, social service agencies play an important role to support youths with mental health issues. Youth Community Outreach Teams (CREST-Youth) conduct mental health screening, provide basic counselling services and refer clients with greater needs to higher tier services such as Youth Integrated Teams (YITs) which provide more detailed mental health assessment and psychosocial interventions. These teams will be expanded incrementally by 2030, as announced during the recent mental health Parliamentary Debate.

We will continue to improve and increase psychiatric services that are available at the National University Hospital, KK Women's and Children's Hospital, and the Institute of Mental Health, focusing specifically on the mental health of young people.

Social Service Research to Improve Youth Mental Well-Being

We need upstream and downstream interventions. In the balance of my speech, I spent much more time talking about the upstream interventions and I think that is what we should be doing. How can we make sure that we prevent these issues if possible? But also give the greatest number of us the ability to deal with these issues, whether they are for ourselves or the people around them. If we can do that well, then the effectiveness of our downstream interventions will be improved, but also hopefully, we need less downstream interventions. But we should continue to make sure that we provide those interventions and make sure that they are increasingly available and increasing the capacity.

Mental health is a multi-faceted issue influenced by a complex interplay of individual, biological and social factors. Your research is a vital part of how we are going to address these issues. The research helps us to deepen our knowledge and understanding of the issue, which then serves to inform appropriate policy decisions and strategies to tackle the issue. In our work at the Taskforce, a lot of our time was indeed spent trying to establish what were the research publications and research databases that were useful to our policy considerations, and, of course, coming to some conclusions about where we might need to do future research.

The Social Service Research Centre (SSR) spearheads much important research. For example, there is an ongoing study of digital peer support intervention training in local secondary schools, with an aim to enhance mental health support for our adolescents.

Another research touches on in-work poverty and how employment conditions and experiences affect young workers' mental health. Findings showed that lower-wage young workers were more likely to experience anxiety, while youths with adverse childhood experiences were more likely to show symptoms of depression. These are important pieces of work and I would encourage all of us to support the important work that you do at SSR. The SSR is continuing to explore ways to work with employers to bolster the mental well-being of employees.

Closing

In keeping with the conference's theme "Youth Mental Health Landscape: Upstream Prevention and Downstream Intervention", both upstream prevention and downstream interventions are equally critical in cultivating mental wellness in our society. By actively engaging in upstream prevention, we can create a conducive environment that build youth mental resilience, promote their mental well-being and hopefully keep mental illnesses at bay. At the same time, we have to continue to make sure that our downstream interventions are accessible, good quality, effective and are applied to those who need the necessary support and care.

This conference serves as a significant platform for the exchange of knowledge and ideas across the various roles we have in our mental health ecosystem for the many different types of professionals that bring to bear their multi-disciplinary skills. Together, we can better understand the issues and develop better solutions will make a significant impact on our youths.

I wish all of you a fruitful conference and thank you for inviting me to join you here today.

4. Introductory Speech on Mental Health Issues Facing Youths in Singapore

S Vasoo

Note: This speech is modified with the addition of references.

Dr Janil Puthucheary, A/Prof Eddie Tong, former director A/Prof Irene Ng, A/Prof Noor Aisha, who was a supporting director earlier on, and the panellists who are here today, together with the various paper presenters and your participants; I hope you are not mentally stressed having to attend this conference. Hopefully the organisers don't stretch you, but you must be resilient enough to manage things through.

In his speech, Dr Janil presented some very challenging and interesting ideas, opinions, and comments of the mental health issues facing young people. Things do change. We know that today, everybody talks about climate and environmental change. Both have some impacts on people. With the heat and the temperature going up, the mental temperature also goes up, which is facing all of us. So, we need to manage that as well. It is not an easy thing. However, life is a challenge, and what is important in life is to be able to face it, and for us to think that tomorrow, we will be there to face it. If we can do that, I think we should be able to mount and deal with the mental health challenges ahead.

I have been involved in working on mental health issues for a long time. When I was a young person in the early 1960s, I worked in a psychiatric institution known as Woodbridge Hospital. I was in the nursing field, helping to manage patients who were facing serious mental health problems. It was not easy to do that those days. When someone mentions Woodbridge Hospital, everyone would step back and keep away from me. This is the problem of stigma. Today, mental health issues are still stigmatised, but the situation is improving. People are becoming more aware and are more able to grapple with these issues. This is important, because by eroding the stigma, people will be more proactive. They will be able to handle the challenges faced by those who are mentally affected.

As you know, mental health issues are an age-old problem. It has existed since humankind survived. The concerns have not changed in the aspect of dealing with more complex problems, which include mood and behavioural disorders. These are all the concerns pertaining to mental health, and various approaches have been developed to offer better diagnoses and support. There is a range of conditions pertaining to depression such as endogenous depression, reactive depression, behavioural disorders, reactive violence and those pertaining to schizophrenia such as paranoid schizophrenia and catatonic schizophrenia. These are diagnoses and approaches that have been identified and built over time. I would say that the challenge for us is to be able to look at what can be done to identify people who are vulnerable.

Mental Health Service Delivery

In my opinion, most of the time we deal with issues that are remedial in focus. This refers to the tertiary stage of the problem when the individual becomes seriously disturbed. They are struggling to function, and the family is not able to help them. They appear in the households and in the community, and then they are referred to the hospitals and the psychiatric institutions. However, I think we mostly spend on the tertiary aspects of intervention and the remedial aspects which are necessary, but that is only at the end stage.

What we also need to do, is to look at more resources to be deployed in the stages of early intervention. This is the primary stage of the issues. What we need to do is to be able to develop a system where we can identify who these vulnerable people are, particularly the young people. Who are they, where can they be found, how can we go about identifying them and how they could be helped earlier? If we can do that, we are then able to target the vulnerable groups earlier on. This is so that we can develop very good strategies for early intervention. The earlier we intervene, the better prospects will be for them to become more resilient in dealing with their problems. Most agencies and organisations tend to deal with the tertiary end of the problems, which causes the issues to become more complicated and challenging to manage. It takes time to unravel and deal with these mental health issues.

Growing Awareness of Mental Health

We need to, therefore, first look at the level of awareness of mental health in the community. Are people really aware about these issues? I think in the last 10 years, our society has become more aware of mental illness. In the last 10 years, there is also a growing body of research that has been undertaken. The most classic one, if you read, is the research done in 2010 on mental health issues in Singapore (see Subramaniam et al., 2012). Following that, you have the 2016 more advanced study by the Institute of Mental Health (IMH) and the Ministry of Health (MOH) (see Subramaniam et al., 2019). They all deal with the epidemiological issues related to mental health in the context of Singapore. I see they have come up with a report in year 2020, on some of the epidemiological issues related to mental health.

All these literatures are available there, but they are all very recent literatures over the last decade (see SG Mental Health Matters for a collection of articles on mental health in Singapore). I see more can be done, especially in identifying the vulnerable groups. We must not forget that not only young people are vulnerable. We have also a growing population of the elderly, and there are many lonely elderly folks here. What are the mental health issues of these people? We should not forget about that, because everyone will grow old too. This is an issue facing the community now.

Mental Health Landscape

The other issue that we need to look at is the prevalence of mental health issues amongst young people. As you can see, the prevalence has gone up from 13.4% in 2020. Now the prevalence has gone up to 17% in 2022 (Ganesan, 2023). This shows that the mental health issues related to young people and the community has increased. And this, I think, is an indication that the problems have grown, not

because the problems have become serious, but because of the large number of people who are becoming young adults. About 40% of our population are young people, and many of them, at this stage of the mental health development, are forming families, working, going to tertiary institutions, and so they are faced with all these challenges in life. Understandably, the problems are likely to surface. More of these problems do arise when they end up in the workplace. They also end up in the community and in schools. What is important, I think, is to be able to look at how one could reach out to these people in a way that is essential, that they can be helped and counselled earlier. The earlier that we go in to help them, the better. Resources could be deployed.

Now, the question about the numbers of young people who are affected with mental illness or mental issues from the studies done. 1 in 3 young persons have mental health symptoms, such as problems of anxiety and depression (see Ang, 2022; NUS Youth Epidemiology and Resilience Study, 2023). Other problems include conflicts in relationships and problems arising from failure. I think these are quite common growth and developmental problems. Nevertheless, if unattended, they become worse. One needs to be able to look at what and where the symptoms are, as well as what are the institutions and organisations that will be able to locate them and identify them early, and then to extend help to be given the number of people with actual mental disorders. Presently, the community is affected with more serious mental health problems and the number of young people who are affected is increasing. There is nothing to be alarmed about this issue, which is facing all of us. The agencies have to be able to identify what the landscape is like amongst young people, and what are the challenges that these young people are facing at the workplace, in school, in the community, in their families and with their peers. If we can mobilise institutions that are working with them and can relate to them, we should be able to look at how they could be helped.

Mental Health Intervention Strategies and Policy Enhancements

The question that we all need to ask ourselves is, what type of strategies can be developed to help those who face mental health issues? This is a question that Dr Janil has addressed, and he has talked about the upstream kind of issues such as digitalisation, technical development and social media which have positive impacts on people’s lives. However, at the same time, there are side issues that one has to be aware of. I note technical development is important. Social media digitalisation is important, but it can be dehumanising in the sense. What is really crucial is a human touch. I think that is needed in dealing with all these technical issues because they lack the human component and interaction. Technology is one thing, but things like having a human touch, understanding, interacting and being able to appreciate relationships and networks are very critical in life.

A lot of young people, because they are tied up in their own worlds, with different challenges and their networks may be with their peers, when they go out to work the number of people they have is limited. It is important to ensure that there is a good network of people that we can link young people to. This includes young adults, as well as families and friends that they can be linked to. There is a lack of networks that are available to individuals, and they also tend to lose their networks. As we go along, we become a bit more isolated. At this stage of my life, I begin to think about

what is going to happen to me. What are the challenges? What is death, and the issues of life and death that I am going to face? Who would be there to take care of me if I become disabled? Where are my friends? Each time I open the obituary page, I see them going, and I have fewer friends left in life.

We will go through these milestones in life. These are milestone developments, and we have to face them, whether we like it or not. We have to travel to this route, and what is important is to be able to manage them. This means we must have resilience and to never give up. I think that is very important. Once we give in, everything caves in and collapses. It is important to build in young people the capacity to come back into the scene and not to just curl up. It is important to be prepared to deal with the issues and the challenges. If you can prepare them to do so, to what I call a "comeback kid", then they will be able to have the fire in their bellies to deal with issues. This is where we need to fire up young individuals to meet the challenges of life.

Now, there are different strategies that have been developed for dealing with mental health issues. There's a task force, which Dr Janil has identified (see Teo, 2023). I see it is important to have a task force. What is more important is for this task force to cut across all the different agencies, including education, healthcare, NGOs, non-profit organisations, individuals and community groups. If they can be mobilised to identify the critical issues that the different social groups are facing, they can then look into these issues and come up with workable solutions. What is important, is that there is a lack of collaboration. Every agency or organisation, whether it is the Ministry of Health or Education, are each managing their own services. There is nothing wrong with that, because organisations are supposed to achieve their missions. However, what is important is for them to share their data. It is sad that we always hide behind data protection. We know it is an issue that we cannot discuss this openly and share the data openly. However, I feel that in the interest of the community, we should ask if this is for the betterment of the community. There is nothing wrong for us to share this data and be well-informed. Organisations and individuals can develop better strategies in dealing with it.

There are a few areas which we should concentrate on, and I would like to identify a few. We need to look at identifying the vulnerable groups in the community. We have to look at strengthening our early intervention programs, particularly starting with very young children. We have a lot of institutions which are working with young children. Can these institutions be sensitised to identify the children who have difficulties early? Can the data be captured? Can they then be referred for early help? I doubt very much. Many of these institutions are doing it when the children get into trouble or become too difficult to be managed. It is only then that they are referred. I think what is important is to look at how they are managing and the kinds of early problems they face and to be able to refer them earlier.

As for the youth, there are many youth organisations around. Can they be sensitised to identify youth with difficulties or are vulnerable in schools, communities, organisations or the workplace? If this can be done, we can explore how to enhance the skills and the capacities of the people who are delivering services to young people so that they can identify them early. They can also set up support groups. To assist young people early would be one area that can be done.

The other strategy is to look at issues of digital abuse. With digitalisation and social media, young people are likely to experience various forms of abuse, and these are likely to increase. Therefore, there is a need to help young people to become more vigilant and be able to deal with digital abuse, and to help them to manage this as early as possible.

I also have been looking at the need for work among young people. There are likely to be more retrenchments of young people from the workplaces because of the volatile settings that they are in. Many of these settings change very quickly. The technology changes, be it in fintech or software. All these are changing so fast, and there is a likelihood that many young people will be affected by retention issues. There is a need for us to strengthen our counselling follow-up services for young people who are affected from being displaced from their work. The counselling is to get them to see how they can fit in, how they can relearn and reskill themselves. I think that is going to be the biggest challenge. I think the work settings, unions, as well as community youth groups can rethink the kind of models to help young people who may face retrenchment.

Another emerging area is that we have a lot of migrant workers, and I don't think we are doing enough to help them. We are doing things like setting up work centres, migrant centres and all that. However, they do have a lot of work-related and adjustment issues, on top of personal and relationship difficulties. We cannot ignore this sector of people who require a follow-up. We need more organisations, more migrant workers' associations and for NGOs and social organisations to be able to penetrate and work with NTUC. For migrant workers' centres which deliver services for them, we need to see how we can strengthen and reach out to migrant workers who are potentially facing setbacks. They are often faced with issues such as loss, loneliness, neglect and depression. We need to look at how the services in these areas can be increased.

Lastly, we need to examine the area of working with the elderly, who are going to be increasing in number. They are going to be lonely, and they are going to be difficult. We are going to have a lot of the elderly who may be suffering from depression and loneliness. The question is how to reach out to them. This will be a very great challenge to Singaporean society, because we will be facing an increasing number of old persons who will be less able, less mobile, and are living in high rise. Imagine that you are 70 or 80 years old and living in a higher level flat. Your mobility is going to be challenged. If you have less friends or networks around, and you are closed up within your flat, people may not know whether you exist or not. This is a serious problem and with the ageing population, we should look at what needs to be done. We can mobilise young people in the community to give them a space to be able to relate, help, and enable these older persons in the community.

If we can do all these, to strengthen and more importantly, to look at early intervention, to have more resources and for organisations to take an upfront approach in dealing with it, we will be able to strengthen our community network and enhance our capacity to be more resilient. It is easy to talk about problems, but the question is, what is the real solution? What can we do about it? How do we go about to mobilise community groups and others to support and innovate programmes and

to experiment with things that nobody would want to take a risk to do? Life is a risk, and one needs to take risks from time to time. If we don't, we will become isolated. I hope that you would venture, look at your backyard, look at what can be done, and how you can strengthen the services that you are working on. On that note, I would like to thank you all very much.

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PANEL 1

Risk and Protective Factors of Youth Mental Health Outcomes

5. Remarks by Panel 1 Moderator

Rayner Kay Jin Tan

I would like to thank the NUS Social Service Research Centre (SSR) for the opportunity to provide opening remarks for this first section that focuses on risk and protective factors of youth mental health outcomes.

The 'Sociological Imagination' refers to the ability to connect lived experiences with larger social structures, so that we may better appreciate the link between 'personal troubles' and 'public issues' (see Mills, 1959). We often focus on the latter at research conferences, but I am grateful to be reminded that every data point tells a story has led all of us on this journey and endeavour to improve the well-being of our youth.

This topic resonates deeply with me, given my own struggles growing up. I experienced a period of suicidal ideation as a result of bullying and self-esteem issues while I was in secondary school. Without intervention, things escalated later on, leading me to drop out of university as I struggled with my own mental health, and thereafter I was eventually admitted to inpatient drug rehabilitation for almost two months when I was 24 years old.

As I write this, I am reminded that most of us, if not all of us, have all fallen, picked ourselves up, and survived our own 'personal troubles' in unique ways. What then, do these stories tell us about the broader, systemic issues at play?

The following section therefore plays an important role in setting the stage for the scale of the issue at hand, and provides answers to fundamental questions that shape how we approach the issue of youth mental health: How do youth conceptualise mental health and well-being? How has COVID-19 impacted mental health and well-being among our youth? How do formative experiences of trauma and adversity shape mental health outcomes for youth? What are factors that promote long-term mental health recovery for youth with past experiences of offending?

Associate Professor Mythily Subramaniam first provides important framing of the topic, by providing an epidemiological overview of the youth mental health landscape in Singapore. Drawing from evidence from Singapore and beyond, we are given a broad summary of the risks and protective factors impacting mental health among our youth. Next, Associate Professor Jungup Lee dives a little deeper into the role of adverse childhood experiences, and shares insight on the prevalence of childhood traumatic experiences and bullying experienced by Singaporean university students. Finally, Mr Dennis Teo highlights important findings from a National Council of Social Service study among youth with past experiences of offending, and illustrates how aspects of social support, including parental attachment and school-based assets, can potentially serve as longer term protective buffers for poor mental health.

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6. What Ails Our Youth: A Psychosocial Perspective of Youth Mental Health

Mythily Subramaniam

Abstract

While most youths are mentally and physically healthy, about one in five youth in the general population met the criteria for a lifetime mental disorder in Singapore. The Singapore Mental Health Study 2013 found that approximately 9% of young people (18 to 34 years) had experienced major depressive disorder in their lifetime, while 6.7% met the criteria for obsessive-compulsive disorder. Mental disorders at any age can impair the quality of life and the ability to function. However, for young people, these disorders can also negatively affect their academic outcomes, ability to get a job, and form close relationships. While early diagnosis and treatment are crucial to early recovery, the identification of risk factors can mitigate the risk of developing mental disorders. This chapter examines the various protective and risk factors that contribute to youth mental health with a focus on data from Singapore and highlights efforts that can be taken at the individual and community levels to promote positive mental health.

Introduction

Youth is defined as “a period of transition from the dependence of childhood to adulthood independence” (UNDESA, 2013, p. 1). The physical age of youth is usually categorised to be between 15 and 35 years; however, for statistical purposes, the United Nations defines “youth” as persons aged between 15 and 24 years, who account for 1.2 billion (15.5%) of the global population (United Nations, 2019). Youth is a period of immense biological, physical, cognitive, social, and emotional changes.

The World Health Organisation (WHO, 2001, p. 1) defines mental health as “a sense of well-being where you can use your skills and abilities, cope with the normal stresses of life, learn or work productively and are able to make a contribution to your community.” A recent systematic review of literature that aimed to understand youth mental health examined 105 articles from 26 countries that met review criteria (Vaingankar et al., 2022). The qualitative analysis identified 22 broad conceptual themes. Interpersonal relationship domains (e.g., positive relationships, school connectedness); experiencing positive emotions/affect (e.g., feeling pleasant

emotions); self-efficacy/competence (e.g., strengths, human agency); life satisfaction (in the context of friendship or school); and goal attainment/personal growth (life aspirations) were the most commonly recurring themes. Five concepts that had not previously been identified and incorporated in positive mental health frameworks—"faith", "mindfulness", "positivity", "self-love", and "vitality"—were identified.

On the other hand, youths face several challenges as they transition from childhood to adulthood and any of the concepts that youths identify as important to their well-being may be affected. Most youths cope well with these challenges and are able to maintain their mental health and well-being. However, if the challenges are overwhelming or their resilience and support systems are overwhelmed, youths may develop psychological distress and mental disorders. The onset of mental ill-health peaks during adolescence and early adulthood (Merikangas et al., 2009). It is well known that approximately 75% of mental disorders begin before the age of 25 years (Uhlhaas et al., 2023). The second Singapore Mental Health Study (SMHS), conducted in 2016, showed a significant association between younger age and the prevalence of mental disorders (Subramaniam et al., 2019). In particular, young adults aged 18 to 34 had the highest lifetime and 12-month prevalence for any of the studied mental disorders. Thus, mental disorders are often referred to as chronic diseases of the young (Insel & Fenton, 2005).

The COVID-19 pandemic has had a profound impact on the mental health of young people worldwide. Studies from various regions, including both Western and Asian countries, have highlighted a concerning increase in mental health issues among youths during this period (Bell et al., 2023; Fukase et al., 2021; Hu & Qian, 2021; US Census Bureau, 2021). Notably, the prevalence of symptoms related to anxiety and depression has surged, reaching levels more than twice as high as those observed before the pandemic (US Census Bureau, 2021). What is even more worrying is that these mental health challenges have disproportionately affected young people compared to the general population during the COVID-19 crisis (Subramaniam et al., 2023).

It has therefore become imperative for countries to understand the extent of mental health problems in youths, as well as the risk and protective factors for youth mental health, in order to develop targeted interventions and support systems to address the mental health needs of youths.

Methodology

A literature search was conducted to identify the prevalence of mental health conditions in youths, with a focus on Singapore. The search was extended to identify factors associated with mental health conditions. Well established factors as well as emerging evidence that has not been considered in research on youths was explored.

Findings

The Prevalence of Mental Health Conditions among Youths

Studies have found a high prevalence rate of youth mental disorders during or after the COVID-19 pandemic. For example, a survey of university students in Hong Kong in 2021 established a prevalence of 17.2%, 27.8% and 11.1% respectively for severe to extremely severe levels of depression, anxiety, and stress symptoms (Shek et al., 2022). Similarly, a study conducted in 2020 in Bangladesh reported high estimates for the three conditions (Islam et al., 2020). The authors found prevalence estimates of 35.2%, 40.3%, and 37.7% for at least severe symptoms and 19.7%, 27.5% and 16.5% for at least very severe symptoms of depression, anxiety, and stress.

In Singapore, data from the Singapore Mental Health Study conducted from 2016 to 2018 found that the prevalence rates of lifetime major depressive disorder (MDD), generalised anxiety disorder (GAD) and obsessive-compulsive disorder (OCD) were 9.2%, 2.2% and 6.7%, respectively among those aged 18 to 34 years (Subramaniam et al., 2019). However, the Youth Epidemiology and Resilience Study (YEAR), conducted from 2019 to 2022 by the Mind Science Centre, National University of Singapore, reported lower levels of MDD and GAD. Additionally, the National Population Health Study conducted from 2021 to 2022 (MOH, 2022) reported that 25.3% of those aged 18 to 29 years had poor mental health, and that the prevalence was highest among all age groups. Please see Table 1.

Table 1

State of Youth Mental Health in Singapore

	SMHS 2016 (2016-2018)	**YEAR Study (2019-22)**	**National Population Health Study (2021-22)**
	Aged 18-34 years	Aged 10-18 years	Aged 18-29 years
Major depressive disorder	9.2%	2.37%	
Bipolar disorder	2.8%		
Generalised anxiety disorder	2.2%	2.75%	25.3% had poor mental health
Obsessive-compulsive disorder	6.7%		

Note. SMHS refers to the Singapore Mental Health Study, while YEAR refers to the Youth Epidemiology and Resilience Study.

Factors Associated with Youth Mental Health

Several factors associated with youth mental health have been identified across studies. These include but are not limited to:

Social media. Social media has become a dominant part of young people's lives. Up to 95% of youths aged 13 to 17 report using a social media platform, with more than a third using social media "almost constantly" (Vogels et al., 2022). Frequent use of social media has been linked to notable changes in the developing brain, particularly in amygdala, which plays a crucial role in emotional learning and behaviour, and the prefrontal cortex, which is responsible for impulse control, emotional regulation, and

social behaviour moderation (Crone & Konijn, 2018; Maza et al., 2023). This heightened use of social media could potentially increase sensitivity to social rewards and punishments. Consequently, adolescents might experience increased emotional sensitivity to the interactive and communicative aspects of social media platforms.

Studies suggest that adolescent social media usage can predict a subsequent decrease in life satisfaction, especially during specific developmental stages. Higher estimated social media use predicted a decrease in life satisfaction ratings one year later, while lower estimated social media use predicted an increase in life satisfaction ratings. Girls aged 11 to 13 and boys aged 14 to 15 appeared particularly vulnerable to this trend (Orben et al., 2022). Excessive social media use has led to comparisons with peers, being cyberbullied, reduced social support, and lowered self-esteem in youths, all of which can challenge their mental health (Office of the Surgeon General, 2023).

Substance use. Risky or hazardous patterns of drinking behaviours are associated with negative outcomes among adolescents and young adults, including lower life satisfaction and more mental health complaints (Sæther et al., 2019; Wartberg et al., 2019). Smoking initiation occurs predominantly among young people (Freedman et al., 2012; Marcon et al., 2018). Globally, it was estimated that 155 million youths aged 15 to 24 years were tobacco users in 2019, with a much higher prevalence among males (20.1%) compared to females (4.9%) (Wang et al., 2022).

Aside from the known harms of smoking on health, exposure to nicotine (i.e., the addictive substance found in cigarettes) at a young age has lasting implications for brain development (Goriounova & Mansvelder, 2012). Furthermore, an increasing number of youths using e-cigarettes is a worrying trend worldwide (Becker et al., 2021), particularly in Singapore, where e-cigarettes are banned (Yusof, 2023).

Adverse childhood events. Adverse childhood experiences (ACEs) refer to stressful or traumatic childhood events that occur to an individual from birth till age 18. These events include growing up in a household with recurrent physical, emotional, or sexual abuse; physical or emotional neglect; parental separation or divorce; living with household members who abuse substances, have mental illness, or are suicidal; being bullied; and witnessing community or collective violence (Petruccelli et al., 2019). Research has consistently shown that ACEs have long term negative consequences including poorer physical and psychological health outcomes (Hughes et al., 2017; Kalmakis & Chandler, 2015).

Macro stressors. Youths care about the world and access to information makes them more acutely aware of global concerns. Information overload about wars, natural disasters, strife, and protests can induce stress among the youth, leading to anxiety, depression, and hopelessness (Price et al., 2022).

Normalisation of mental health. Mental health is becoming more normalised, and youths are willing to talk about their feelings and emotions more openly.

Additionally, there are some emerging factors to be kept in mind. These include:

Eveningness. Eveningness is described as a delay in going to bed and getting up, as well as in the preference for activities in the afternoon-evening. The reasons for this may be (i) biological (i.e., hormonal changes that occur around the onset of puberty) and (ii) social (e.g., search for autonomy and refusal to follow social and family norms, peers influence, or mobile use at night). A shift to eveningness in girls is also driven by an advance in pubertal development and increasing family conflict (Díaz Morales et al., 2023). Epidemiological data show that eveningness is associated with poor mental health in young people (Merikanto & Partonen, 2021).

Body temperature. An increasing number of studies indicate that higher self-reported and wearable sensor-assessed body temperatures when awake are associated with greater depression symptom severity. These findings point to body temperature alterations as a potentially relevant factor in depression etiology (Mason et al., 2024).

Green spaces. There is growing evidence to suggest that green spaces have a positive effect on people's mental health. Green spaces can lower levels of stress (Wells & Evans, 2003) and rates of depression and anxiety (Park et al., 2010). Furthermore, van den Berg et al.'s (2010) study found that respondents with a high amount of green space in a 3-km radius were less affected by a stressful life event than respondents with a low amount of green space in this radius. However, with increasing urbanicity and culling of trees, these protective effects on mental well-being could be progressively lost (Zhang et al., 2024).

Conclusion

While studies on youth mental health in Singapore, such as the YEAR study and the National Youth Mental Health Study (NYMHS), have found associations of youth mental health with resilience, body image, social media use, and self-esteem, the data have not yet been published (data from the YEAR and NYMHS were presented at local conferences including the Singapore Mental Health Conference 2023). While both NYMHS and YEAR have examined the well-known constructs that influence youth mental health, they have not explored emergent factors, which leads to an evidence gap locally.

To conclude, youth mental health is complex, influenced by various individual, societal, and global factors. While it is easy to lay the responsibility on youths, parents, or schools, a single factor is rarely responsible for a mental disorder. Multifaceted interventions that involve not just the young people, but also their parents, schools, and communities are needed.

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7. Exploring the Intersections of Trauma, Adversity, and Youth Mental Health and Promising Protective Buffers

Jungup Lee

Abstract

Youth mental health is a growing social issue that may lead to long-lasting outcomes across the lifespan. Trauma and adversity have been linked to various mental health issues. Positive factors, such as support from parents and peers, might be essential in mitigating the impact of trauma and adversity on the mental health of young individuals. This chapter uncovers the prevalence of traumatic and adverse experiences and illuminates the intersections of trauma, adversity, and youth mental health in Singapore. In addition, the chapter discusses the promising protective factors that buffer against the magnitude of the positive association between childhood traumatic and adverse experiences and mental health problems and promote youth mental health and well-being, based on the main findings of two studies.

Introduction

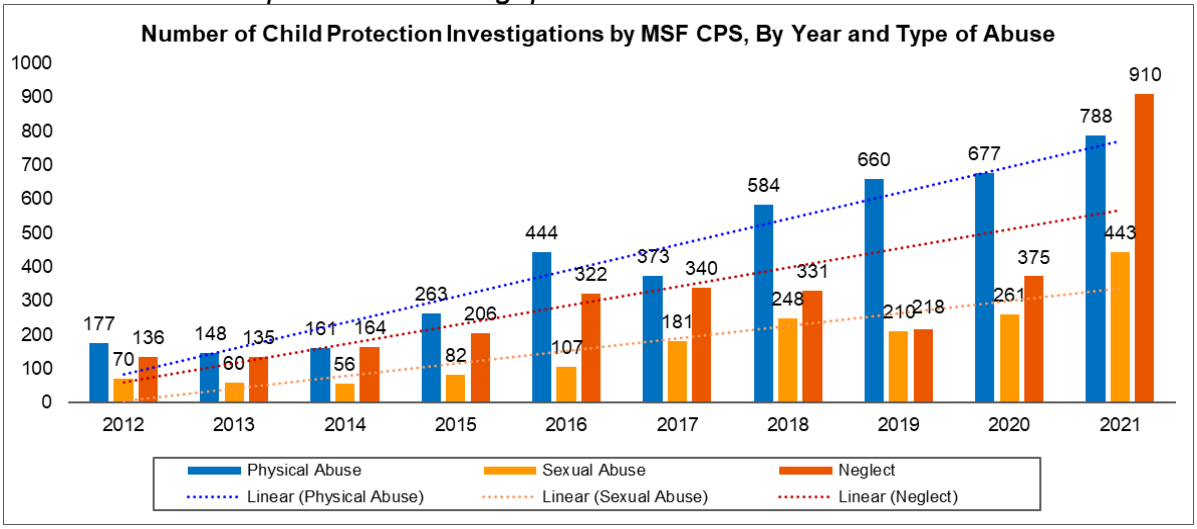
Youth mental health represents an emerging concern in contemporary society, affecting young individuals today. Particularly, traumatic and adverse experiences have been found to be associated with multiple mental health problems, including anxiety, depression, post-traumatic stress disorder (PTSD), and suicidality (Brockie et al., 2015; Reiser et al., 2014). Empirical evidence highlights that youths who have been bullied in any forms of school bullying and cyberbullying are more likely to report a higher level of internalising symptoms, such as depression, anxiety, and suicidal ideation (Lee et al., 2021b; Lee et al., 2023). Similarly, childhood abuse and neglect are also potential risk factors for mental health problems (Lew & Xian, 2019).

To mitigate the associations between trauma, adversity, and youth mental health problems, positive parent and peer (PPP) factors may play critical roles. For instance, healthy parent-child relationships and parental warmth buffer against mental health problems (Park et al., 2021). In addition, peer support and attachment reduce the risk of youth mental health problems (Worsley et al., 2019). Despite mounting strong evidence about the impacts of childhood trauma and adversity on youth mental health worldwide, it remains a fairly under-studied phenomenon in Singapore.

As displayed in Figure 1, the incidence of child abuse and neglect cases in Singapore has shown a concerning trend of steady increase over the past years. Specifically, in 2012, there were 177 reported cases of physical abuse, 70 cases of sexual abuse, and 136 cases of neglect. However, by 2021, these figures had surged to 788 cases of physical abuse, 443 cases of sexual abuse, and 910 cases of neglect.

Figure 1

Child Traumatic Experiences in Singapore



Source: Data.gov.sg

A meta-analysis of the 192 studies reporting age at onset for mental disorders found that 75% of mental disorders have their first onset before the age of 25 (Solmi et al., 2022). Similarly, the National Population Health Survey indicated that the highest proportion of people with mental health issues in Singapore were young people aged 18 to 29, rising to 25.3% in 2022 from 21.5% in 2020 (Ministry of Health, 2022). Thus, early prevention and intervention for emerging mental disorders during youth are crucial.

Trauma and adversity cover various types of prevalent violence leading to a range of negative impacts on young persons. These include abuse, neglect, peer victimisation, exposure to family violence, conflict, or crime. In particular, traumatic and adverse childhood experiences are significantly associated with an increased risk of youth mental health (Björkenstam et al., 2017; Lee, 2021).

This chapter introduces two studies conducted by the author and her colleagues to discuss the intersections of trauma, adversity, and youth mental health in Singapore and the key protective factors that buffer against these intersections and enhance youth mental health and well-being. Study 1 aimed to identify the different patterns of traumatic events that mainly occur in childhood using a latent class analysis (LCA) and to address how each type of childhood traumatic experiences (CTEs) is associated with mental health symptoms among university students (Lee et al., under review). Study 2 aimed to examine the patterns of co-occurring bullying involvement among undergraduate students and the associations between the patterns of bullying involvement and depressive and anxiety symptoms (Lee et al.,

2021a). Attachment and empathy that may mitigate the relationship were also examined.

Methods

Sample and Data Collection

Both Study 1 and Study 2 employed online surveys to collect data from a purposive sample of university students. Study 1 comprised 1,042 students aged 21 to 30 (mean age=23.8), while Study 2 consisted of 835 students aged 21 to 24 (mean age=22.0).

Measures and Analysis Plan

In Study 1, to examine the patterns of CTEs in the sample, a LCA of the seven CTEs variables (i.e., three domains of childhood abuse, two domains of childhood neglect, childhood traditional victimization, and childhood cyber victimization) was conducted using Mplus and the poLCA package in R. The Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003) was administered to assess five types of childhood maltreatment (i.e., physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect). Childhood traditional victimisation and cyber victimisation were each measured by a single item. Further, a series of linear regression analyses with the five mental health symptoms, including depression (the shortened version of CES-D; Carleton et al., 2013), anxiety (BAI; Beck et al., 1988), PTSD (PCL; Weathers et al., 1993), eating disorder (EDE-Q 6.0; Fairburn & Beglin, 2008), and suicidal ideation (SIDAS; van Spijker et al., 2014), were run to test research hypotheses.

Study 2 used the five dimensions (i.e., verbal, relational, physical, sexual, and cyber) of bullying—5 victimisation and 5 bullying dimensions (OBVQ; Olweus, 1996)—to identify the latent classes of bullying as independent variables; depressive symptoms (CES-D; Carleton et al., 2013) and anxiety symptoms (BAI; Beck et al., 1988) as dependent variables; respondent's empathy (BES; Jolliffe & Farrington, 2006) and parent and peer attachment (IPPA; Armsden & Greenberg, 1987) as moderators. Patterns of bullying involvement were identified through LCA. Hierarchical regressions were conducted to investigate the associations of depression and anxiety with latent classes of bullying involvement and the two-way interaction between latent class categories and the moderator variables.

Main Findings

Study 1: Child Traumatic Experiences and Mental Health in Singapore

Table 1 shows the prevalence of the five mental health symptoms by gender and ethnicity among Singaporean university students. The findings indicated that female students reported higher levels of anxiety and eating disorder compared to male students. Additionally, the levels of depression, anxiety, PTSD, and eating disorder were significantly higher in non-Chinese students than Chinese students.

Table 1
Mental Health Symptoms in Singaporean University Students

	Total (n = 1042)	Males (n = 281)	Females (n = 761)	Gender difference (t-test)	Non-Chinese (n = 76)	Chinese (n = 966)	Ethnic difference (t-test)
Depression	2.12 (0.48)	2.07 (0.51)	2.13 (0.47)		2.29 (0.54)	2.10 (0.47)	**
Anxiety	1.56 (0.42)	1.51 (0.45)	1.58 (0.41)	*	1.69 (0.51)	1.55 (0.41)	*
PTSD	1.63 (0.60)	1.61 (0.63)	1.64 (0.59)		1.94 (0.78)	1.61 (0.58)	***
Eating disorder	11.22 (4.58)	9.88 (4.32)	11.72 (4.58)	***	13.25 (5.26)	11.06 (4.49)	**
Suicidal ideation	9.77 (6.47)	9.36 (7.16)	9.92 (6.20)		10.30 (8.13)	9.72 (6.33)	

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$. Cell values indicate mean, standard deviations are in parentheses. The findings of this table were cited by Lee et al.'s study (under review).

Of the seven indicators of CTEs, emotional neglect (74.6%) was the highest CTE, followed by emotional abuse (61.0%), physical neglect (55.6%), traditional victimisation (46.6%), physical abuse (36.8%), cyber victimisation (14.9%), and sexual abuse (10.7%). Male students (47.3%) experienced more physical abuse than female students (32.9%), while female students (64%) reported more emotional abuse than male students (32.9%). Regarding ethnic differences, non-Chinese students (18.4%) reported a higher proportion of sexual abuse compared to Chinese students (10.1%), while Chinese students (75.7%) experienced a higher proportion of emotional neglect compared to non-Chinese students (60.5%).

Furthermore, there were key highlights of the study examining the impacts of the classes of CTEs on mental health symptoms. Four distinct classes of CTEs were identified as 1) low CTEs, 2) high/multiple CTEs, 3) abuse/victimisation, and 4) physical and emotional neglect. Mother's education level was positively associated with anxiety and PTSD, while family income was negatively associated with depression, anxiety, and PTSD. High/multiple CTEs and abuse/victimisation were strongly associated with depression, anxiety, eating disorder, PTSD and suicidal ideation.

Study 2: Bullying and Mental Health in Singapore

As displayed in Table 2, verbal bullies (25.0%) were the highest, followed by relational bullies (22.2%), cyberbullies (14.9%), sexual bullies (9.3%), and physical bullies (7.2%). In contrast, 41.0% were relational victims, 37.4% were verbal victims, 17.6% were cyber-victims, 17.5% were sexual victims, and 10.1% were physical victims.

Four classes of co-occurring bullying in Singapore were identified as 1) multiple bully-victims, 2) cyberbully-victims, 3) relational and verbal victims, and 4) uninvolved. Relational and verbal victims reported more depressive symptoms. Those who were involved in bullying (groups 1-3) reported more anxiety symptoms. Having strong peer relationships protected cyberbully-victims from anxiety, compared to those who were uninvolved. Being more empathic protected multiple bully-victims from anxiety, compared to the uninvolved.

Table 2

The Prevalence of Being Victims and Bullies in Singaporean University Students

Type	Bullies (%)	Victims (%)
Verbal bullying	25.0	37.4
Physical bullying	7.2	10.1
Relational bullying	22.2	41.0
Sexual bullying	9.3	17.5
Cyber bullying	14.9	17.6

Notes. The findings of this table were cited by Lee et al.'s study (2021).

Discussion

The findings from the two studies indicate a strong association between traumatic and adverse experiences and poor mental health among young people. To tackle youth mental health issues effectively, potential protective buffers need to be discussed. Social support from family, peer, school, and the community plays a crucial role in promoting youth mental health and well-being. For instance, Glickman et al. (2021) found that strong peer social support at an early age may decrease the risk of depressive symptoms by late adolescence. Ensuring that victims of CTE receive peer support is vital to mitigating CTE's negative impacts. A significant barrier to youth mental health help-seeking behaviours is mental health stigma. It is not just a matter of enhancing social support for youths with mental health symptoms, but also to ensure that social support can indeed be a pivotal asset.

To enhance youths' help-seeking behaviours for their mental health, it is essential to recognise and address youth mental health stigma while providing various social support tailed to their needs. Additionally, adopting active coping strategies, such as physical exercise, positive reappraisal, and healthy eating and sleeping habits, enable youths to become resilient to traumatic and adverse experiences and mitigate mental health problems (Cairney et al., 2014). Given the aformentioned bullying study showing that empathy is an essential protective moderator that buffers against the magnitude of the positive association between bullying involvement and mental health problems (Lee et al., 2021), empathy-building programmes and interventions may be especially beneficial for youth mental health and well-being. Furthermore, emotional regulation can be a promising factor in promoting youth mental health and well-being. Learning to regulate emotional responses to internal and external stressors is likely to directly enhance quality of life and well-being, as well as to reduce mental health symptoms (Menefee et al., 2022). Thus, implementing emotional regulation training programmes appears to be an important strategy for addressing mental health issues in schools and institutions.

Conclusion

This chapter adds to the existing scholarship on the intersectionality of the patterns of traumatic and adverse experiences and mental health outcomes among young people, as well as on promising protective factors. The findings can inform social service practitioners in developing and implementing effective prevention and educational training programmes to educate youths, parents, school administrators, and practitioners about the significant nature of traumatic experiences and severe mental health problems. Moreover, the insights derived from the chapter could shed

light on specific intervention strategies for young people that address the underlying mechanisms linking trauma, adversity, and mental health outcomes in youth.

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8. Identifying Factors that Promote Long-term Recovery in Youth Mental Health

Dennis W. H. Teo

Abstract

Successful mental health treatment needs to take a long-term perspective of the recovery process. However, studies rarely investigate long-term effects of risk and protective factors on emotional (EPs) and behavioural problems (BPs). Here, we analysed a longitudinal sample of 444 youths (ages between 13 to 19) from Singapore's general population over two years and assessed whether changes over the first year for two risk factors (EPs, BPs) and 12 protective factors, predict changes in EPs and BPs over the second year. We found that early improvements in EPs predict later improvements in BPs and vice versa, moderated by sex and baseline BPs. These findings imply that targeting the most visible mental health problems alone may not confer long-term benefits. Depending on the youth's sex and BPs, it can be constructive to administer more holistic treatments. Among protective factors, only parent attachment and caring relationships with teachers had long-term effects on BPs, highlighting the importance of caregiver support.

Long-term Recovery in Youth Mental Health

What does successful mental health recovery look like? Mental health problems tend to be chronic conditions that bring persistent and far-reaching consequences to one's way of life, even well into adulthood (Reef et al., 2010). For youths with mental health problems, successful recovery goes beyond symptom recovery, but also involves reclaiming control over their personal and social lives (Frost et al., 2017; Tew, 2013). Accordingly, mental health treatment needs to take a long-term perspective and consider how youths are recovering after treatment ends.

Surprisingly, scientific knowledge on long-term mental health recovery is limited. Prior research tends to focus on evaluating treatment programmes (Green et al., 2013; Law et al., 2016; Thomas et al., 2018). These studies serve to validate treatments and are not intended to shed light on the recovery process. Another line of research examines risk and protective factors for mental health problems which can inform us about recovery (Cotter et al., 2016; Crews et al., 2007; Smokowski et al., 2017). Nevertheless, such research fails to take a long-term recovery perspective and we still do not know how to provide treatment to youths in a manner that supports their recovery in the long-term. Hence, there is a need to conduct research

to identify the general factors that drive long-term mental health recovery. Exploring potential factors and comparing their respective influence will provide insight into what we ought to prioritise when designing treatment programmes.

Notwithstanding the lack of research on this topic, we still have some ideas on factors that could drive long-term mental health recovery. First, *reducing mental health problems* could bring long-term benefits (Harrison et al., 2001). Mental health problems often create further problems for youths (e.g., academic problems at school; Leow et al., 2024) that worsen their mental health problems (Molarius et al., 2009). Reducing mental health problems early could prevent such vicious cycles from forming and help youths focus on their recovery. Furthermore, mental health problems are often comorbid (Brown et al., 2001; Kessler et al., 2012) and might share common causes. Hence, reducing some mental health problems could bring benefits to other mental health problems (Oh et al., 2020). Second, *empowering protective factors* could help youths overcome their mental health challenges and regain control over their lives (Thomas et al., 2018). These protective factors can stem from youths' personal competencies (e.g., self-efficacy, problem-solving skills; Poirel et al., 2011) or youths' social environments (e.g., family support and peer support; Mezzina et al., 2006; Tew et al., 2011; Topor et al., 2006).

The Search for Factors that Promote Long-term Mental Health Recovery

The present study evaluated 6 mental health problems and 12 protective factors on their long-term positive impact on youth mental health. Specifically, we assessed these factors' long-term relationships with emotional problems (EPs) and behavioural problems (BPs), two broad dimensions of mental health (Achenbach, 1991), using a sample of 444 youths from the general population (aged 13 to 19; data from the Enhancing Positive outcomes in Youth and the Community (EPYC) project; Liu et al., 2023). Participants were recruited from ten secondary schools, referred to us by the Ministry of Education.

We chose to study the general population rather than a clinical population to facilitate the discovery of new factors that promote long-term mental health recovery. People diagnosed with mental illnesses are more likely to have ongoing treatment that constrains the changes they undergo, as mental health treatment is meant to achieve specific outcomes (Beckers et al., 2018). Studying this population would make it difficult to uncover new factors important to long-term mental health recovery that fall outside the scope of existing treatments. We can learn about long-term mental health recovery from non-clinical populations by studying periods during which youths undergo substantial changes in their mental health. This can allow us to identify factors that predict these changes. This study tracked participants during the COVID-19 pandemic, a period in which youths were found to experience significant fluctuations in mental health (Li, 2023), possibly due to the profound social and structural impact on their lives.

We interviewed this sample of youths in 2019 and followed up with them twice at one-year intervals. This interview schedule is comparable to the follow-up periods for treatment programme evaluations (Green et al., 2013; Law et al., 2016; Thomas et al., 2018) and longitudinal studies on risk and protective factors for mental health (Cotter et al., 2016; Smokowski et al., 2017). To evaluate long-term impact, we

employed auto-regressive linear models to assess if early changes in a candidate factor (i.e., mental health problem, protective factor) can predict later changes in EPs or BPs. For example, if we were interested in whether reducing EPs have a long-term impact on BPs, we could see whether improvements in EPs over the first year predict improvements in BPs over the second year. This approach can be applied to the protective factors as well (e.g., does an early increase in family functioning predict later decrease in emotional problems?).

As with any observational study, it was difficult to draw strong causal inferences from the data. However, our chosen model accounted for some potential confounders that can muddle our conclusions. By assessing the relationship between changes in candidate factors and changes in mental health problems over time, we accounted for stable characteristics unique to the individual, allowing us to examine the recovery process rather than individual differences. Additionally, in each of our models, we controlled for the baseline candidate factor (e.g., parent attachment at start of the first year), the baseline mental health problem (e.g., EPs at start of first year), and demographic variables (i.e., age, sex).

We measured EPs and BPs using the Diagnostic and Statistical Manual of Mental Disorders' (DSM) scales from the Youth Self-Report (Achenbach, 1991). An overall score of 60 and above suggests that the youth is at the borderline of the clinical range (Achenbach, 1991). Youths with a score of 60 and above are treated as having high emotional/behavioural problems, while those scoring below 60 are considered to have low/moderate emotional/behavioural problems. The protective factors were measured using 3 different scales: McMaster Family Assessment Device (measures family functioning; Epstein et al., 1978, 1983), Inventory of Parent and Peer Attachment (measures parent attachment; Armsden & Greenberg, 1987), and Resilience and Youth Development Module (measures the various assets and personal competencies, adapted from California Healthy Kids Survey; Constantine & Benard, 2001).

Long-term Effects of Reducing Mental Health Problems

We grouped the six mental health problems into EPs (i.e. depression, anxiety, and somatic problems) and BPs (i.e. conduct disorder, oppositional defiant disorder, and attention-deficit hyperactive disorder problems). Thus, our investigation could focus on four possible long-term relationships: 1) early EPs-to-later EPs, 2) early BPs-to-later BPs, 3) early EPs-to-later BPs, and 4) early BPs-to-later EPs. The first two relationships are *within-problem relationships*, while the latter two relationships are *cross-problem relationships.*

Our analyses revealed positive cross-problem relationships. Participants who showed early improvements in EPs tended to exhibit later improvements in BPs, and vice versa. Importantly, the strength of these relationships was influenced by sex and the severity of BPs (refer to Table 2). Specifically, we found that early changes in EPs predicted later changes in BPs in general, except for males with low/moderate BPs. The relationship became stronger for females with high BPs. Early changes in BPs also predicted later changes in EPs, but only for males with low/moderate BPs.

We found that within-problem relationships were in the negative direction. Participants who had higher improvements in emotional/behavioural problems early on tended to have lower improvements in emotional/behavioural problems one year later, and vice versa (refer to Table 1). While these findings appear complicated, we clarify in the following section how they can inform mental health treatment.

Working on Emotional and/or Behavioural Problems based on Youths' Profiles

Overall, the findings suggest that focusing on the most visible mental health problems alone might not be sufficient to facilitate long-term mental health recovery. Imagine you are treating a youth with high BPs, you might be inclined to focus on reducing their behavioural problems. This intuition is sound and should be followed, given that high BPs could cause further problems at home and at school (Stormshak & Bierman, 1998). However, our findings suggest that if the treatment only focused on the youth's BPs, the effectiveness of treatment would likely wane by the following year, and the youth's recovery journey would be unlikely to progress further. Rather, working on the less visible problems, such as the youth's EPs, can potentially help the youth progress along their recovery even after the first year.

Our findings recommend differential treatment based on youths' profiles. For youths with high BPs, it would be beneficial long-term to also focus on their EPs. Females are more likely to benefit from this dual focus as they experience stronger EPs-to-BPs relationships. Conversely, for youths with high EPs, it can be beneficial long-term to also focus on their BPs. However, this approach should generally be applied to males with low/moderate BPs.

Presently, it is difficult to recommend treatment programmes that target emotional and/or behavioural problems as practitioners typically prescribe treatments based on the specific diagnosis (e.g., major depressive disorder) rather than high/low BPs (Macneil et al., 2012). However, it is likely that some programmes are more effective at reducing BPs (e.g., Acceptance and Commitment Therapy) or EPs (e.g., Mindfulness-Based Cognitive Therapy), allowing practitioners to match the appropriate treatments to the youths' profiles. Further research is needed to categorise existing treatments through this lens.

Identifying Warning Signs when Monitoring At-risk Youths to Prevent Future Escalation

Our findings have implications for the management of at-risk youths with low/moderate mental health problems. For males, early changes in BPs predict later changes in EPs. For females, early changes in EPs predict later changes in BPs. These observations stem from the original cross-problem findings by considering their implications for youths with low/moderate BPs.

The findings indicate the different warning signs for males and females. For instance, when males develop behavioural problems, they are likely to escalate into emotional problems later. Hence, monitoring males for early signs of behavioural problems and treating them early might prevent later escalation of emotional problems. Conversely, for females, monitoring and treating their emotional problems early are warranted.

Long-term Effects of Empowering Protective Factors

Of the 12 protective factors, only two factors were found to have long-term positive impact on BPs (see Table 1 for an overview of all factors). Improvements in *parent attachment* (strength of the relationship between parent and youth) and *caring relationships between teacher and youth* predicted reductions in BPs after one year.

Caregiver Relationships are Integral to Successful Long-term Mental Health Recovery

The importance of caregiver relationships (with parents, teachers) to mental health is well-documented (Mezzina et al., 2006; Tew et al., 2011; Topor et al., 2006). However, this study highlights its significance for long-term mental health recovery, even amongst other well-established protective factors. This should motivate practitioners, caregivers, and community-based efforts to emphasise caregiver bonds. Practitioners are encouraged to involve caregivers in the treatment process early to create long-term support for youths even after treatment ends. Of note, caregiver support was found to contribute long-term only to behavioural problems and not to emotional problems. One explanation is that behavioural problems are more visible, making it easier for caregivers to support the management of these problems as there are clear signs to look out for. In contrast, emotional problems are internal and less visible, making it harder for caregivers to manage these problems as they might not be aware of their existence. Practitioners can thus act as a source of knowledge for caregivers and help caregivers find effective ways to give support, both behaviourally and emotionally. Caregivers and community efforts should work toward strengthening caregiver bonds prior to the escalation of mental health issues. This can take the form of self-help or programmes to help caregivers and youths deepen their bonds, alongside larger efforts to provide education on how to monitor for mental health problems.

Toward a Better Understanding of Long-term Recovery

This study pioneers the search for key drivers of long-term mental health recovery. It has provided insights into what we need to prioritise (e.g., holistic treatments that consider cross-problem effects, caregiver relationships) and how treatments can be more efficiently administered (e.g., targeting emotional and/or behavioural problems based on the youth profile). This study represents a promising start, and we hope that these insights can provide guidance to existing practices.

However, our study also revealed a large gulf in our current understanding of long-term mental health recovery, especially in our knowledge of effective protective factors. In some circumstances, strengthening caregiver bonds might be considerably challenging (Tew et al., 2011). Some parents/guardians might remain uncooperative, and teachers might be limited in their capacity to render support. We need a larger toolkit of protective factors that can be flexibly applied in various contexts to support youths, in terms of both their behavioural and emotional problems (recall that none of the protective factors were found to have positive long-term influence on EPs). We hope that future research will expand the knowledge base in this area, empowering more youths to achieve successful mental health recovery.

Table 1

Strength of long-term relationship between early changes in candidate factors (Mental health problems, protective factors) and later changes in BPs/EPs.

Candidate Factors	Behavioural Problems	Emotional Problems
Reducing Mental Health Problems (Positive associations indicate positive long-term effects)		
Behavioural Problems	-.21**	.07
Emotional Problems	.15*	-.13**
Empowering External Protective Factors (Negative associations indicate positive long-term effects)		
Family Functioning	-.03	.02
Parent attachment		
Attachment to Mother	-.09*	-.04
Attachment to Father	-.10*	-.04
Home Assets	-.01	-.004
School Assets		
Caring Relationships	-.13**	-.04
High Expectations	-.07	-.03
Meaningful Participation	.04	.01
Peer Assets	-.01	.12**
Community Assets	-.05	.03
Empowering Internal Protective Factors (Negative associations indicate positive long-term effects)		
Cooperation & Communication	.03	.08
Empathy	-.003	.03
Goal & Aspiration	0	.09*
Problem Solving	.03	.08
Self-Awareness	.03	.002
Self-Efficacy	.02	.07

Notes. *p<.05, **p<.01, numbers represent standardised coefficients from auto-regressive models. Higher scores indicate stronger relationships. Signs indicate direction of relationships.

Table 2

Strength of cross-problem relationships across different youth profiles.

	Low/Mod BPs at Baseline	**High BPs at Baseline**
	Early EPs → Later BPs	
Male	-.01	.22*
Female	.18*	.42**
	Early BPs → Later EPs	
Male	.26**	.02
Female	-.09	.07

Notes. *p<.05, **p<.01, numbers represent standardised coefficients from auto-regressive models. Higher scores indicate stronger relationships. Signs indicate direction of relationships.

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PANEL 2

Upstream Prevention: Digital Initiatives and Peer Support for Youth Mental Health

9. Remarks by Panel 2 Moderator

Serenella Tolomeo

Note: These remarks were transcribed from the conference recording with edits.

As our honourable guests Dr Janil Puthucheary and Emeritus Professor Dr Vasoo discussed this morning, we need to make meaningful progress in reversing the youth mental health crisis, and to shift our focus to early intervention and prevention. In this panel, we will be focusing mainly on the upstream and of course, we need to proactively tackle the root of the problem and provide mental health support before people reach the breaking point. In this context, our first speaker, Janice Weng, will be discussing the innovative digital solutions of our national mental health programme. The second speaker, Geck Hong Yeo, will be presenting findings from a peer support intervention in secondary schools, and our last speaker, Eric Sng, will be sharing more insights on digital technology's implications on social work practice.

In general, the topics on this panel are about digital mental health interventions, and there is a lot of interest in how we can ensure anonymity, especially for the sharing of information that service users are reporting online, such as issues that our youth are willing to share with professionals and their expression of emotions. There are also questions on how we can leverage Artificial Intelligence (AI), and how we can manage and balance offline and online interventions.

We can leverage on AI and do a lot of work in this field, not only to make accurate predictions of the diagnosis of a person given some specific cues or emotions, but also hold a conversation on a chatbot. As a trained clinical psychologist, back then I was dreaming to discuss about these issues at a panel like this because we really needed the support, and in Singapore we need to increase the manpower for psychologists, psychiatrists, and the counsellors working in the field.

It is also important to think about how we can create mental health interventions that do not alienate service users further. Although I am positive and supportive about digital interventions, we need to be aware that there are some reservations about them. For instance, would they make service users feel alone in accessing care or by talking to an AI chatbot? Would they perpetuate their sense of isolation? These will be discussed by the speakers.

10. Advancing Youth Mental Health through Digital Solutions: Insights from the Development and Implementation of *youth mindline* and *let's talk*

Janice Huiqin Weng, Caleb Tan, Hazirah Hoosainsah

Abstract

The prevalence of mental health issues among youth in Singapore, coupled with challenges in accessing professional help due to stigma and resource scarcity, underscores the need for innovative solutions. Digital platforms offer promising avenues to address these challenges, with increased accessibility and reduced stigma. Leveraging insights from established frameworks and stakeholder engagement, this paper presents the development and implementation of *youth mindline* and *let's talk*, tailored digital mental health platforms for young individuals in Singapore. These platforms prioritise anonymity, trust-building, progressive engagement, and co-creation to cater to the unique needs of youth. Results indicate positive user engagement and satisfaction, with significant uptake observed since launch. Notably, the involvement of youth in the co-creation process ensures all solutions are relevant and meaningful to the target demographic. Leveraging artificial intelligence enhances platform efficiency, facilitating personalised support and resource allocation. By connecting digital solutions with human touch and involving youth in the design process, these platforms offer a comprehensive approach to addressing youth mental health needs in Singapore, help address manpower challenges in the sector, and serve as promising models for digital mental health interventions globally.

Introduction

The prevalence of mental health disorders globally, accounting for one-sixth of disability-adjusted life years, highlights the urgent need for effective interventions (World Health Organization, 2024). In Singapore, the prevalence of mental disorders has risen to 13.9% in 2016, contributing to significant societal challenges (Subramaniam et al., 2019). This is compounded by stigma and limited accessibility to mental health professionals, with only 4.4 psychiatrists and 8.3 psychologists per 100,000 population in 2020 (Ministry of Health, 2020).

Amidst these challenges, digital solutions offer promising avenues for intervention, such as by leveraging smartphones and internet-based interventions to increase accessibility of mental healthcare and reduce stigma (Hollis et al., 2018; Andersson et al., 2019; Heckendorf et al., 2022). The COVID-19 pandemic accelerated the adoption of such services in Singapore (Tang, 2021), culminating in the launch of *mindline.sg* by the MOH Office for Healthcare Transformation in 2020. This platform initially offered over 500 curated resources, a self-assessment tool, and an artificial intelligence (AI) therapy chatbot, addressing the needs of diverse demographics, including youth, adults and families.

Of particular concern is the emergence of youth mental health as a critical issue in recent years, with studies indicating high prevalence rates among young people aged 10 to 34 in Singapore (Subramaniam et al., 2019). Feelings of loneliness, isolation, and fear of the future among youth have become even more pronounced since the pandemic. To meet the growing mental health needs of youth, the youth-centric version of *mindline.sg* (named *youth mindline*) and an online anonymous peer support forum, *let's talk*, were created in 2022. The user journeys on *youth mindline* are focused on common sources of stress faced by youth, such as the pressures of adulting and exam anxieties, while *let's talk* serves as a safe space for youth to seek advice and share their feelings. To ensure safety, the latter is monitored and managed by trained moderators and professional therapists. Notably, the forum has attracted over 8,000 registered users and 80,000 unique visitors, indicating its relevance and impact in addressing youth mental health needs. The Ask-a-Therapist feature enables youth to pose mental health-related questions to qualified professionals and receive a response within 24 hours, further enhancing the platform's utility and support capabilities.

Framework for Developing *youth mindline* and *let's talk*

In this paper, we present a framework for developing *youth mindline* and *let's talk*, drawing inspiration from established digital mental health frameworks like the American Psychiatric Association's App Evaluation Framework (American Psychiatric Association, 2018). *youth mindline* and *let's talk* were deliberately crafted as web applications to enhance accessibility and anonymity. Our framework revolves around anonymity, trust-building, progressive engagement, and involving youth in the co-creation process.

Anonymity

Anonymity is thought to be a key component when building a digital mental health platform due to stigma surrounding mental health in Singapore, hindering help-seeking behaviour (Pang et al., 2017). A high level of anonymity offered on a digital platform avoids unnecessary stigma and encourages help-seekers to take the first step in their mental health journey, offering individuals choice and empowerment as to when they may decide to seek in-person support. Therefore, *youth mindline* prioritises anonymity, collecting only anonymous user IDs (i.e., a generated cookie ID) and optional nicknames. The platform's implementation as a web app further protects user anonymity. Similarly, anonymity is rigorously maintained on *let's talk*. No personal information is collected except for email addresses to support nudges, and these are kept strictly confidential. Youth have the option to choose a

pseudonym, or ‘handle’, and are provided with an option to select from curated profile pictures (avatars) to maintain privacy and prevent unintentional disclosure of personal details or images.

Building Trust

Ensuring credibility of published information is vital to building trust on a digital mental health platform. On *youth mindline*, this is achieved through an Advisory and Editorial Board (AEB) and Clinical Review Panel (CRP) comprising mental health and healthcare leaders and experts among the healthcare ecosystem in Singapore. Together, the AEB and CRP provided detailed advice, oversight, support, and validation of the clinical effectiveness and safety of the content, referral/escalation methodology, etc., providing assurances to users that the quality of resources and methodologies employed are trustworthy.

Given the high level of confidence Singaporeans generally place in the government over the media or other non-government organisations (Mathews, 2021), government involvement is highlighted on the landing pages. While government origins on the landing page will give some confidence, overt associations with the government could deter others. Therefore, a generic name and website address mindline.sg was chosen instead of a website address with a ‘.gov.sg’ suffix.

On *let’s talk*, the credibility of professional therapists and peer supporters is crucial. Therapists must have post-graduate training in Counselling or Clinical Psychology and be registered with the relevant Professional bodies (e.g. Singapore Association for Counselling). This ensures that responses on Ask-a-Therapist meet professional standards. Similarly, peer supporters are required to have undergone comprehensive training in peer support to engage effectively and empathetically with peers. Upholding these standards fosters a trusted environment on *let's talk*, enabling youth to seek support confidently.

Progressive Engagement Levels

youth mindline employs a progressive engagement model to drive behaviour change goals. Firstly, the platform focuses on generating awareness through various marketing strategies, including search engine optimisation, traditional and digital marketing, and partnerships with educational institutes to target youth effectively.

Subsequently, youth are encouraged to assess their mental wellbeing using a self-assessment tool. This tool, implemented as a hierarchically evolving survey, assesses anxiety symptoms, depression symptoms, and self-harm ideation. It uses clinically validated screening tools, such as the Patient Health Questionnaire (PHQ-4), to automatically direct users to more comprehensive assessments like the Generalised Anxiety Disorder Assessment (GAD-7; Spitzer et al., 2006) or the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) based on predetermined thresholds. After completing the application, there is a triaging into wellness protocols ranging from “well” to “in-crisis,” allowing for personalised resource recommendations. The platform provides a wide range of curated resources and articles to increase mental health literacy and awareness of local support channels.

Then a youth can interactively practice a self-care skill offered on the platform. This includes the AI chatbot-led (Wysa) digital therapeutic exercises and various online courses on emotion regulation developed by Intellect, a Singapore-based digital mental wellbeing solution provider.

The emotionally intelligent chatbot deploys a range of dialogue-based interactive exercises inspired by cognitive behavioural therapy (CBT). These exercises teach skills such as mindfulness and reframing thoughts. Moreover, the chatbot can engage in free-form conversations, acting as a "pocket therapist" for the user to share their emotions safely and anonymously, anytime and anywhere. Multiple studies have pointed towards the efficacy, safety, and impact of the Wysa chatbot (e.g., Inkster et al., 2018; Meheli et al., 2022).

Online self-guided mental wellbeing courses (learning paths) on topics such as developing healthy sleep habits, and quicker, bite-sized support (rescue sessions) on topics such as staying focused and managing stress developed by Intellect were introduced on *youth mindline* in June 2023. These exercises are designed to build skills and resilience to manage everyday challenges and to serve as stand-alone sessions for in-the-moment support respectively. The content provided in these exercises have been validated by licensed psychologists and behavioural experts and evaluated in various studies (e.g., Toh et al., 2022; Kosasih et al., 2023).

Right-Siting Youth who Present with Higher Risk and/or Severity

To address the limitations of digitally delivered services, both platforms incorporate strategies to identify and support people at higher risk or severity levels. This includes directing users to human-based hotlines and emergency services when appropriate, as identified through the self-assessment tool or the AI chatbot on *youth mindline* and via active moderation processes on *let's talk*. These protocols are clearly communicated on the platform through visible prompts and links to emergency services, ensuring youth-in-crisis receive timely and appropriate support.

Involving Youth in the Co-Creation Process

Prior to the development of *youth mindline* and *let's talk*, we analysed various strategies and initiatives to enhance the mental wellbeing of youth by bringing together a group of students and young working adults aged 17 to 25 (coined mindline youth fellows). The youth fellows were tasked to conduct research and co-create solutions aimed at addressing the specific needs and barriers encountered in their mental health journeys. Extensive workshops, focus group discussions, and co-design sessions uncovered a desire for social support and meaningful human interactions delivered in a safe online environment. We found that youth specifically value having access to human-based support amongst the proliferation of purely digital self-management solutions. Recognising this need, we co-created *let's talk*, providing a low-barrier means of accessing professional support in a safe and anonymous manner.

Leveraging AI for Scalability

As the *let's talk* user base continues to grow, we anticipate challenges in moderating the platform and responding to questions in a timely manner while maintaining quality. To address these challenges, we are trialling the use of large language models (LLMs) to assist our therapists in searching for relevant content from a trusted knowledge base (*mindline.sg*) based on the user's need. While the therapist may copy-and-paste recommended resources from this tool, they remain fully responsible for the content in their reply. The use of such tools can significantly save the therapist's time in searching for a pool of potentially optimal therapeutic exercises to be recommended to a particular person.

Data Collection for Performance Analytics

Unique anonymous user IDs, interpreted as unique users on *mindline.sg* and *youth mindline*, indicate the volume of incoming traffic to the platforms. Given that the platforms function as content directories rather than as repositories, non-bounced users provide the most accurate engagement metric. The non-bounced rate refers to the proportion of unique users who visit the site and load at least two pages. The engaged rate measures the proportion of non-bounced users who spend 40 seconds or more on the site, suggesting a higher level of engagement, likely involving exploration of multiple resources. The return rate measures the proportion of non-bounced users, identified by a returning anonymous user ID, who revisit the site on another day after their initial visit.

On *let's talk*, monthly active users are calculated as the percentage of registered users who performed at least one activity on the platform, such as viewing a post, over the past 30 days.

Results

Site Usage

Since the launch of *mindline.sg* in June 2020, over 1.3 million unique users have visited the site, and our statistics show that 53% of these visitors engage with an exercise on the platform, such as the self-assessment tool or a Wysa or Intellect exercise.

To date, *let's talk* has accumulated over 8,000 registered users. We have seen over 5,000 posts and 600 Ask-a-Therapist questions answered over a one-year period. The visitor and engagement metrics of *mindline.sg*, *youth mindline* and *let's talk* can be found in Tables 1 and 2.

Table 1

All-time Conversion Rates of mindline.sg and youth mindline

Conversion Rates	*mindline.sg*	*youth mindline*
Non-bounced rate (of all visitors)	43.9%	67.5%
Engaged rate (of non-bounced visitors)	19.4%	14.7%
Return rate (of non-bounced visitors)	5.3%	5.3%

Note. We see higher non-bounced rates of visitors on *youth mindline* as compared to the general population's version of the platform (*mindline.sg*).

Table 2

All-time Engagement Rates of let's talk

% of users who have posted	Monthly active users
64.8%	25.1%

Note. Percentages are tabulated against the total number of registered users on the platform.

Utilisation of the AI Chatbot and Therapeutic Exercises

The Wysa AI chatbot was added to the site in October 2022. From its implementation to 21 February 2024, 411,801 unique visitors (57.2% of the 719,933 non-bounced visitors to the platform over this same period) engaged with the chatbot through a CBT-inspired exercise or a free-form chat. By comparison, 16.4%, 13.3% and 7.8% of non-bounced visitors started an Intellect resource, completed a self-assessment exercise or viewed some other resource, such as an article or video respectively, over the same period. The therapeutic exercises delivered by the AI chatbot are the most popular feature on the site, with sleep exercises emerging as the top resource.

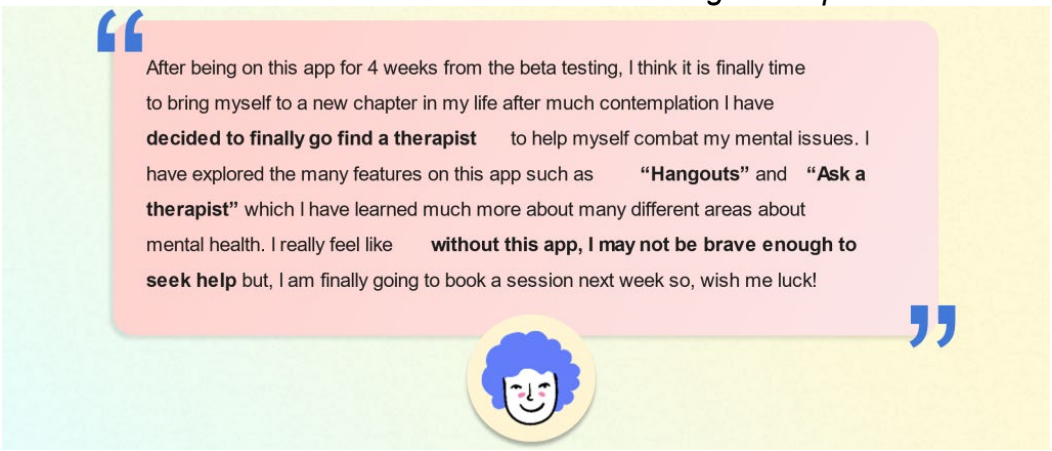
Insights from Beta Testing let's talk

Prior to the official launch of the community forum in February 2024, several rounds of beta testing were conducted involving over 200 youths from collaborating partners, including Singapore Polytechnic, Youth Corp Singapore, Republic Polytechnic, and Temasek Polytechnic. These sessions aimed to elicit feedback on user experience and assess the platform's initial impact. The outcomes from the beta test yielded promising results, with 100% of participants citing *let's talk* as being effective, to varying degrees, in offering and receiving peer support. Moreover, 93% acknowledged the efficacy of Ask-a-Therapist in enhancing their mental wellbeing, and 84% expressed feeling safe in sharing their thoughts and emotions on the platform.

Of note, amidst the feedback received, one particularly encouraging response stood out: one beta test participant reported that after 4 weeks on *let's talk*, the participant gained valuable insights and felt empowered to seek professional help (Fig. 1).

Figure 1

Feedback from One of the Beta Testers Describing the Impact of let's talk

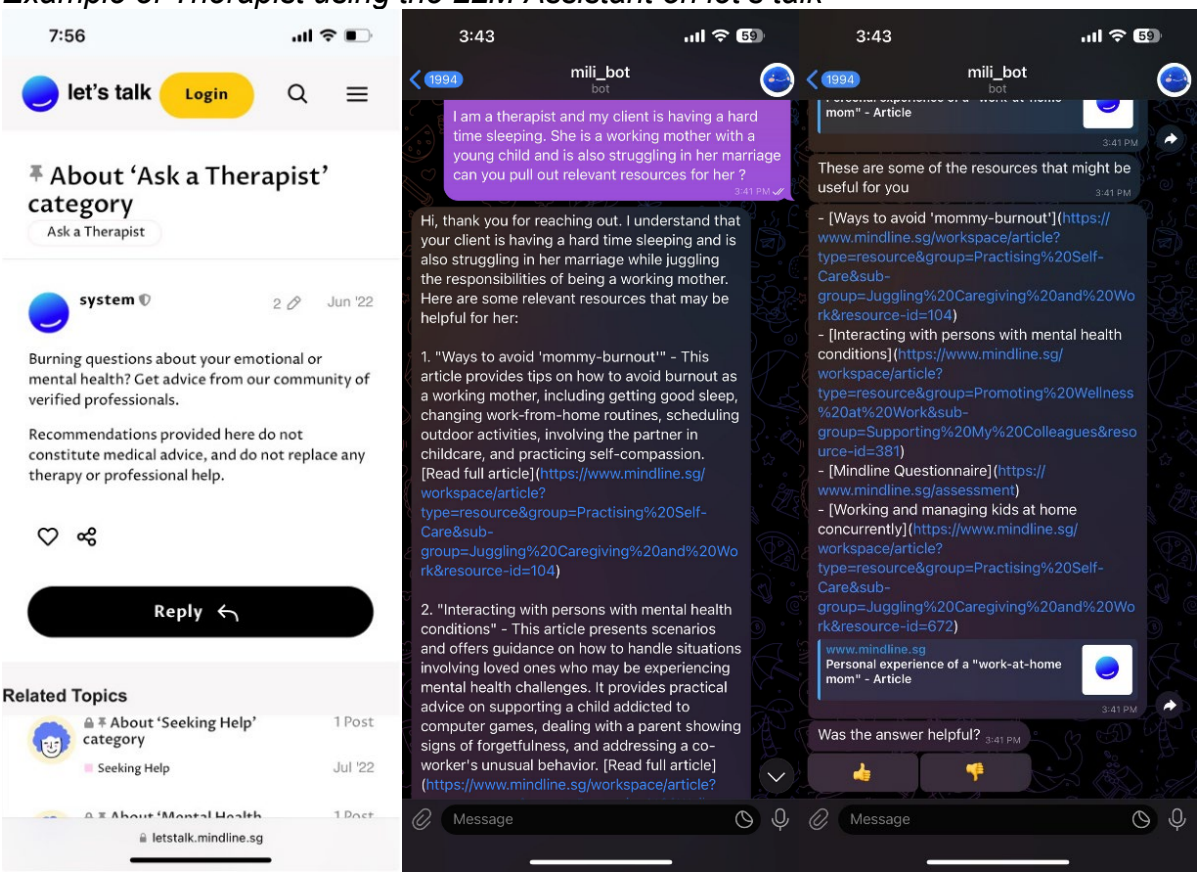


Utility of Leveraging AI for let's talk

Since trialling the LLM assistant in supporting therapists on *let's talk*, 88% of the 30 responses the bot has helped with were rated as helpful. In Figure 2, we show an example of how our therapists use the LLM assistant.

Figure 2

Example of Therapist using the LLM Assistant on let's talk



Note. (Left) The Ask-A-Therapist service on let's talk. (Middle) The Telegram interface for the LLM therapist assistant used by *let's talk* staff therapists to retrieve therapeutic content relevant for a post. (Right) Feedback is collected from therapists possibly enabling future AI improvement efforts.

Discussion

Trust and Anonymity

The co-creation process and feedback from beta tests revealed that users trusted the platforms, both in terms of content reliability and on the perceived anonymity of its use. Curating content and tools endorsed by both local experts in the field and the government was important to achieve this goal in the Singaporean context.

Progressive Engagement

The progressive engagement approach on *youth mindline* encourages exploration of the site and reading articles, followed by deeper engagement practicing self-care skills through tailored products, nudges, and personalisation. Therapeutic exercises delivered through the AI chatbot are the most used feature on the site, followed by Intellect's rescue sessions, indicating that short-form digital therapeutics enable users to practice skillsets are of immense popularity, particularly to youth users.

Bridging Digital Solutions with Human Touch

Standalone digital solutions for youth mental health, while valuable, may lack the personalised engagement desired by youth, as highlighted in feedback from focus group discussions. However, it is also essential to acknowledge the persisting stigma surrounding mental health issues, often necessitating the preservation of anonymity when seeking support. Thus, a blended care approach emerges as a promising model, offering the flexibility to transition between digital and non-digital interventions based on individual preferences and evolving needs. A blended care approach, as with *let's talk*, leverages digital accessibility while recognising the importance of human connection in promoting positive mental wellbeing among youth, providing a more integrated service.

Involving Youth in the Co-Creation Process

To design effective solutions tailored to the mental health needs of youth, it is imperative to actively and meaningfully involve them in every step of the process, from programme design to evaluation. By actively listening then incorporating their ideas, we ensure the designed interventions truly meet their needs. Furthermore, by encouraging youth to feel a sense of ownership and empowerment, the solutions we create are more likely to lead to long-lasting and effective results in improving their mental wellbeing.

Leveraging AI to Address Manpower Challenges

Integrating AI into digital mental health platforms boosts efficiency and optimises resource allocation. By automating tasks, AI empowers mental health professionals to focus on complex cases and therapeutic interventions. In our case, the LLM assistant helps to analyse vast amounts of information with precision and speed to retrieve the most suitable resources tailored to the needs of people using *let's talk*. Early feedback from therapists suggests a promising helpfulness rating of 88%, supporting the potential for significant time savings in responding to queries.

Manpower shortages, stemming from a lack of sufficiently trained professionals, present ongoing challenges and are anticipated to escalate as demand for services continue to grow. Using digital technologies, particularly through AI integration, serves as a viable and cost-effective strategy to address these challenges sustainably.

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11. Implementing Digital Peer Support Training for Adolescent Mental Health

Geck Hong Yeo

Abstract

Background: This project trains adolescents in effective digital peer support for mental well-being. An accumulating body of work emphasises that in adolescence, digital platforms afford a unique social context for peer support that is important for managing well-being. With limited evidence-based interventions that train adolescents in effective online peer support, there is a need to implement such an intervention at scale.

Methods: Using a pre-post comparison intervention design, participants involving 450 adolescents from three Singapore high schools were subjected to a training intervention that entails four bite-sized modules on psychological skills for youth mental well-being that include mattering, selfhood, compassion and mindfulness. The project team evaluated the effectiveness of the digital peer support training programme, which refers to the degree in which adolescents' support responses to real cases of online peer sharing are associated with the four psychological skills of mental well-being. In assessing these programme outcomes, we used the pre-post evaluation design.

Discussion: This study trial establishes an evidence-based practice on digital peer support training for adolescent mental health using a multidisciplinary approach that considers scientific theories and empirical findings from implementation science, communication science and developmental psychology.

Introduction

According to the World Health Organization (WHO), approximately half of all mental health issues have an early onset at age 14, and these cases are predominantly undiagnosed and untreated (WHO, 2021a, 2021b). Among adolescents, 16% of the global burden of disease and injury is due to their mental health conditions, with depression as the leading cause of impairment (WHO, 2021a, 2021b).

According to the developmental psychopathology framework, a key mental health determinant in adolescence is the role of peers (Prinstein & Giletta, 2016). As digital communication becomes deeply intertwined with and increasingly prevalent in adolescent lives, peer interaction over digital platforms is the norm for soliciting

support for one's well-being (Loades et al., 2020). A major gap in our current knowledge is our limited understanding of adolescents' digital peer experiences, especially involving peer support. Scholarship on digital peer support for adolescents emerged only fairly recently, and much less is known about digital peer support for adolescents' mental well-being (Tolley et al., 2020). This study trial considers these strategies in the design and implementation of an intervention programme that trains adolescents in digital peer support for mental well-being to address the lacuna of theoretically driven and empirically grounded peer support training programmes for adolescents (Albers et al., 2017; Yeo et al., 2023).

Programme Design/Feature: Adolescent Support Responses

Underpinning this training intervention is the Healthy Minds Framework that synthesises research from well-being, cognitive and affective neuroscience, and clinical psychology in providing a unified organisation of psychological skills that relate to four pillars of well-being (Dahl et al., 2020). Specifically, the four pillars of well-being are Awareness, Connection, Insight, and Purpose, and the four corresponding skills refer to Mindfulness, Compassion, Selfhood, and Mattering, respectively. Anchored by the Healthy Minds Framework, we design our program to train adolescents the four pillars of well-being and their corresponding psychological skills in providing effective peer support: (a) mattering, (b) selfhood, (c) compassion, and (d) mindfulness.

Mattering refers to the difference we make to the world in which we live. It is operationalised by three key components: (i) attention—others' acknowledgement of our presence and unique characteristics; (ii) importance—people's interest in and concern about us; and (iii) reliance—we are a source of help and feel needed by others (Marshall & Tilton-Weaver, 2019). In adolescence, there is increased reliance on peers in the development of selfhood, which comprises self-knowledge, interpersonal self, and self as agent (Baumeister, 2016). Compassion is conceptualised as the responsiveness to others' pain or suffering and the profound need to ameliorate suffering (Flett & Nepon, 2020). In mental health interventions, it is often incorporated with mindfulness (González-García et al., 2021; Jazaieri et al., 2013), which is defined as paying attention to the present moment with intention and acceptance (Kroenke et al., 2001).

Programme Planning, Implementation, and Evaluation

We identified the Getting to Outcomes (GTO) framework as appropriate for the implementation of our training intervention. The GTO focuses on a systematic accountability approach to help practitioners plan, implement, and evaluate their programme, with an emphasis on evaluation (Krippendorff, 2018). Figure 1 below provides information about the use of GTO framework in this study.

Figure 1
Getting to Outcomes Framework

Steps	Description	Digital Peer Support Training
Planning	Identify core components of the intervention	• Identified theoretical models and evidence-based best practices in engagement ○ Healthy Minds Framework
Programme implementation	Identify intervention strategy, implementation plan, and implementation facilitators and barriers	• 4 bite-sized modules to train declarative knowledge on and application of 4 digital peer support skills • Modules delivered through training workshops, simulation activities, and homework assignments • 8 sessions (2 sessions for one skill) following the duration of a tutorial (90 minutes)
Programme evaluation, scalability, and sustainability	Assessing implementation and programme effectiveness and scaling the programme	• Primary outcome: degree to which intervention participants' peer support skills demonstrated increase post vs. pre-training • Scaling and sustaining of the digital peer support training programme

Method

Study Design

This study implements a comprehensive programme on digital peer support for adolescent mental health training on the substantive knowledge and application of digital peer support and active ingredients of youth mental well-being. The primary outcome is on the effectiveness of the comprehensive training programme in improving students' skills in providing effective peer support online. The study trial was registered on ClinicalTrials.gov on December 31st, 2021 (NCT05199675). The National University of Singapore Institutional Review Board (IRB) serves as the single IRB, and the study was approved on December 31st, 2021. Additionally, permission was obtained from the Ministry of Education in Singapore to conduct the study. Teachers, students and their parents provided consent after the eligibility check prior to study commencement. The study has undergone peer review by the Society for Research in Child Development Small Grant Award for Early Career Scholars.

Setting and Participant Recruitment

The study was conducted with secondary schools in Singapore. From January 2022 to December 2022, and from March 2022 to December 2022, three secondary schools' students were recruited, respectively. For this study trial, we conducted the proposed study with three secondary schools in Singapore, which comprises 150 students each.

Sample

Our sample included 3 teachers aged 22 to 65 with a post-graduate diploma in education, and high school students aged 13 to 16. At pre-training, before each

training workshop, students with low psychological well-being scores (i.e., 2 standard deviations below the mean) (Rosenberg & McCullough, 1981) were excluded and referred to the teachers and school counsellors.

Sample Size

This study involved 3 teachers and 450 students. Based on a power analysis, with a student drop-out rate of 20%, which is based on a pilot study of the digital peer support training programme, the sample has greater than 80% power for finding Cohen's d of 0.59—a medium-large effect size. This calculation is based on a score of 3.34 (score range of 1 to 4) and a standard deviation of 1.70 for the intervention arm established in a pilot study of the training programme using the student-primary outcome assessing mattering, selfhood, compassion and mindfulness.

Intervention

The training consisted of four bite-sized modules on mattering, selfhood, compassion, and mindfulness. The first two sessions covered the topic on Mattering, the following two sessions on Selfhood, the next two sessions on Compassion, and the last two sessions on Mindfulness. The training was conducted by an educational psychologist, with research expertise in youth development of psychological well-being and teaching experiences in a Singapore high school. We assessed students' proficiency in applying digital support skills to adapted cases of real-life peer emotional disclosure (from another study). All assignments were reviewed and evaluated using assessment rubrics with a score range of 1 to 5.

Outcomes Measurement

To demonstrate effectiveness in building adolescents' competency in providing effective peer support online, this digital peer support training intervention evaluated the degree to which adolescents' support responses indicate mattering, selfhood, compassion, and mindfulness, with three cases of peer disclosure at pre- and post-training. Here is the scale or set of components used to assess each ingredient:

Mattering was assessed via the 5-item Mattering Scale (Rosenberg, 1989).

Selfhood comprised self-knowledge, interpersonal self, and self-agency, which were assessed via these respective scales: the 10-items Rosenberg Global Self-Esteem Scale (Fenigstein et al., 1975), 12 self-presentation tactics (Kumar & Tripathi, 2022), and the General Self-Efficacy and Social Self-Efficacy Scales (Sherer et al., 1982).

Compassion was assessed following the Compassion Cultivation Training protocol (Carson & Langer, 2006).

Habits of Mind were assessed based on the degree to which they reflect mindful self-acceptance.

Two undergraduate research interns evaluated the adolescents' written (open-ended) responses to the peer disclosure cases for the extent to which they reflect the four skills using the respective scales. A composite measure/score of effective

peer support was created for each participant, with each item, component, or technique rated on a 4-point scale (1 = *not at all* to 4 = *very much*) that can total in highest and lowest scores of 108 and 0, respectively. Below, we provide a sample coding scheme and students' responses in Figures 2 and 3.

Figure 2

Coding Scheme for Mattering: To what extent do adolescent support responses reflect or help the peer understand the following:

	A lot	Somewhat	A little	Not at all
How important is the peer to others?	4	3	2	1
How much do others pay attention to the peer?	4	3	2	1
How much would the peer be missed if he/she went away?	4	3	2	1
How interested are others in what the peer has to say?	4	3	2	1
How much do other people depend on the peer?	4	3	2	1

Note. Coders assess adolescents' digital peer support responses with the scale above for Mattering.

Figure 3

Examples of Students' Responses for Mattering

Baseline/Pre-training	Post-training
#1: go to teacher and request for help	#1: Really appreciate you reach out to me and I do 2 understands you. Maybe you try to communicate with your mum and let her reduce some of the activities or if not, you could do a planning for daily. This could allow you to use your time wisely and won't be rushing to finish revisions or homework. I can tell that you really prioritise your friendship very much and i really admire that.
#2: You can try talking to you mother on cutting down the classes especially during exam periods so u will have sufficient time to rest and study. You can also take breaks in between study sessions and have some "me-time" so u won't so stress. If you need someone to talk to, feel free to talk to me!	#2: Hey Jessica, I can tell that you are very tired and stress from academics. Maybe you can try talking to your mom about cutting down the enrichment classes? Or maybe you can stop going for ballet and guitar class during exam periods only, so you have more time for self revision. I see that you also don't want to talk about your problems as you are worried that it will "burden" your friends. However, I am sure they might not feel this way?.This will also increases the bond betweeIt is always good to talk out your problems as not only will you feel better, your friends will be have this sense of "she trusts me well enough to tell me her problems"n the two of you :) If you want to talk to a trusted adult, you can maybe try go to the school counseller? If not, feel free to talk to me anytime. Have a great day and jiayou for all your exams!! :)

Analyses and Results

The paired-sample t-test was used to assess training effectiveness using pre-post evaluation, with pre-training evaluation happening immediately before the training, and post-training immediately after the training, which was 45 minutes long. Students

demonstrated significant increases in their ability to apply selfhood and compassion in their online peer support responses, as illustrated in Table 1 and Figure 4 below.

Table 1

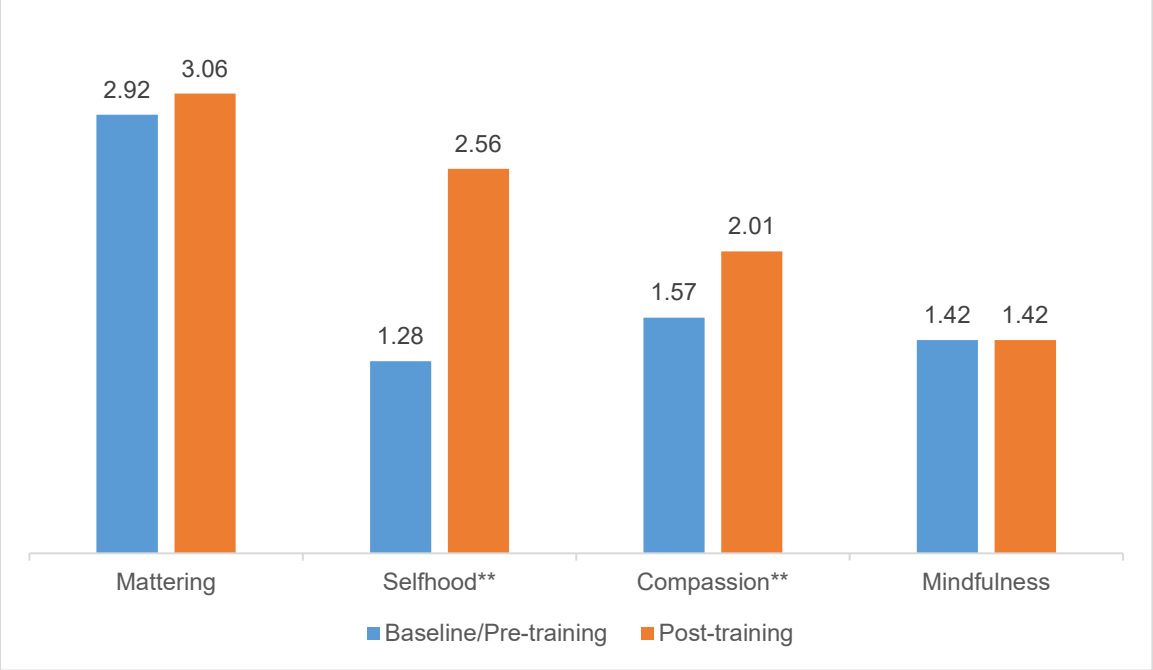
Paired-Difference t-test Results

Pre-test score – Post-test score	Mean Difference	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference		Sig. (2-tailed)
				Lower	Upper	
Mattering	-.13	.87	.11	-.35	.089	
Selfhood	-1.19	.15	.019	-1.22	-1.15	**
Compassion	-.44	.91	.12	-.67	-.21	**
Mindfulness	.0027	.60	.076	-.15	.15	

Note. **p<.001.

Figure 4

Baseline/Pre vs. Post Training Scores on Digital Peer Support Skills on Well-being



Note. All items from all measures were scored on a 4-point scale (1=not at all to 4=very much). **p<.001.

Discussion

Despite half of all mental health conditions occurring in adolescence and the rising concern with mental health issues among adolescents (WHO, 2021a, 2021b), digital peer support interventions for adolescent mental health are still in their infancy (Kaess et al., 2021). Therefore, there is a growing impetus in implementing scalable and sustainable effective digital peer support interventions that are effective for adolescents among researchers, policy makers, and education stakeholders (Odgers & Jensen, 2020). In light of the heightened role of peers during this developmental stage (Huang et al., 2018), engaging with peers on digital platforms is an important coping mechanism for managing emotional distress and soliciting support for one's well-being (Loades et al., 2020). However, there is scant research in understanding effective peer support online for mental well-being among adolescents (i.e., the

technicalities and peer support responses), and the design and implementation of a digital peer support training programme (e.g., Carson & Langer, 2006). To this end, this study trial involves the implementation of a theoretically and empirically grounded training programme on digital peer support for adolescent mental health.

A key strength and innovative aspect of our digital peer support training programme is the translation of the Healthy Minds Framework as the base of our training-based framework for adolescent peer support responses. A theoretically and empirically grounded training programme increases the efficacy of adolescents in providing effective digital peer support, particularly responses that can bolster their peer selfhood and compassion in support of their own and peers' mental well-being. As sense of mattering did not improve significantly, this was likely due to the ceiling effect, in that adolescents have high existing levels of using mattering to support their peers, whereas mindfulness may require more extensive and deliberate practice. Additional strengths of the programme include the involvement of scholars with diverse research expertise, participation by mental health and education stakeholders in co-designing the training programme and implementation strategies, and the use of a high school reference group in piloting the programme. Such an approach increases the feasibility of the training programme in achieving positive implementation and outcomes. Additionally, we applied a relevant implementation framework in the design, implementation, and evaluation of our programme/intervention—the GTO framework.

This study has two primary limitations. First, the implementation of the digital peer support training programme within a specific school can affect the generalisability of the implementation and effectiveness results. However, such a school approach is necessary to ensure consistency in the experience and delivery of the training programme for the participants. Second, we assessed the primary outcomes at pre- and post-training, and this may not sufficiently measure programme effectiveness, especially in determining whether and how participants make sustained efforts to engage in effective peer support on digital platforms.

Conclusion

The digital peer support training trial implements a scientifically driven and multidisciplinary practice to train adolescents in digital peer support skills. This study addresses a critical question about digital peer support intervention: What skills do we train adolescents in providing digital peer support skills? Findings from this training trial chart valuable insights into an evidence-informed programme for training adolescents to be effective peer supporters online and provide evidence for a programme that can be implemented at scale.

Declarations and Acknowledgements

Ethics approval was granted by the Ethics Committee of the National University of Singapore (protocol number: NUS-IRB-2021-761). Informed consent was obtained from all individual participants (and their parents) included in the study. The author declares no competing interests.

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12. Digital Mental Health in Practice: What Have We Learned?

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Abstract

Digital mental health has gained popularity in recent years given its potential to empower people who have difficulty accessing services or have preferences other than in-person interactions, as well as its growing effectiveness. Recognising existing treatment gaps amongst the local youth population, we identified a need for programmes to address and support their help-seeking behaviours for mental health purposes. With its diverse and adaptable modes of delivery, digital tools could serve as a potential solution to support the mental well-being of youths, either independently or through enhancing existing mental health services. SHINE thus attempted to incorporate digital tools in the previous three years to render our mental health services more adolescent friendly. These initiatives included i) using social media to conduct outreach to youths who may need mental health support, and ii) deploying a mental health e-buddy app and various technological tools to provide resources to improve mental health literacy, facilitate self-help, encourage help-seeking, and complement ongoing interventions. Through these efforts, we have gained some insights into considerations and practices that can affect the use of digital approaches from the perspectives of service users, practitioners, and peer helpers. We hope that these insights can guide our future practice to incorporate digital mental health in a more effective, ethical and youth-centric manner.

Introduction

Background

The national Singapore Mental Health Study revealed that younger age was significantly associated with mental disorders (Subramaniam et al., 2019), with one in ten local teenagers suffering from at least one mental health disorder (Wong et al., 2023). Despite their increased vulnerability, current stigma surrounding mental health services may contribute to local young persons' continued hesitancy towards seeking help. In Singapore, 78% of individuals with mental health disorders had a treatment gap of 12 months (Subramanian et al., 2019). The continuous delay in help-seeking has additional impact on young people, given that mental illness can impede emotional well-being and social development (Kutcher & Venn, 2008). There

is thus a need to address the existing treatment gap through promoting help-seeking behaviours, especially amongst the local youth population.

Help-seeking in the mental health context can be defined as “an adaptive coping process that is the attempt to obtain external assistance to deal with a mental health concern” (Rickwood & Thomas, 2012, p. 180). Sources of help-seeking can be categorised into formal help, informal help, and self-help. Formal help suggests receiving support from recognised professionals; informal help is from personal relations; and self-help refers to sourcing resources independently. In recognition of the vulnerability of youths while considering different degrees of readiness in reaching out for help, various ways of help-seeking should be considered in the design of proposed solutions.

The Potential of Digital Mental Health

In recent years, interest and development within the digital mental health space have been growing, with its potential to support mental health and enhance service delivery. Digital mental health can be defined as “the use of digital technologies to support and improve mental health conditions and provide mental health care” (Mohr et al., 2018; Riper et al., 2010, as cited in Mendes-Santos et al., 2022, p. 2). More than 70% for those aged 15 to 24 years are online (UNICEF Office of Research, 2017). The digital space is a familiar platform, where Singaporeans spent an average of 7 hours each day using the internet, with 84.7% of the population actively using social media (We Are Social & Meltwater, 2023). With the highly prevalent use of technology in Singapore, digital technology, in line with existing research, could serve as a solution towards help-seeking and overcoming stigma linked to mental health services (Kaushik et al., 2016).

To improve the mental health of adolescents, services need to accommodate the specific needs and preferences of the population. Given the prevalent use of digital technology amongst locals and its low barrier to entry, the digital mental health space can be analysed based on accessibility, appropriateness, equitability, acceptability, and effectiveness as proposed by the WHO framework of adolescent health services (WHO Department of Maternal, Newborn, Child and Adolescent Health, 2012). The adaptation of the framework to the digital mental health space was as follows:

WHO Framework of Adolescent Health Services	**How it Applied to Digital Mental Health**
Equitable All adolescents are able to obtain health services they need	Technology utilised had to be simple, does not discriminate and considers the local context
Accessible All adolescents are able to obtain services that are provided	Digital mental health presents as a low barrier to entry for youth participation
Appropriate Right services that adolescents need are provided	Potential of the diverse types of digital mental health to address differing needs of adolescents at different stages of their mental health journey

WHO Framework of Adolescent Health Services	**How it Applied to Digital Mental Health**
Acceptable Health services are provided in ways that meet the expectations of adolescent clients	Recognising the self-determination of youths, where digital mental health could promote self-management; Use of technology as youth centric and in line with current trends
Effective The right health services are provided in the right way and make a positive contribution to the health of adolescents	Potential of digital mental health in enhancing existing services

Research has demonstrated that programmes delivered through social media can be acceptable to both youths and adults (Naslund et al., 2017), while a local study revealed that youths utilise technology and digital media as a source of self-therapy and emotion regulation (Wong et al., 2023). This suggests the potential of the digital space for addressing the existing treatment gap in differing ways, by promoting help-seeking behaviour through enhancing formal services and equipping youths with more skills to help themselves.

While recognising the potential of digital tools in support for mental health, findings on its effectiveness have been mixed (Lehtimaki et al., 2021). However, given that digital tools can function as an acceptable and accessible option to promote help-seeking behaviour amongst youths, past studies on its low efficacy should not discount their potential. Instead, more studies need to be conducted to understand the specific opportunities and intentional processes involved in the implementation of digital mental health tools.

Methodology

To better understand the specific ways in which digital tools can support the help-seeking behaviour of youths, two separate studies were conducted. The first study approved by the Agency for Integrated Care's Institutional Review Board, titled "*Understanding Singapore Youths' Mental Health Literacy and Usage of Social Media as a Mental Health Resource,*" aimed to understand how social media supported youths' self-management of their mental health and how unique features of social media platforms guided their use of online mental health resources. The second study approved by National University of Singapore's Institutional Review Board, titled "*Evaluation of the Implementation of a Mental Health App, Myloh, within a Mental Health Service*," examined how a locally developed digital mental health app, Myloh, could enhance current intervention processes between practitioners and youth. Myloh (see https://myloh.co for the app), as a mental health e-buddy app with features such as journaling, mood tracking and mental health chat tracks, is currently utilised as both an outreach and an intervention tool, where a practitioner would follow up with clients who are independently using the app or incorporate the app as part of the intervention plan. Collectively, these two studies helped to understand how different modalities of digital tools could support youth mental health and adolescent help-seeking processes, either through formal, informal, or self-help methods.

Methodology of Study I

To investigate youths' use of social media and its implications for mental health, a survey was conducted amongst 397 youths aged 14 to 21 between October 2022 and November 2023. The implication on mental health was understood in two ways, where youths could have used social media in support of their mental health, or to increase their mental health literacy to enhance their own knowledge in support of themselves or others around them. Survey questions included a self-designed tool related to participants' usage of social media for supporting youth mental health and increasing youth mental health literacy, and a formally developed scale—the Mental Health Literacy Questionnaire – Young Adults Form (MHLq; Dias et al., 2018)—to measure the overall mental health literacy of youths.

Methodology of Study II

To understand the impact of the use of Myloh in practice, semi-structured interviews were conducted with 11 practitioners. They were asked a series of questions designed according to the REACH framework, which sought to explore how they used Myloh to support aspects of Relationship building, Expectancy, Attendance, Clarity, and Homework during the process of their intervention with clients (Becker et al., 2017). The adequacy of Myloh in supporting youths and practitioners was also explored, where the study sought to understand how Myloh could play a role in the help-seeking and intervention process.

Findings

The social media study concluded in 2023, while the Myloh study is still in progress. Preliminary findings based on the interviews with practitioners will be presented.

Findings of Study I

Sociodemographic variations in the use of social media to enhance mental health literacy. Most participants (70.1%) reported using social media platforms to increase their mental health literacy. As summarised in Table 1, many socio-demographic variables were found to have significant, albeit weak, correlations with the use of social media platforms to enhance mental health literacy. Findings suggest that as youths grow older, they increasingly relied on social media platforms as a source of mental health information and resources. Similarly, variations in the utilisation of social media were observed between sexes, implying that females were more likely than males to use social media for accessing mental health-related information and resources.

The study also revealed that participants with higher levels of education were more inclined to utilise social media platforms to access mental health resources and information. The findings also indicated that students enrolled in the Express stream were more likely to utilise social media for mental health literacy purposes than in Normal Academic or Normal Technical streams.

Table 1

Correlations (Pearson's r) between Demographics and Using Social Media to Increase Mental Health Literacy

	Age	Sex	Ethnicity	Current Education Level	Stream	ST	Increase MHL
Age	-						
Sex	0.169***	-					
Ethnicity	0.021	0.027	-				
Current Education Level	0.789***	0.281***	-0.025	-			
Stream	0.008	0.228**	0.027	-	-		
ST	0.092	0.049	-0.045	0.168**	0.432***	-	0.18***
Increase MHL	0.155**	0.26***	-0.032	0.227***	0.212**	0.18***	-

Notes. ST refers to the total MHLq scale score, Increase MHL refers to whether youths use social media to increase mental health literacy. ***p<.001, **p<.01, *p<.05.

Social media's support for participants' self-management of their mental health. Approximately half (46.2%) of participants reported using social media to support their mental health by accessing social media sites for mental health resources and information. Table 2 illustrates that participants aged 15 had the highest proportion of youths who used social media for their mental health support. There was also a statistically significant, weak negative correlation between age and the use of social media for mental health support (r = -0.209, p=<0.001). As age increased, the tendency to use social media for mental health support decreased.

Table 2

Use of Social Media to Support Mental Health by Age

Age	Yes	No	Total
14	19	37	56
	33.9%	66.1%	
15	30	37	67
	44.8%	55.2%	
16	18	20	38
	47.4%	52.6%	
17	25	24	49
	51.0%	49.0%	
18	24	25	49
	49.0%	51.0%	
19	25	26	51
	49.0%	51.0%	
20	20	22	42
	47.6%	52.4%	
21	19	19	38
	50.0%	50.0%	
Total	180	210	390
	46.2%	53.8%	

Note. Number of observations are shown, while row percentages are in parentheses.

Table 3 shows how often participants used social media platforms to support their mental health. ‘Multiple times per week’ (18.6%) was the most common response, followed by ‘Irregularly’ (18.0%) and ‘Multiple times per day’ (15.8%). Cumulatively, 45.9% of participants used social media to support their mental health at least once a week.

Table 3

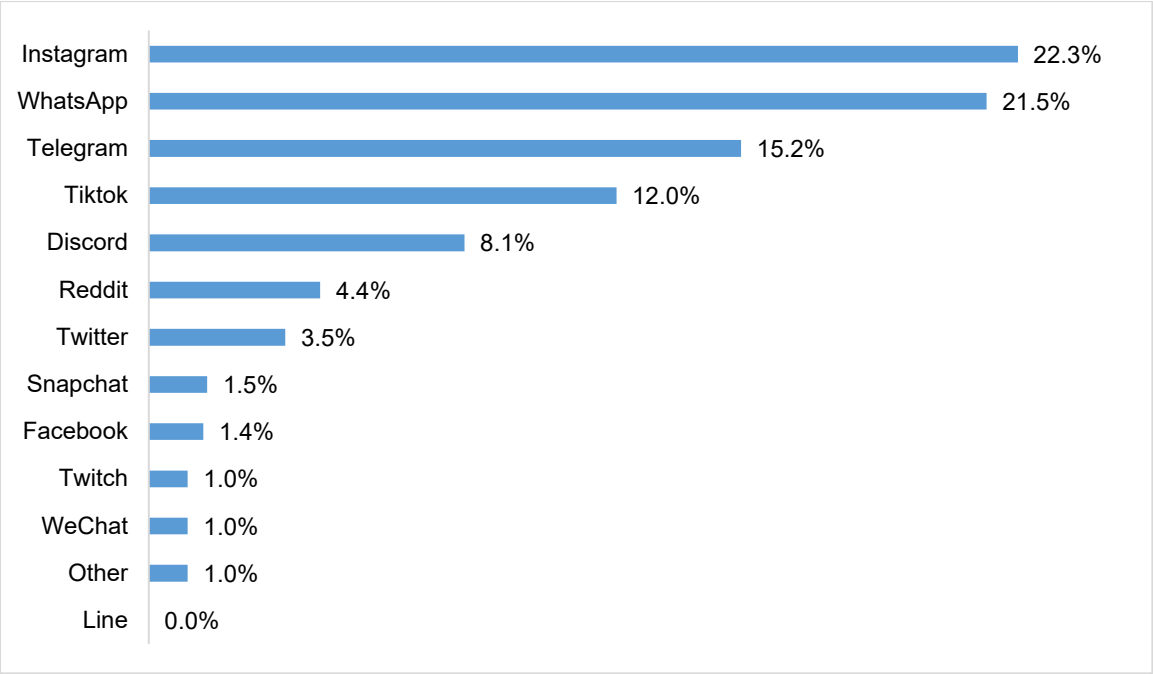
Frequency of Use of Social Media to Support Mental Health

Frequency	Counts	Percentage
Multiple times per day	29	15.8%
Once a day	13	7.1%
Multiple times per week	34	18.6%
Once a week	8	4.4%
Multiple times per months	18	9.8%
Once a month	7	3.8%
Less often than a month	6	3.3%
Irregularly	33	18.0%
More often at first, less often now	7	3.8%
Only when needed	28	15.3%

Figure 1 shows the percentage breakdown of platforms used by participants to connect with friends and others online, which indicates that the top three most used platforms were Instagram (22.3%), WhatsApp (21.5%), and Telegram (15.2%).

Figure 1

Percentage Breakdown of Social Media Platforms Used to Connect with Friends and Others Online



Participants' motivations behind selecting social media platforms for mental health purposes. Figure 2 presents an overview of the critical factors that participants considered when selecting a social media platform to aid their mental health. The primary factors identified were 'input from others who have experienced the same situation' (20.4%), 'having discussions with others who have experienced the same situation' (18.1%), and 'input from professionals' (15.5%).

However, the relative importance of these factors exhibited slight variations between participants who utilised social media for mental health support and those who did not. For participants who used social media for mental health support, their top three factors were 'input from others who have experienced the same situation' (22.3%), 'having discussions with others who have experienced the same situation' (19.5%), and 'having discussions with peers' (13.7%).

Conversely, among those who did not utilise social media for mental health support, their top three factors were 'input from others who have experienced the same situation' (18.8%), 'anonymity' (18.0%), and 'having discussions with others who have experienced the same situation' (17.1%).

Across all participants, it could thus be noted that there is a value placed on connecting with other individuals who have experienced the same situation, hoping to gather input from them or have discussions with them in support of mental health. Anonymity, on the other hand, played a more significant role in those who did not utilise social media for their mental health support as opposed to those who presently did, perhaps indicating concerns over anonymity in their usage of social media.

Figure 2

Key Factors in Selecting a Social Media Platform to Support Mental Health

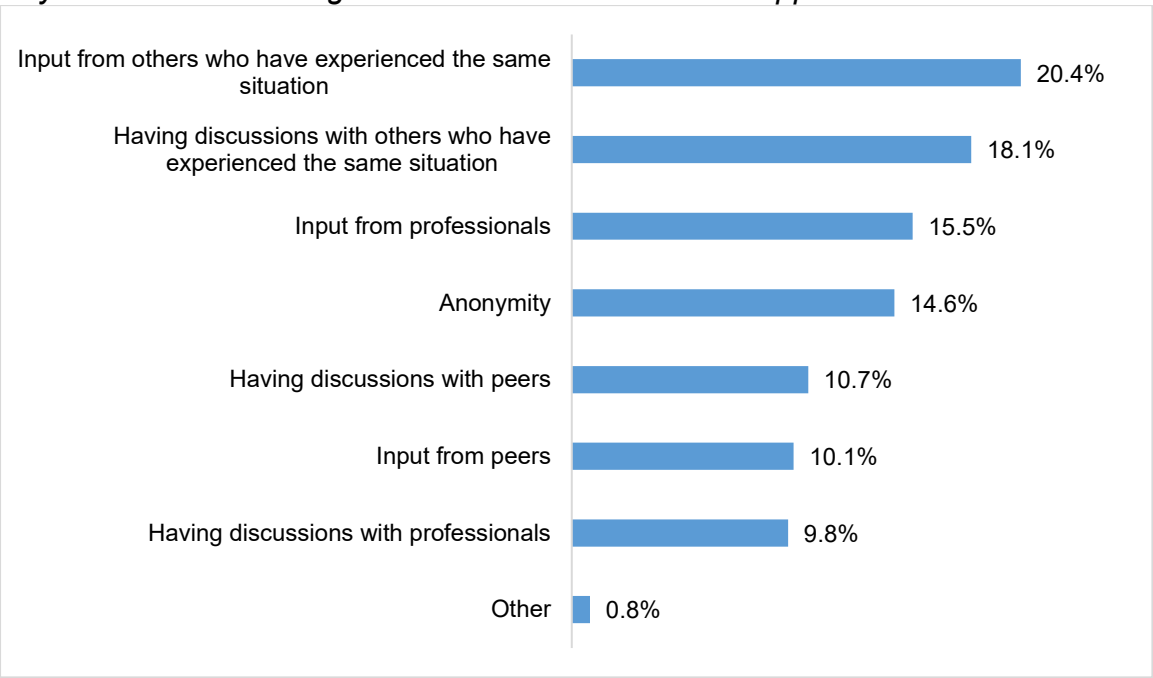


Figure 3

Key Factors in Selecting a Social Media Platform to Increase Mental Health Literacy

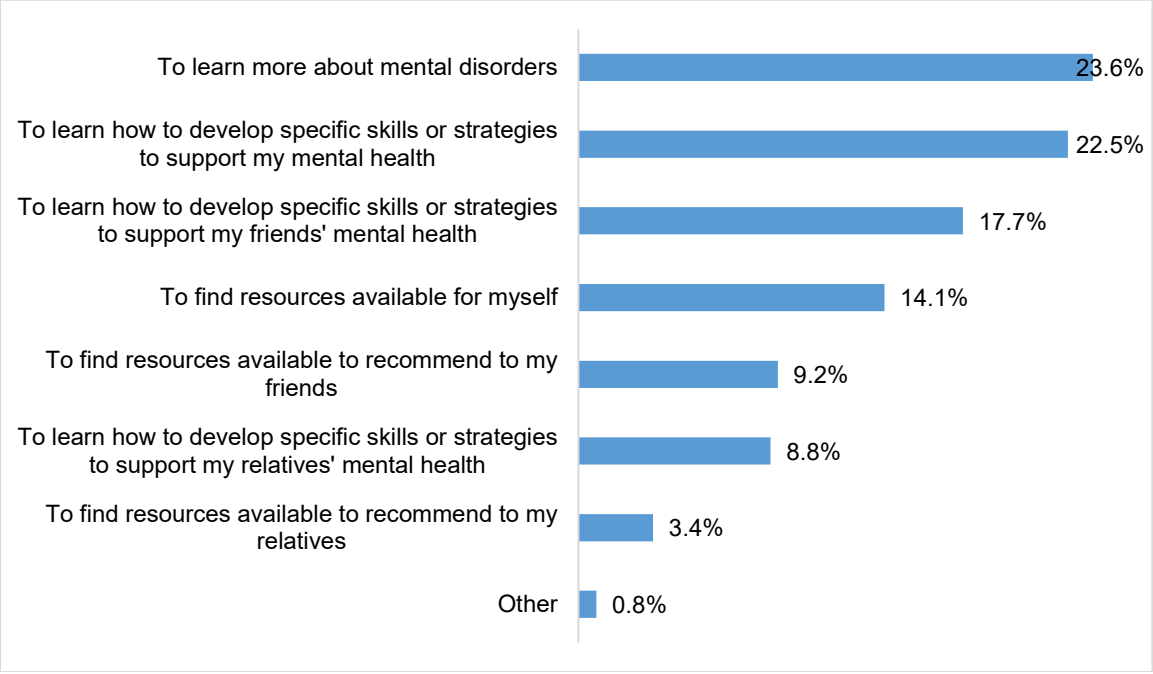


Figure 3 displays the essential factors participants considered when choosing a social media platform to enhance their mental health literacy. The primary factors identified were ‘to learn more about mental disorders’ (23.6%), ‘to develop specific skills or strategies to support their mental health’ (22.5%), and ‘to develop specific skills or strategies to support their friend’s mental health’ (17.7%). Notably, these top

three factors remained consistent regardless of whether participants used social media to enhance mental health literacy.

Preliminary findings of Study II

Preliminary findings based on sharing and reflection by practitioners revealed that Myloh had its impact in three different areas, namely on (1) the intervention process, (2) service users *per se* and (3) changing practitioners' perceptions of their role in supporting clients.

Myloh in supporting the intervention process. Practitioners reflected on the use of Myloh to support clients at different stages of intervention. Clients who were waiting for their first screening session could explore psychoeducation tools to support themselves. For clients already receiving support, Myloh could be used to strengthen skills taught in sessions.

Myloh facilitated relationship building between practitioners and clients. It enabled initial rapport building through elements that provided points for conversation. As both clients and practitioners were exploring different functions of the app together, they were able to converse on that shared experience.

Myloh also added clarity to the therapeutic sessions. The journaling function enabled clients to become more self-aware, as they were able to refer to documentation of their emotions and events. This helped clients to better articulate their thoughts, which aided practitioners to be more informed and recognise common thought patterns. This led to an increased awareness of client struggles, which facilitated a more targeted intervention.

Myloh in supporting service users. Clients learnt new coping strategies via the app and practitioners reported that clients would turn to Myloh during times of distress to regulate their emotions. This buttressed the self-reliance of clients in between sessions, when Myloh could act as an alternative tool that youths could use.

Recognising the differing levels of readiness in seeking formal help among youths, Myloh also served as an outreach tool to facilitate the self-management of their mental health. Through content incorporated in the app, Myloh served to increase accessibility of information. Clients had a better sense of their emotional state and what they might be going through, prompting them to seek additional help when necessary.

Notably, Myloh supported a change in perception towards help-seeking, where the content and functions within the app helped to normalise mental health, by making support more accessible and fun. Youths realised that help-seeking need not be scary, and mental health service could be delivered in a youth-friendly manner.

Myloh in changing practitioner's perceptions. The availability of Myloh as a tool for clients to turn to provided practitioners with a sense of reassurance that clients had alternative resources for support. This injected confidence in practitioners that clients were able to manage their own mental health independently. Practitioners

came to recognise the versatility of therapeutic work, understanding that there were alternative tools which shifted reliance away from them.

Discussion and Practice Implications

The findings from both studies suggest that the use of digital mental health has the potential to support youth mental health by increasing mental health literacy, enhancing existing interventions, and supporting youth in the self-management of their mental health. Nonetheless, the findings also indicate that the introduction of digital mental health needs to be intentional, and processes have to be carefully curated to enhance the efficacy of digital tools.

Regarding the use of social media, it can be observed that youths prefer content focused on providing information about mental health disorders, tips for self-help, and information on how to support their peers. Content should thus be curated according to these topics to meet their curiosity. In addition, diversifying the content delivery platforms, such as utilising Instagram and TikTok, can expand reach. In recognising that using these platforms involves video content curation, which could be a resource-intensive process, agencies could consider forming partnerships with existing youth-centric channels and influencers with the reach and capabilities. Nonetheless, it should be noted that influencers that tend to be trendy amongst youths may not necessarily have personas that are palatable to social service agencies or the causes they are promoting.

The use of tools such as Myloh aimed to build the self-reliance of youths in the management of their mental health, incorporating the development of coping and grounding skills. Even though Myloh can support youths, the independent use of such applications should be cautiously applied, with the continued need for the involvement of trained professionals to enhance the effectiveness of these tools. This is reflected in the way in which practitioners have intentionally incorporated Myloh into the intervention process, where they identified specific needs of youths and aligned these needs to the functions of the app that could address these needs. Practitioners were also sensitive to the receptiveness of clients to using Myloh and did not insist on its usage with resistant clients, as this could be crucial to youths' engagement and trust towards the use of digital mental health. In addition, practitioners cautioned against the use of Myloh during emergencies, emphasising that the human element is likely still required. These caveats highlight that some digital tools may be better used to complement existing interventions than be utilised independently.

The two studies showed that digital mental health has the potential to support youths in different ways. However, the impact of different mental health tools would differ across socio-demographic profiles of youths, as their preferences for digital tool utilisation varied by socio-demographic characteristics. Thus, it is important to be attentive to the specific target population and recognise that youths have differing needs, capabilities, and preferences. Practitioners should pay attention and be open to exploring the right tools to meet their clients' needs, preventing cynicism or distrust of youths towards the use of digital tools.

In addition, the digitalisation of mental health services should involve the support of mental health practitioners, as the perception of practitioners was crucial in the implementation and incorporation of technology into service. Past research has suggested that positive experiences of digital health have been connected to practitioners' digital literacy and belief in the benefit of digital health on patients (Odendaal et al., 2020; Ross et al., 2016). This indicates the need to ensure that practitioners themselves are equipped with the right training to enhance their competencies in utilising digital tools before they are introduced to clients, as competency supports a positive outlook towards using technology in practice. It is crucial for practitioners to develop the right mindset and competencies, recognising its meaning and potential not just for youths, but also to support their work as professionals.

While the findings from both studies have generally highlighted that youths are receptive to improving their mental health with digital technology, it would be prudent to be mindful of the negative effects of digital technology and develop strategies to buffer against potential risks. Given that the digital mental health space is continuously developing, regulations on offering mental health services need to be studied and developed. Practitioners should impart mitigating strategies to clients even as digital tools are introduced. One strategy could be to psycho-educate youths about the appropriate use of social media for their well-being, which may include providing them with information and skills to discern credible, effective, and safe mental health support from questionable ones in the social media space.

Conclusion

Leveraging the digital mental health space can facilitate the enhancement of existing services and the delivery of alternative services that are acceptable by and accessible to youths. Concurrently, it can serve to support youths who may not be ready to seek professional help, potentially providing interim support and changing their perspective towards formal help-seeking. Thus, the digital space allows for the enhancement of existing mental health services, increasing its outreach to the number of youths, while augmenting the way in which services can be provided to cater to their diverse needs and levels of readiness. The health and social service sectors should thus endeavour to tap on its potential to meet existing service gaps and enhance the help-seeking behaviour of youths in different ways. As the tools present within the repertoire of the digital mental space is vast and extensive, each tool should be applied to clients' corresponding specific need and be carefully implemented. Notwithstanding the recognised threats of the digital space, through careful implementation and support for practitioners as they adapt to the change in service delivery, there is hope that digital technology can elevate the efficacy of services to improve the mental well-being of youths.

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PANEL 3

Downstream Intervention: Innovative Approaches in Addressing Youth Mental Health

13. Remarks by Panel 3 Moderator

Hana Alhadad

Addressing mental health in children and young people requires innovative and comprehensive approaches that consider their unique needs and circumstances. This section includes three chapters that explore such approaches through three different research projects involving children and young people. Through these projects, the researchers aim to combat stigma, support creative therapy interventions, and address the challenges faced by hidden youth, all while centring the lived experiences of the participants.

The first chapter looks into the development and evaluation of *Broken Crayons Still Colour*, a series of psycho-education workshops that were co-produced and co-facilitated with volunteers of the project. The workshops were designed to address the issue of stigma against people with mental health issues where lived experiences of the participants were centred and incorporated into the design of the project.

The second chapter explores the efficacy of arts-based therapy interventions for children in Singapore, and how the context of therapy required to support children is strongly impacted by family systems and the space where support is given. The study suggests that complex intervention required for children and families may be provided in multiple spaces and settings, by a multidisciplinary team that includes professional art-based therapists.

The third chapter delves into *hikikomori*, or hidden youth, who are youth who have isolated themselves in their rooms or their homes for a period of at least 6 months. This chapter discusses the first specialised intervention for hidden youth in Singapore, the Hidden Youth Intervention Programme (HYIP), focusing on how the team uses a collaborative process of practice research and evaluation, to inform the development and implementation of the intervention model.

Centring Lived Experiences

Throughout these chapters, a common theme emerges – the emphasis on the lived experiences of participants enabling a deeper understanding of the challenges they face and the support they require. By centring their experiences, the researchers are able to develop interventions that are more attuned to the specific needs and circumstances of the participants. This approach not only enhances the effectiveness of the interventions but also fosters a sense of empowerment and validation for the children and young people involved.

Importance of Inclusive Research

Inclusive research with children and young people is essential to truly understand and address their needs. It allows for the exploration of diverse perspectives and experiences, and provides a more nuanced understanding of the mental health challenges faced by children and young people. Their unique circumstances and needs can be more accurately identified and understood with tailored interventions

that are culturally sensitive, age-appropriate, and relevant to the specific challenges they face. Importantly, the ethical framework ensures that research is conducted in a manner that respects the rights and well-being of the participants, fostering a culture of ethical research practices within the field of child and youth mental health.

Need for Equity-Centred, Trauma-Informed Research

These studies highlight the need for equity-centred, trauma-informed research, reflecting a growing recognition of the impact of trauma on mental health, especially within vulnerable communities. By acknowledging the potential trauma experienced by children and young people, researchers can develop interventions that are sensitive to their past experiences and focus on promoting healing and resilience. This trauma-informed approach aligns with best practices in mental health research and intervention, emphasising the importance of creating safe and supportive environments for vulnerable populations.

This panel urges innovative and thoughtful approaches to research that honour the dignity and autonomy of its participants, centring consent and balancing the power of knowledge generation in the communities we work with. It highlights the ethical responsibilities of researchers when working with children and young people.

The insights from these research projects underscore the significance of inclusive, trauma-informed, equitable, and ethical approaches to addressing mental health in children and young people. By incorporating the lived experiences of participants and embracing multidisciplinary collaboration, researchers can develop interventions that truly meet the diverse and nuanced needs of young populations.

14. *Broken Crayons Still Colour*: Development and Evaluation of a Psychoeducation Workshop Series

Florence Lee

Abstract

Very often, the voice of young people living with mental health conditions is overlooked. Co-production is a relatively new approach to mental health services that creates opportunities for patients, caregivers, and mental health professionals to work collaboratively in the design and delivery of mental health services. Building upon the principles of co-production, School of Ability & Recovery aimed to tackle the issue of stigma against mental illness in the community by having different stakeholders develop and deliver psychoeducation workshops pertaining to recovery from mental health issues. In this paper, the development and evaluation of a co-produced workshop series, *Broken Crayons Still Colour*, will be discussed. The readers can expect to learn how to build a psychologically safe space for youths and their family members to have heartfelt conversations about recovery from a first episode psychosis. An outcome evaluation of *Broken Crayons Still Colour*, with its design and results, will be presented. By doing so, SOAR hopes that young people in recovery from psychosis can regain their agency and have their voice amplified through co-production.

Background

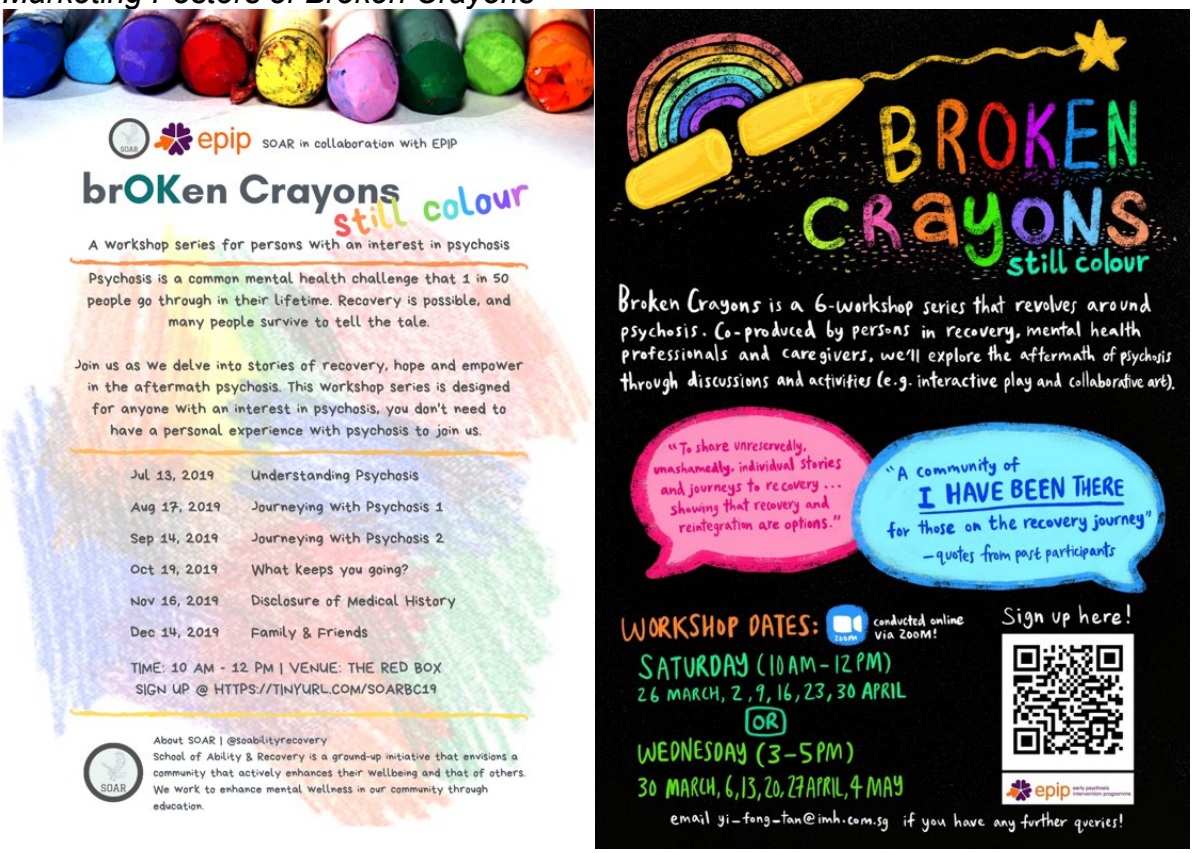
Youth mental health is a pertinent issue because 62.5% of people living with diagnoses of any mental health conditions had their onset by age of 25 years old (Solmi et al., 2022). The peak of onset is 14.5 years based on data from a meta-analysis by Solmi and colleagues (2022). This means mental health conditions struck most people during adolescence and young adulthood, which are crucial periods of biopsychosocial development.

Broken Crayons Still Colour (*Broken Crayons*) was a project born out of a collaboration between the Early Psychosis Intervention Programme (EPIP) (Institute of Mental Health (IMH), 2024) and the School of Ability & Recovery (SOAR) (SOAR, 2024). It was a six-part workshop series that focused on the biopsychosocial aspects of recovery from psychotic disorders (see Figure 1). While the workshop series was targeted at youth clients receiving services from EPIP, it was made open to the EPIP clients' families as well as members of public that are keen to learn more about

recovery from psychotic disorders. A guiding principle behind the decision to have a mixed group of participants was an attempt to normalise conversations around mental health issues in the community setting.

Figure 1

Marketing Posters of Broken Crayons



Note. The designs of the posters were co-created with volunteers.

Building upon the principles of co-production (Slay & Stephens, 2013), *Broken Crayons* was co-created and co-produced by a team of volunteers made up of persons in recovery, their caregivers, and mental health professionals from July to December 2019. The co-production approach used to develop *Broken Crayons* was inspired by the work of Recovery Colleges in the UK (Perkins et al., 2012; Lee et al., 2022).

While co-production was easy to conceptualise, it is difficult to operationalise. As such, we co-created a co-production framework in 2021 to outline how persons in recovery, caregivers, and mental health professionals could be roped into the co-production process (Lee et al., 2022). Briefly, there were five components in this framework (see Figure 2).

We first assembled a team of persons in recovery, caregivers, and mental health professionals. A volunteers' onboarding for the team would be done to set the group culture and flat hierarchical structure. We would then move on to discuss and develop ideas for our workshops. This process usually took place over several focus groups with a lead facilitator eliciting ideas from the group while extracting common themes and contents for the workshops. In the fourth step, the team would

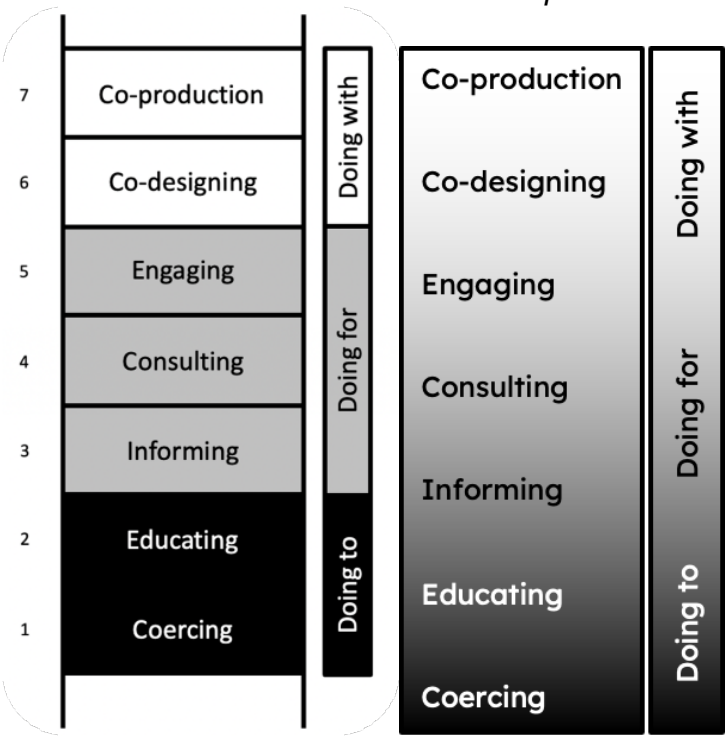
implement the workshops by facilitating the sessions. The workshops were broken up into different segments with different facilitators taking their respective segments of the workshop. Even though evaluation of the workshops was placed as the fifth step, evaluation of the workshops began at the conceptualisation of the workshops and was an ongoing processs.

Figure 2
A Cyclical Co-production Framework

Note. This co-production framework was portrayed in a circular model, as co-production is a stepwise, iterative process.

Drawing on Sherry Arnstein's Ladder of Participation (Arnstein, 1969), there are multiple ways in which mental health professionals could approach the design and delivery of services. Approaches ranged from coercion (a form of "doing to") to consultation (a form of "doing for") to co-production (a form of "doing with") (see Figure 3). There is a time and place to invoke the Mental Health Care and Treatment Act (Singapore Statutes Online, 2024) in some instances as a form of beneficence for patients in an acute psychotic episode—medical professionals have the ethical duty to act in the best interests of their patients. There is also a place and time for a collaborative approach of co-production, where mental health professionals and persons in recovery from psychosis could work side by side to design and deliver mental health services, with the aim of helping persons in recovery reintegrate into their communities (Lee et al., 2021). As mental health professionals, we need to be discerning about tuning the level of involvement from our beneficiaries versus guidance from the professionals.

Figure 3
A Modified Arnstein's Ladder of Participation



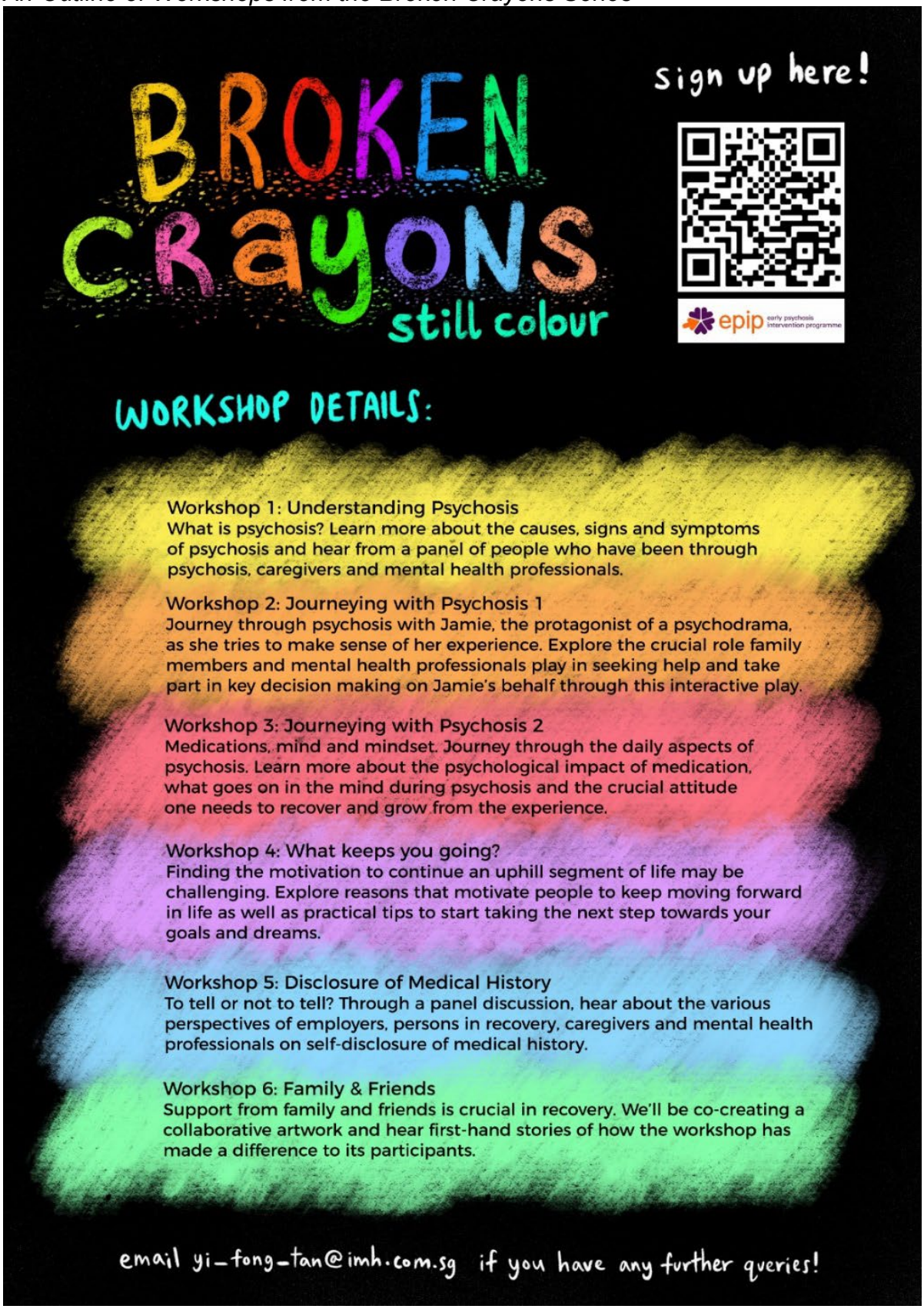
Note. In practice, Arnstein's Ladder of Participation could be understood more as a continuum than a ladder with discrete steps.

There were six workshops in the *Broken Crayons* series. *Broken Crayons* focused on the biopsychosocial aspects of recovery from psychotic disorders. Refer to Figure 4 for an outline of every workshop in the *Broken Crayons* series.

An important aspect of the *Broken Crayons* workshops is the emphasis on psychological safety during the onboarding of participants before and during the workshops. We are very intentional about setting the tone for holding a safe space for our participants during the sessions. During every first session of the *Broken Crayons* workshop series, a community agreement on the ground rules to uphold would be discussed before we dived into the workshops. Participants were invited to come up with some basic rules that members of the group would uphold as we journeyed as a group in the *Broken Crayons* workshops. Usually, the rules revolved around keeping confidentiality of participants' stories, and having mutual regard and respect for one another. We believe that this was an important aspect of the workshops as it held space for participants to process their thoughts and emotions in sessions without fear of having their stories repeated elsewhere to others, or of being disregarded or disrespected for their unique lived experiences of mental health issues.

Figure 4

An Outline of Workshops from the Broken Crayons Series



Broken Crayons is an example of how professionals, caregivers, and persons in recovery can work collaboratively to design and deliver a mental health intervention in the community. The aim of this chapter is to showcase 1) the work of *Broken Crayons* and 2) the evaluation of *Broken Crayons*. Its purpose is to introduce to practitioners of social services in Singapore different ways of engaging their service beneficiaries in their unique contexts in empowering and meaningful ways.

Methodology

An outcome evaluation of Broken Crayons was conducted from November 2021 to March 2023. This evaluation was supported by a grant awarded by the National Healthcare Group and supported by the Research Division in IMH.

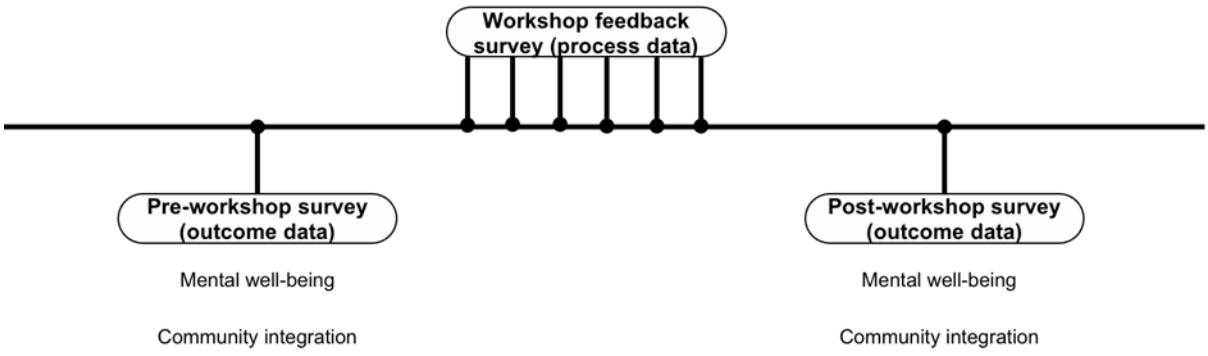
Participants were recruited from EPIP and word-of-mouth to join re-runs of the *Broken Crayons* workshops. A total of five re-runs were made from March to November 2022 to recruit 153 unique participants. Out of the 153 unique participants, 47 respondents completed our pre-post workshop survey. The evaluation project was focused on examining outcomes of attending a co-produced workshop series, *Broken Crayons*.

Questionnaires included in our surveys were: the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) (Stewart-Brown et al., 2011) and the Community Integration Measure (CIM) (McColl et al., 2001). WEMWBS was chosen because it was used as an outcome measurement in another study that evaluated the outcomes of co-produced workshops from the UK (Meddings et al., 2015). CIM was selected because we theorised that participating in the *Broken Crayons* workshop series would enhance the sense of community integration in the participants. CIM was chosen in consultation with the volunteers who co-produced the workshops.

Data was collected within a two-week timeframe before the start of the workshop series and in another two-week timeframe after the workshop series concluded (Figure 5). The timeline between the pre- and post-workshop is six weeks. Descriptive statistics were generated from the pre-post survey data available. Besides the outcome evaluation data, we also collected some process evaluation data to track the participants' experience of our workshops.

Figure 5

A Timeline Depicting the Pre-post Survey and Feedback Data Collected



Note. The timeframe between the pre- and post-workshop data collection (n=47) was six weeks apart. Workshop feedback (n=138) was collected separately at the end of every workshop.

More details of the development and outcome evaluation of *Broken Crayons* can be found in a protocol paper published by Lee et al. (2022).

Main Findings and Insights

More than 95% of Participants Agreed that the Learning Environment was a Safe Place to Share

Based on data from our process evaluation survey, we observed that more than 95% of respondents agreed that the learning environment was a safe space to share their lived experiences. This data was collected from across five runs of the workshop series with 153 unique participants. The average response rate for the process evaluation survey was 48.5%. The process and outcome evaluations data were collected from two different surveys.

Participants Felt Safe in the Workshops

Even though the process data could have a higher response rate to give us more confidence about the representation of the data collected, we were relieved to know that about half of our participants felt safe enough in the sessions to agree or strongly agree about the safe space that the group held for them during the workshops.

A curiosity we have about the data is the non-responding participants of the workshop. Were they feeling the same way as the responding participants, neutral or negative about the state of psychological safety in the workshops? As agency and choice are focal points of the workshops, we did not press for all participants to fill in the post-workshop process feedback surveys. The ethical tension of being both facilitators and evaluators of these workshops will be discussed in the next section as we reflect on insights gleaned from running and evaluating the *Broken Crayons* workshops.

There was No Significant Difference between the Average Scores of WEMWBS and CIM Pre and Post Workshops

Out of the 153 participants who attended our workshops, we had 47 respondents who completed our pre-post outcomes surveys. The outcomes data are compiled in Table 1 below.

Table 1

Pre-post survey data of WEMWBS and CIM

	Pre-workshop average	Post-workshop average	P-value
Mental Well-being	47.8	49.4	n.s.
Community Integration	40.2	40.0	n.s.

Notes. A paired t-test was performed to obtain the P-value comparing the pre- and post-workshop data (n=47).

Based on the preliminary analysis of data from 47 participants, the data seem to suggest that there was no significant change to the mental well-being and sense of community integration of the participants pre- and post-workshop.

Attending Broken Crayons Does No Harm to Participants

Our data seemed to suggest that attending *Broken Crayons* does no harm to participants. At first glance, the data seemed underwhelming. Since the conception of *Broken Crayons* in 2019, a goal for the workshop developers was to understand the outcomes of attending this co-produced workshop series on the participants. To see no significant change in the outcomes data in this project was disappointing. However, we realised that the constructs we have chosen to evaluate the workshops are complex aspects of one's life: mental well-being and sense of community integration. There were many factors that influenced the well-being of one's mind in each time frame and their sense of community integration. The pre-post surveys were administered only six weeks apart, with 12 hours of group intervention time. We wondered if the outcomes and impact of attending *Broken Crayons* could be assessed within the limited timeframe, or whether a longer timeframe is necessary for the fortification and solidification of the learning and insights gleaned from the psychoeducational group work.

Discussion and Implications to Social Services

The Evaluation of Broken Crayons was One of the First Efforts to Test the Value of Co-production in the Singaporean Context

To the best of our knowledge, this project is one of the first of its kind in Singapore, where there is a collaboration between professionals, caregivers, and persons in recovery in the design, delivery, and evaluation of a mental health intervention. The evaluation of *Broken Crayons* is an important step in the peer recovery moment as it gains traction in Singapore (Lee et al., 2019). This effort signified a small but pivotal shift in the way mental health services could be designed, delivered, and evaluated in the local mental health context. While we aspired to have co-production imbued into every step of the co-production framework we co-created with the volunteers, we could only consult our volunteers on matters of evaluation due to a gap in specialised knowledge and skills in research. Moving forward, we hope to have research capacity sessions included in our volunteer onboarding to close the knowledge gap in our volunteers to reduce the barrier and have them co-produce the evaluation of our workshops.

Given the historical disenfranchisement and disempowerment of persons in recovery within the field of psychiatry (Lee et al., 2019), the work of *Broken Crayons* marked the initial steps towards a more meaningful and non-tokenistic involvement of persons in recovery to come within the mental health space in Singapore. The efforts put into the evaluation of *Broken Crayons* showed that co-production is feasible in the local context. The need for a voice and agency in one's recovery journey from mental health issues is transnational and transcultural. With that being said, co-production could be approached in a culturally sensitive manner that is befitting to its unique cultural social context. Co-production is a moral imperative to return agency

to youths in recovery from mental health issues (Lee et al., 2021). Tuning the level of involvement from participants and guidance from professionals require discernment.

The Tension of Being both Facilitator and Evaluator of the Workshops

The experience of re-running *Broken Crayons* for its outcome evaluation has been a rewarding but challenging experience. As the project progressed, we struggled with the tension of being both workshop facilitators and evaluators. From a workshop facilitator's perspective, getting the workshop to members of the community was a priority. But from the workshop evaluation perspective, getting participants to respond to the surveys was a priority. A conflict in priorities happens when participants agree to join the workshops but decline to respond to the surveys—do we still allow their attendance in the workshops? This dilemma shadowed the team throughout the 22-month project. Navigating this tension was challenging. In the end, as the project lead, I decided that having as many participants attend the workshops as possible was more important than collecting the process and outcomes data from them. This decision led to a lower response rate in the process and outcome evaluation survey responses. With the benefit of hindsight, making it known upfront that process and outcome evaluation data will be collected anonymously from all participants could potentially help with the situation at hand. In addition, collaborating with an independent evaluation team could also alleviate the tension in the facilitator-evaluator dilemma, as the conflicting interests and priorities may be better managed.

Qualitative Data is Required to Understand the Process and Impact of Co-production on its Participants

In the first phase of the evaluation of *Broken Crayons*, we focused on the quantitative data collected in the form of pre-post workshop survey. We noted the limitations of capturing outcomes using purely quantitative data as the latter may not be sensitive enough to capture the outcomes of attending co-produced workshops on the participants. Co-production is a process-focused approach to mental health interventions that may not be as amenable to conventional ways of evaluating manualised psychoeducation workshops. In the second phase of the evaluation of *Broken Crayons*, multiple focus group discussions were conducted at the end of the re-runs to gather feedback and perspectives from its participants. To this end, the focus group discussions are completed, and data analysis is underway. We look forward to unpacking the qualitative data from the respondents to further examine the outcomes of attending *Broken Crayons* on some of our participants.

Conclusion

Co-production is an approach to the design and delivery of mental health services that engaged persons in recovery, their caregivers, and mental health professionals in a way that is meaningful and non-hierarchical. As mental health professionals, we need to be discerning about tuning the level of involvement from our beneficiaries versus guidance from the professionals. Most participants felt safe to share about their lived experiences during the *Broken Crayons* workshops. Participating in *Broken Crayons* appears to have caused no harm to our participants. The evaluation of *Broken Crayons* is a first project of its kind in Singapore. It was challenging navigating the differing priorities of being a workshop facilitator and evaluator.

Qualitative data could shed more light on the impact of *Broken Crayons* on its participants in future research.

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15. Expressive Arts Therapy to Support Mental Health of Children and Youth in Singapore

Daphna Arbell Kehila

Abstract

This chapter presents the strengths and challenges of art-based therapy programmes as an intervention offered in schools and social service agencies in Singapore, to support the mental health of children and youth. The author reviewed data, such as needs assessments and pre/post-programme questionnaires, collected between January 2021 and July 2023 from 48 art therapy programmes offered by The Red Pencil Singapore in collaboration with 31 partner organisations. In addition, the author conducted six interviews with art therapists working with children and youth.

The data analysis suggests the significant role that art therapy has in supporting children and youth development and mental health. The art therapy's holistic, strength-based approach recognises non-verbal communication and sensory aspects of development, complementing other forms of educational, counselling, and support programmes. This study recommends clarifying the criteria for creating a safe space and ethical practices when developing and implementing art-based programmes in schools, community spaces, and homes, guided by professional art therapists, as part of the social services and healthcare systems in Singapore. to promote positive mental health.

Background

Art therapies (e.g., music therapy, art therapy, drama therapy, dance movement therapy, etc) are an "integrated mental health and human services profession" (American Art Therapy Association, 2017). Arts therapies are an established form of psychotherapy, delivered by trained art therapists (also known as art psychotherapists). It is a process that involves the encouragement of free self-expression through various art modalities, used as a remedial or diagnostic activity (Lev-Wiesel et al., 2013).

> Art therapy uses art media, images, and the creative process, and respects patient/client responses to the created products as reflections of development, abilities, personality, interests, concerns, and conflicts. It is a therapeutic

> means of reconciling emotional conflicts, fostering self-awareness, developing social skills, managing behaviour, solving problems, reducing anxiety, aiding reality orientation, and increasing self-esteem (Malchiodi, 2005, p. 2).

Research studies indicate that art therapy interventions have clinically significant effects on life functioning, reducing symptoms of trauma, anxiety, and stress, improving resilience, emotional literacy, and behavioural and social difficulties (Bazargan & Pakdaman, 2016; Cohen-Yatziv & Regev, 2019; Desmond et al., 2015; Kõiv & Kaudne, 2015; Moula et al., 2020; Slayton et al., 2010). Art therapy provides opportunities for children to experience and develop a range of abilities and skills through engaging various materials and creative processes, and integrating sensory, motoric, emotional and cognitive aspects of their development (Deboys et al., 2017; Malchiodi et al., 2003; McDonald et al., 2019; Waller, 2006).

Waller (2006) argues that “the aim of art therapy is to facilitate positive change through engagement with the therapist and the art materials in a safe environment” (p. 271). The evidence to such positive change can be seen “when a child is able to direct their pain, rage, shame and other difficult feelings into making art which can then be shared with the art therapist” (p. 272). Creative expression has been observed to be an effective therapeutic tool for children as it allows for the communication of emotions and thoughts through non-verbal means. Moreover, through art expression, children gain greater knowledge and awareness of themselves, and develop their self-esteem as well as social skills (Bat Or & Zusman-Bloch, 2022).

In Singapore, practices of art therapy and psychology are not regulated by the government (Thian, 2024). Art therapy services for children and youth are provided by clinical art therapists (holding Master’s training) working in the healthcare, welfare, and education systems, according to a multi-tiered intervention system (August et al., 2018), and in the private sector. Art therapists collaborate with social service agencies (SSAs), schools, humanitarian organisations, and other private clinics and companies, to service the local community. This study reviews art therapy services for children and youth in Singapore, suggesting the benefits of this modality for improving the mental health and well-being of children, youth and families.

Methodology

To understand the strengths and the challenges of art therapy intervention for children and youth development and mental health, this study used a mixed methods approach in data collection and analysis. The author has collaborated with The Red Pencil Singapore (RPS), a charitable not-for-profit Institute of Public Character that offers Art therapy programmes for partner organisations (POs). This study reviewed data collected by the RPS between January 2021 and July 2023 from 43 art therapy programmes for 197 service users (including children under 18 years old and some parents) in partnership with 31 SSAs and schools. The quantitative data analysis includes needs assessment reports and pre/post-programme questionnaires.

A qualitative thematic analysis (Scharp & Sanders, 2019) of six interviews with art therapists working with children and youth in schools, SSAs and private clinic, was triangulated with ten supervision reports documented by the author for the RPS. The

data triangulation increases the reliability of the thematic analysis (Lauri, 2011). In addition, visual data in the form of artwork photographs added dimension to the data analysis (McNiff, 2011), representing the output of art therapy.

Results

The results of this study provide an overview of the RPS's current art therapy programmes for children and youth, highlighting the strength of art therapy as a modality of therapeutic work for this population, and suggesting the significant role it can have in the care ecology of Singapore. The data analysis offers a deeper understanding of the connection between the needs of the community, the structure of the art therapy intervention, as well as some of the barriers experienced by youth and therapists.

This study describes the structure of art therapy programmes provided by the RPS, which represents a standard setting (of time and space) that allows the therapist to introduce the modality, identify the needs, and make further recommendations about the case. The common structure of an art therapy programme by the RPS includes eight sessions of 60 to 90 minutes in a space designated by the PO. The programmes are designed and implemented by a professional art therapist, hired by the RPS for each programme. The art therapist may be supported by three sessions of clinical supervision per programme. The set of sessions provided by the RPS is renewable upon request from a psychologist from the PO.

Needs Assessment Analysis

This analysis reviewed the needs assessment data from 48 programmes developed in collaboration with 31 POs. Each PO has submitted a needs assessment upon which the art therapy programme was designed. The needs assessment data provide a community scan (see Figure 1), describing the clients' demographic information and the circumstances that inform the art therapy programme goals. The data indicate that most of clients struggle with financial challenges and with family structure and relationships.

Pre/Post-Programme Questionnaire Analysis

Service users completed pre- and post-programme questionnaires, reporting on their experiences of the art therapy programme. The data indicate a substantial improvement in self-esteem and self-confidence of the participants (see Figure 2).

Figure 1
Needs Assessment's Reasons for Therapeutic Intervention

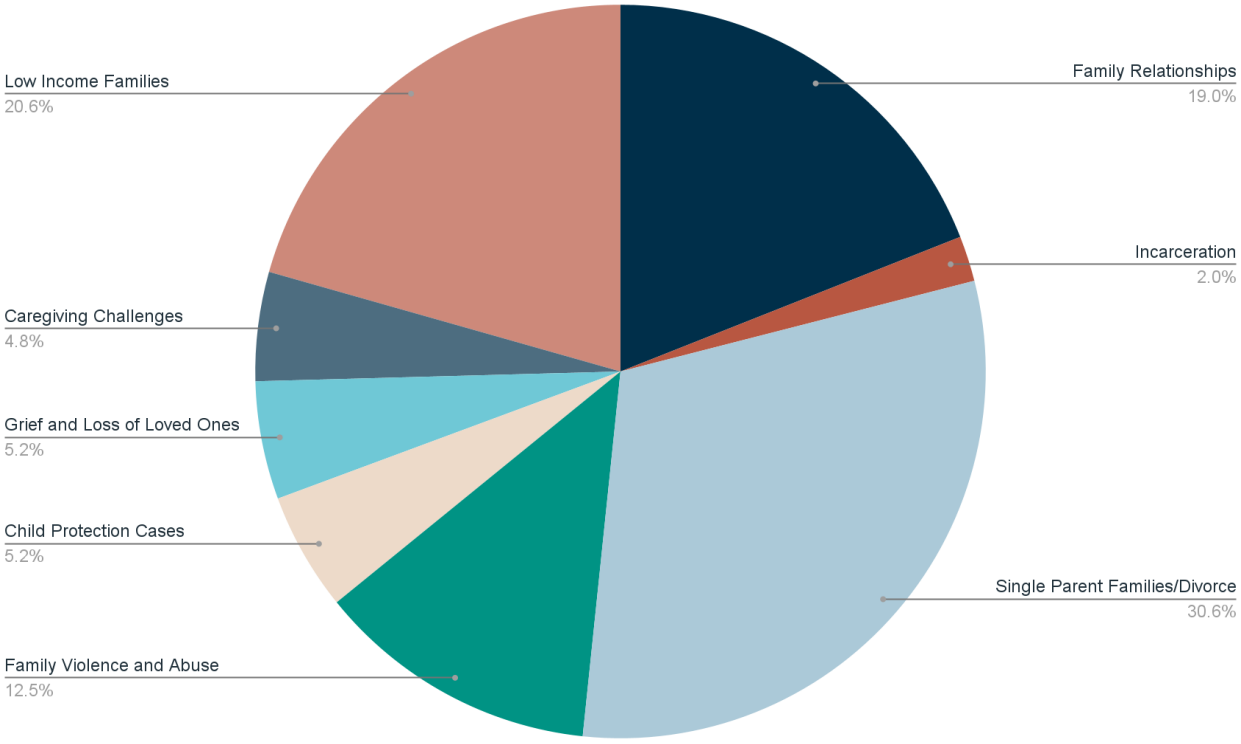
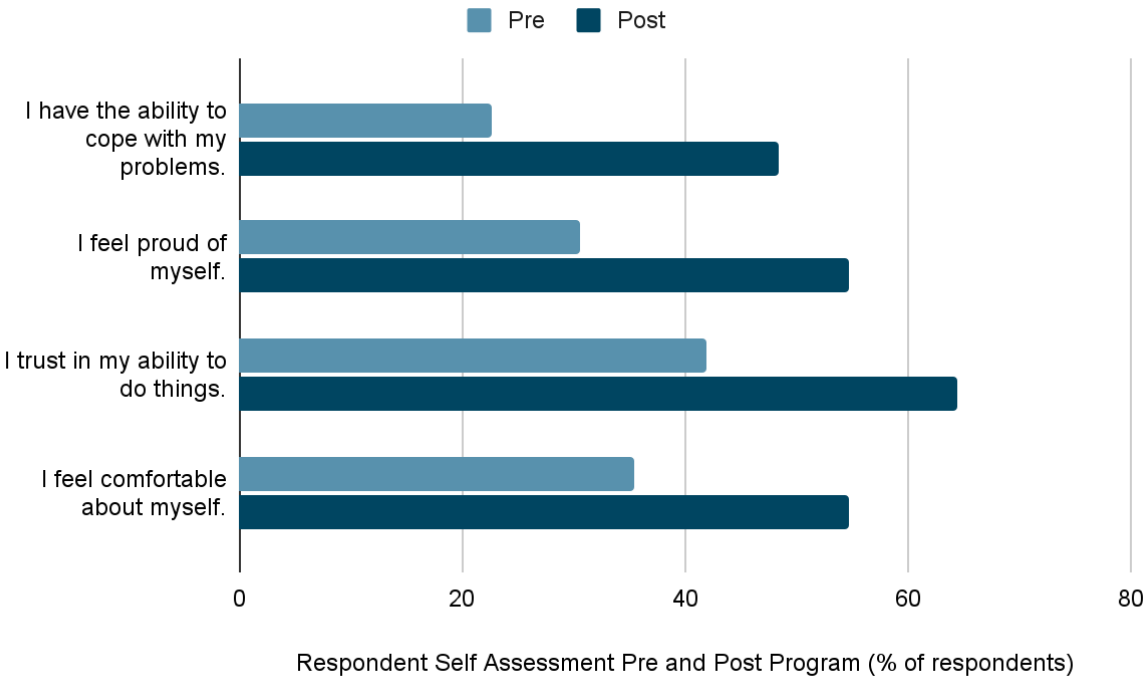


Figure 2
Pre/Post-Programme Feedback Analysis



Following the quantitative data that point to the value of art therapy intervention, the qualitative data analysis provides a deeper understanding of the significance of art therapy with children and youth. The following section provides examples from the qualitative data to describe the qualities and strengths of this modality.

Art Therapy is an Effective Intervention when Working with Children

The data describe the nature of the art therapy work as a natural way of communication, a non-verbal language shared between the art therapist and the child, which is more readily available than verbal communication for children. Art offers a meaningful tool to enhance communication and to improve identity development and the well-being of children and youth.

> The first thing that makes art-based activities so good with children, so perfect for children, it's because it's such a natural part of the way they communicate and experience the world…Before we develop a verbal spoken language, we are working with symbols, with images, with gestures…I think that we just speak to a very primal part of the brain. (Art Therapist 5).
>
> Art therapy has this beautiful way of being able to spell out for a child, to listen to their language, to translate this sort of imagery, translate what they're trying to say in the session. (Art Therapist 3).
>
> It's not just looking at the artwork itself, it's also – how is their body? What are they doing? How do they feel when they're doing it? What's the content of the discussion that comes up afterwards? (Art Therapist 3).

Because art is not rational, it serves as a medium for processing feelings that are not rational, such as pain, confusion, loneliness and fear. The experiential nature of artmaking involves all the senses, engages imagination and symbolic and abstract thinking (conscious or unconscious), and supports the child's development of multiple forms of intelligence (Keates & Pearson, 2024; McDonald et al., 2019).

The data illustrate how art therapy can be effective when done individually or in group settings. While individual work can focus on one client's needs and relationship with the therapist, children in a group setting have the opportunity to experience and practice social skills and learn by observation and through engagement with others. These unique qualities of group art therapy are significant for children and youth development.

Thematic Analysis of Interviews and Supervision Reports

Two categories of themes arose from the analysis of interview data: (i) client-centric aspects of care, and (ii) systemic and structural aspects of care (see Table 1). While the client-centric themes focus on the client experiences, the systemic and structural aspects of care represent the cultural and ecological influences on the care and support available for children and youth in Singapore.

Table 1
Thematic Analysis from Interviews of Art Therapists and Supervision Reports

Client-centric Aspects	Systemic and Structural Aspects
Client experience:	Context of care:
Creating safe space and supporting self-expression	The setting of time; space; group therapy; individual therapy
Art therapy:	Importance of ecology:
Language, models and techniques	Child development in a socio-cultural environment
Stigma:	Importance of collaboration:
Identification and assessment impact on children and communities	Creating an eco-system of care
Needs and goals:	Challenges related to resources:
Individual care versus group therapy	Priorities in healthcare, welfare and education
Relational and personal processes:	Ethical practice.
Between client and therapist, therapist and family	Concerns and education around confidentiality and ethical conduct

Some Key Challenges Highlighted by the Data

The structure and setting of the art therapy programmes appeared as a significant theme representing both potential strengths and complex barriers to effective care for children and youth.

There are three main areas of challenge raised by the art therapists: **safe spaces** in schools; cultural **attitudes** towards the child's challenges; and **stigma** about support needs.

> For some students, school is a space where children experience significant challenges and conflicts, and it becomes an unsafe space for therapeutic processes. (Art Therapist 2).
>
> A part of Singaporean culture manifests in a desire to rationalise, intellectualise, 'moving on', and solution-based approach for mental health crisis. (Art Therapist 3).

> In Singapore there is an issue of stigma and therefore it is better to discuss mental health concerns rather than mental health conditions...There is a need for mental health support for children who are not diagnosed with mental health conditions. (Art Therapist 2).

While the data highlight that art therapy is an effective intervention, they also reiterate that therapeutic processes necessitate a safe space. Furthermore, the analysis illuminates that safety is important not only during therapy sessions, but also in community spaces, in schools, and in their homes. Indeed, some of the lived predicaments of children highlighted in the data are hard to 'fix' and can persist for a long time. A child may get support during therapy, but then go back home to experience the same persisting challenges that contribute to mental health challenges. Therefore, to make a change in the child's well-being, the support for change should be facilitated in the wider care environment.

The art therapists reflected on the ecology of care, which can have a fundamental impact on the support for children and youth:

> A child's life is rooted in their ecosystem. After a therapy session the child returns to the environment in which harm takes place…In order to create change, we need to support change in ecosystems and communities. (Art Therapist 3).

> We need to support the parents, the carers, the teachers...all who support the child. (Art Therapist 2).

Visual Data

The artworks represent the non-verbal language expressed by the client. Although we cannot share photographs of the artworks in this paper, it is important to recognise the meaningful expression in the artwork and its role in communicating the messages raised by the client. As described by the art therapists:

> Looking together in the artworks has a meaningful impact. (Art Therapist 4).

> They (i.e. students in the group) will mostly not really talk to one another…but they look at one another artworks. (Art Therapist 1).

> If the parents try to understand the child, sometimes I will bring the image (i.e. artwork) and we will discuss this image...I'll help them to sort of translate what's going on with this. (Art Therapist 3).

Discussion

The findings of this study underscore the value and potential impact of art-based programmes for children and youth, as perceived by both service users and art therapists. The interviews with art therapists revealed concerns regarding the current implementation of art therapy within the broader context of the Singapore care ecology. These insights highlight several areas for the development of art therapy in Singapore.

Although the data suggest the effectiveness of art therapy intervention on the participants' self-esteem, confidence and resilience, more research is required to identify specific intervention tools and models that target specific needs. Further research may contribute to our understanding of the connection between the needs of the community and the structure and setting of the art therapy intervention.

Additionally, the data shed light on the importance of considering a child's environmental ecosystem when addressing their mental health. Art therapists stressed the need to support the ecosystem of care surrounding the child, indicating that a holistic approach to care is crucial for long-term sustainability. Current literature often fails to include art therapy in conversations around interdisciplinary care chains when supporting children with mental health challenges (Kua and Rathi, 2019). This paper recommends incorporating professional art therapists into the multidisciplinary care system. There is thus a need for greater integration and support within the Singapore care ecology. The sustainability of care often relies on collaboration within the community, and between professionals. Integrating art therapy into the multiple modalities that shape the system of care requires a shift in attitude and allocation of resources. Hourly wages for a therapy session do not account for the integrated collaboration done by care chains. We need to provide resources for multidisciplinary teams to share and build holistic care for children and families.

The analysis also highlighted that school settings may not always provide conducive spaces for therapeutic work, potentially hindering the effectiveness of art therapy interventions. There is an urgent need to review the spaces in which therapy takes place to better support the needs of the child. It is important for the child to feel that their environment is safe and supportive; not for adults to simply decide whether an environment (such as schools) is an appropriate space for therapy. Moreover, societal expectations for children to quickly overcome mental health struggles may indicate a lack of understanding or tolerance for such issues, further complicating the landscape of care. Additionally, stigma surrounding mental health in Singapore may prevent parents from seeking assessments and support for their children, creating barriers to accessing necessary care.

Conclusion

Art therapy has the potential to play a central role in working with children and families because the art therapy process is non-judgemental, joyful, and accessible. Art emphasises an individual's freedom to make choices and allows children to explore their own voice and identity. The child can feel empowered and is provided the space and freedom to explore and express difficult experiences. Furthermore, artmaking stimulates multiple ways of expression that integrate various ways of knowing. Addressing challenges such as inadequate therapeutic spaces, societal attitudes, and stigma will be critical in realising the full potential of art-based programmes for the well-being of Singaporean children and youth.

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16. Using Practice Research to Inform the Hidden Youth Intervention Programme

Denise Liu, Sonia Khiatani, Zoe Tee

Abstract

Hidden youth (Hikikomori) are youth who withdraw from society for at least six months, with mental illness not the primary cause of isolation. To reach this isolated population and address gaps in services, a community mental health service and a youth social work team collaborated to develop the first specialised intervention for hidden youth in Singapore, the Hidden Youth Intervention Programme (HYIP). The HYIP adopts a biopsychosocial approach to address the complex needs of Hidden Youths and their families.

This chapter focuses on how the HYIP team uses practice research and evaluation to inform the development and implementation of the intervention model. Due to the challenges collecting data from this difficult-to-reach population, we use innovative methodologies such as documentary photography to capture the lived experiences of Hidden Youth. Foreseeing difficulties engaging Hidden Youth, we modified standard research and evaluation approaches to include capturing information from other informants such as caregivers and practitioners.

We will also reflect on the collaborative process between practitioners and in-house researchers to conduct practice research and evaluation with the goal of informing and improving HYIP.

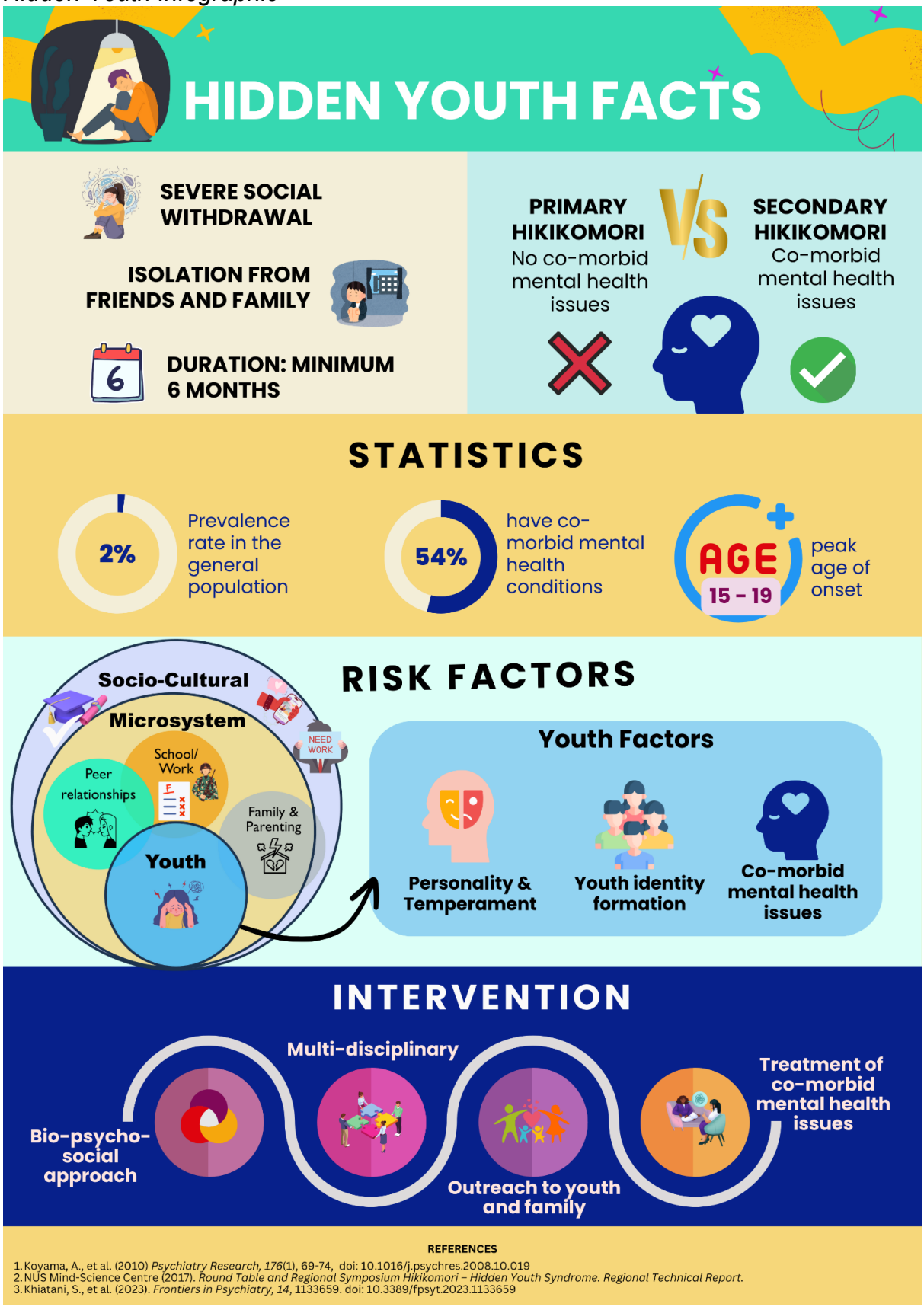
Background

Hidden Youth

Hikikomori is a severe form of social withdrawal for a minimum of 6 months. Hikikomori individuals socially isolate themselves physically, rarely or never leaving their home or interacting with others (Wong et al., 2019). In severe cases, they isolate themselves in their room with limited communication with family members. The phenomenon was first named in Japan but has now been found worldwide. The estimated prevalence of hikikomori is 1.2% to 1.9% of the general population, according to data from Japan (Koyama et al., 2010) and Hong Kong (Wong et al., 2014).

Figure 1

Hidden Youth Infographic



The hikikomori phenomenon itself is currently not considered a mental illness, and not all hikikomori individuals have mental illness (Kato et al., 2019). However, one study showed that approximately 54% of hikikomori individuals had co-morbid psychiatric disorders (Koyoma et al., 2010). Mental illness may precipitate or result from the hidden youth behaviour. Anxiety disorders, depressive disorders (Koyoma et al., 2010), and internet gaming disorders (Lee et al., 2013) are the most common psychiatric co-morbidities with hikikomori.

There are no clear aetiological factors for hikikomori, but studies have indicated varied risk factors, including *parental* factors, such as permissive or uninvolved parenting, high parental anxiety, or other family dynamics (Hareven et al., 2022). Other risk factors include *personality* factors such as higher propensity to shame and sensitivity (Kato et al., 2019), *psychological* factors such as identity distress (Hihara et al., 2022), and *social* factors including stressful life situations like competitiveness at school/work or loss of employment (Kato et al., 2019).

Please refer to Figure 1 for more information about hidden youth.

The Hidden Youth Intervention Programme (HYIP)

To work with this complex, multifaceted phenomenon, the Hidden Youth Intervention Programme (HYIP) was developed as a collaboration between social workers from the Hidden Youth Outreach Service at Fei Yue Community Services (FYCS) and mental health professionals from the Response, Early Intervention and Assessment of Community Mental Health (REACH West) team. Within the context of HYIP, 'hikikomori' are referred to as 'hidden youth' because the programme targets youth aged 12 to 25 years.

HYIP is based on established intervention frameworks from Japan and Hong Kong and takes a biopsychosocial, stage-wise approach to working with hikikomori and their families. Figure 2 outlines the four stages briefly. While viewing hikikomori as a social phenomenon overall, HYIP recognises the importance of addressing the underlying psychopathology present in hidden youths. There is an emphasis on psychiatric and psychological support for co-morbid mental health conditions alongside the social and family intervention throughout the four stages, aiming to ensure a comprehensive treatment approach for this complex population. For a more detailed description of each stage, refer to Khiatani et al. (2023).

Context and Background

Since HYIP began in 2021, we have embarked on the following practice research and evaluation studies (see Table 1). We will elaborate on selected studies in the next section.

Figure 2
The Hidden Youth Intervention Programme

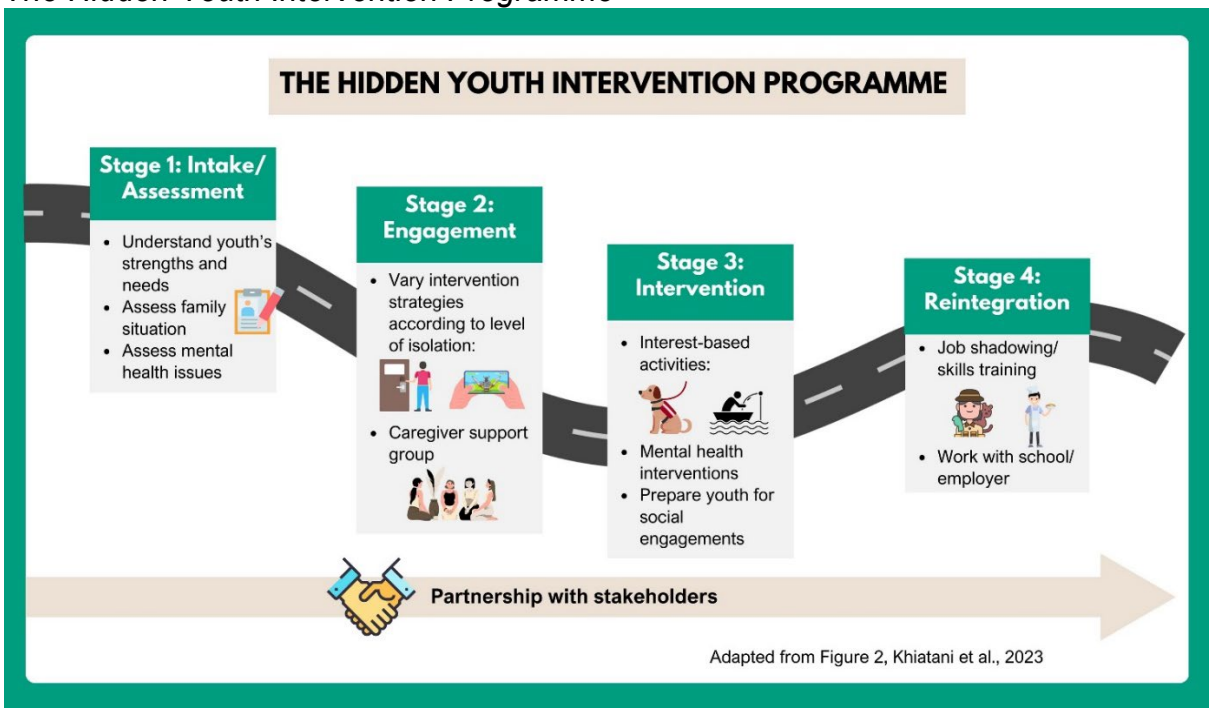


Table 1
Hidden Youth Research and Evaluation Studies

	Name of Study	Status
Study 1	Uncovering the Experiences of Caregivers of Hidden Youth	In Progress
Study 2	Social Workers' Insights on What Contributes to Social Withdrawal Behaviour of Hidden Youth in Singapore	Completed (2024)
Study 3	Challenges and Good Practices in Hidden Youth Work: An Analysis of Reflective Practice Circles	Completed (2022)
Study 4	An Exploratory Study on Social Work Engagement of Hidden Youths	Completed (2024)
Study 5	Outcome Evaluation of HYIP	In Progress
Study 6	Understanding the Most Significant Changes Experienced by Hidden Youth during HYIP	Upcoming
Study 7	Visualising Hidden Youth Using Documentary Photography (with Professor Peter Szto)	Completed (2022)

For most practice research studies, the study team (or using a gaming analogy, the "party") consisted of representatives from the youth department (e.g., youth workers, programme coordinator), researcher(s) from Fei Yue's in-house research team, and in some instances (e.g., studies 2 to 4), social work academics.

Challenges and Opportunities in Research and Evaluation

Our journey of conducting research and evaluation has been fraught with challenges to overcome (or "enemy bosses"). As our multidisciplinary study team (or "party") of varying "classes" and skillsets explored new "maps" and as random chance encounters and opportunities came our way, we discovered scrolls of knowledge and potions of insight, which have helped to improve and "level up" HYIP. We are still novices and the road ahead is long, but we will share the overall challenges faced, the specific challenges related to conducting practice research, evaluation, and

utilising participatory methods, as well as our overall reflections from our journey so far.

Overall Challenges

First, we will outline the overall challenges we faced which impacted the design and conceptualisation of all the practice research and evaluation studies we have embarked on.

Nature of population. Withdrawing socially provides hidden youth with a sense of control and safety. Their reclusive nature and reluctance to engage with strangers make it challenging to contact them initially. Validated self-report measures of social withdrawal such as the Hikikomori Questionnaire (HQ-25; Teo et al., 2018) are thus challenging to administer, especially at the early stages of HYIP before the worker establishes a relationship with the hidden youth. Even after the worker engages the youth, any research endeavour must not jeopardise the therapeutic relationship between the hidden youth and the worker.

Lack of validated caregiver report measures. We, therefore, considered obtaining caregiver reports of the hidden youth's social withdrawal behaviour. There are, however, no validated questionnaires available in English that can enable us to understand hidden youth behaviour from the caregiver's perspective. Moreover, given that many hidden youths have limited contact with their family members, caregivers may not have sufficient insight into their child's social withdrawal behaviours.

Practice Research

Other than a few studies examining risk factors and hikikomori tendencies among university students (e.g., Lin et al., 2022), there is limited research about hidden youth in Singapore. Practice research is thus essential to address gaps in knowledge and inform the development and implementation of our intervention model. In view of the challenges faced, we explored current knowledge gaps and found opportunities to work around the challenges as we conceptualised new practice research studies. Questions about what contributes to and perpetuates hidden youth's social withdrawal remain and are critical to inform service goals. Without understanding the risk factors that contribute to social withdrawal in Singapore, there exists gaps in our knowledge of which areas HYIP should target. As such, we embarked on two practice research studies that aim to understand the factors that contribute to social withdrawal behaviour.

Study 1: Caregivers' experiences. Previous studies examining the impact of parenting behaviours on social withdrawal have shown that caregivers' lack of knowledge may delay detection and intervention for hidden youths (e.g., Kubo et al., 2021; Teo & Kato, 2015). Similarly, in our practice, we have observed that caregivers struggle to develop insight regarding their contribution to their child's social withdrawal behaviour. However, no studies thus far have examined how caregivers understand hidden youth behaviours. The exploration and analysis of caregivers' lived experiences would provide valuable insight into hidden youths' family history and potential risk factors for hikikomori behaviour.

While it may be challenging to physically reach hidden youths, we explored engaging social workers who provided their insights into hidden youth behaviour.

Study 2: Social Workers' Insights. HYIP social workers gather information from the youths and stakeholders such as caregivers and school personnel. The information gathering process enables social workers to explore factors that contribute to the youth's social withdrawal. We interviewed social workers to understand how they conceptualised the hidden youths that they have worked with and their perspectives on what and how different factors contributed to the youth's social withdrawal behaviour.

Importance of Evaluation

> You should measure things you care about. If you're not measuring, you don't care and you don't know. (Steve Howard, Chief Sustainability Officer at IKEA).

There are many things we do not know about hidden youth interventions, particularly in the Singapore context. This is not because we do not care. We (as well as our funders) are invested in understanding whether HYIP is effective in reducing social withdrawal. If this is so, what is preventing us from knowing more about what we care about, *and* how to measure them?

According to a narrative review by Chan and Lo (2014), there is a lack of evidence-based practices for hidden youth. Although research has shown that specific modalities such as home visiting (Funakoshi et al., 2021), online gaming (e.g., Chan, 2020), and animal-assisted interventions (e.g., Wong et al., 2023) are effective in reducing social withdrawal, most intervention models have not been empirically tested.

Unfortunately, there are no clinical practice guidelines which specify the modalities we should use, and what components are essential to include in hidden youth interventions. With an increasing emphasis on evidence-based practices and impact measurement (National Council of Social Service, 2022), and our professional responsibility to ensure that we are providing effective services (Drisko & Grady, 2015), there is an urgent need to collect data to: (1) consolidate good practices, (2) determine which components of HYIP needed to be refined, and (3) demonstrate preliminary outcomes to our funders and stakeholders. Moreover, findings need to be translated rapidly into practice to refine our intervention model.

Study 3: Good Practices in Hidden Youth Work. In 2021, one year after HYIP was initiated, we conducted three reflective practice circles involving 14 workers to identify good practices utilised during HYIP (refer to Khiatani et al., 2023 for details). Good practices identified from the study were integrated into the HYIP theory of change, our theory of how the various HYIP components contribute to a chain of intermediate outcomes resulting in our ultimate goal of reducing social withdrawal (Funnell & Rogers, 2011). In **Study 4***,* we focused on exploring effective strategies utilised by workers to engage hidden youth during the early stages of intervention.

Study 5: Evaluating Outcomes. As HYIP involves a multidisciplinary team and a lengthy engagement period, the substantial resources required to run the programme need to be accounted for. To evaluate whether HYIP is effective in reducing social withdrawal, we analysed workers' ratings of social withdrawal and casefile information from 25 youth known to HYIP. Preliminary findings indicated that youths showed reductions in the severity of social withdrawal behaviours from intake to the latest point of contact. Cases were open for an average of 14 months for youths at the reintegration stage (see Khiatani et al., 2023). In addition to workers' ratings, we plan to pilot a caregiver report measure of social withdrawal.

Increasing Participation

In our journey so far, "party members" (practitioners and researchers) and to some extent, funders and stakeholders, have decided on our destination (research goals), and the path we should take to get there (data collection methods). Who are noticeably missing from our "party" are the most important team members – the hidden youths themselves.

Youth participatory action research (YPAR) includes youth's voices by changing their role in the research process (Ozer, 2017). Instead of being passive participants who provide data to researchers by completing surveys or taking part in interviews, youths collaborate with researchers to decide *what* to study and *how* to conduct the study (Rodriguez & Brown, 2009). YPAR is transformative – it generates research centred on youth's lived experiences that informs and strengthens interventions (Head, 2011). Youths who participate in YPAR also have an enhanced sense of agency and develop leadership and interpersonal skills (Anyon et al., 2018).

Participatory evaluation involves stakeholders in the entire evaluation process, from deciding what outcomes are important for them to determining how findings should be interpreted and used to inform the programme (Guijt, 2014). Participatory evaluation increases the likelihood that findings will be translated into action (Patton, 1997). We are embarking on **Study 6***,* an evaluation study involving the use of the Most Significant Change (MSC; Davies & Dart, 2005) method. MSC involves stakeholders, possibly including hidden youths, in the process of collecting and selecting stories of the changes they experienced after participating in HYIP.

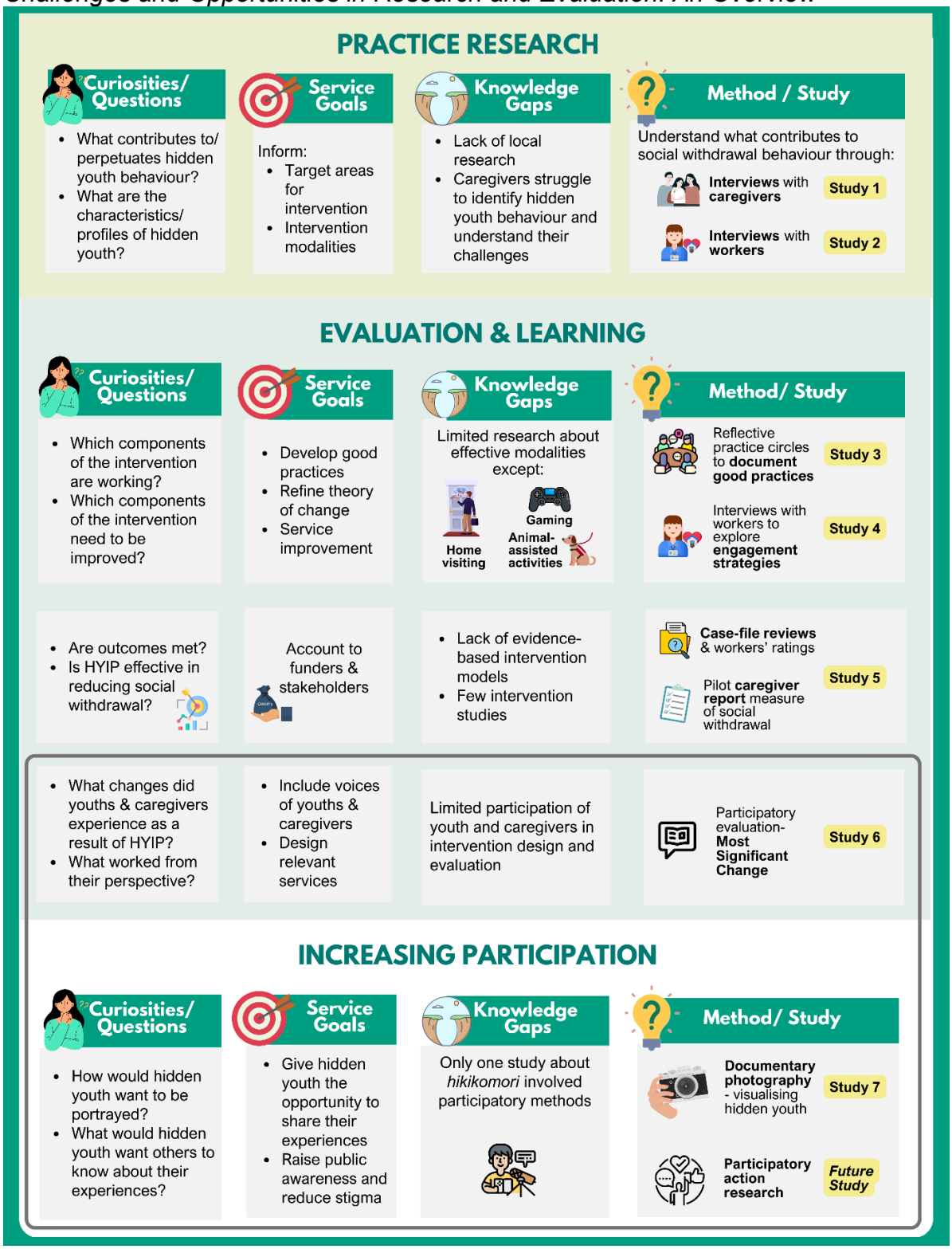
While conventional outcome evaluation often involves the use of standardised measures to find out if pre-determined outcomes are achieved, techniques like MSC can explain *how* change comes about, and what outcomes are valued by various stakeholders (Willetts & Crawford, 2007).

Study 7: Visualising Hidden Youth. We endeavoured to understand the lived experiences of hidden youth through documentary photography, an ethnographic method of visualising and analysing social issues (Szto, 2008). While documentary photography usually involves the researcher capturing photographs of the participant, we attempted to increase the space for youths' participation by encouraging them to "direct" the session and decide how they wanted to be portrayed. However, we acknowledge that youths still had limited participation in the research process as the methodology and objectives for the study were decided by us. We hope to increase the spaces for participation further and will be inviting

youths who have completed HYIP to join our “party” (study team) and co-create research that is meaningful to them in the future.

Figure 3

Challenges and Opportunities in Research and Evaluation: An Overview



Overall Reflections

Bridging Perspectives by Denise Liu

As the lone party member observing from afar without direct involvement in HYIP, the researcher only has “head knowledge” about hidden youths. This “head knowledge” comes with assumptions about hidden youths, such as their vulnerability during the recruitment process. As a researcher, I rely on the practitioners’ “heart knowledge” – their practice wisdom, frontline experience, and sensitivity to the needs of the hidden youth. Both “head” and “heart” knowledge must come together to conduct successful practice research. In this case, informed consent processes were modified to consider the needs of the hidden youth (see Liu et al., 2023 for details).

Shifting Perspectives by Sonia Khiatani and Denise Liu

To evaluate the intervention effectiveness, researchers would typically conduct randomised control trials (RCTs) involving an intervention group and a control group, where standardised measures are administered pre and post intervention to determine effectiveness. Conducting “gold standard” research like RCTs would not be feasible given the challenges that we have described above. It would also not be sufficient to allow us to understand *how* HYIP works.

A paradigm shift was needed. From a positivist position that typically espouses objectivity and quantitative methods, we shifted to an action-oriented, pragmatist approach focused on generating knowledge that could be applied practically (Kaushik & Walsh, 2019). We also recognised that although standardised, validated measures have their place in our measurement toolkit, qualitative approaches are equally valid and important, especially for new intervention approaches. Qualitative methods provide us with an in-depth understanding of the hidden youth phenomena and enable us to identify contextual factors affecting implementation (Creswell & Poth, 2018). Moreover, as Cheetham (1992) asserts, it is not meaningful to determine whether outcomes have been achieved if we do not understand the processes underlying the intervention.

Being Clear About Our Purpose by Zoe Tee

> If everything is important, then nothing is. (Patrick Lencioni).

When learning about a new phenomenon, every research opportunity often seems important. Reflecting on our purpose thus becomes paramount in deciding which of these opportunities we should embark on. As a pilot project of relative infancy, we decided to prioritise research projects that will support the development and enhancement of the service. At the crux of this prioritisation process, the people we prioritise are our service users. With that, when any research project is proposed, we run through an internal checklist to ensure that every project serves the ultimate purpose of fine-tuning our service.

Closing Remarks

After the conference, we received a message from an ex-hidden youth named Leon (a fictitious name). Leon started withdrawing at 17. He was largely neglected as a child, experienced several setbacks in his life, and spent years in social isolation. After 10 years, he has since stepped out of reclusion.

He shared:

> The life of a hidden youth is not one that is necessarily distraught...and I reckon that the best way to reach a hidden youth is through another hidden youth.

Leon gave us an interesting dimension to consider: the voice of hidden youth. While practitioners and researchers find innovative ways to work around research and practice limitations, we ultimately have the responsibility to include the voices of our clients and the communities we serve.

Besides a researcher, psychologist, and a social worker, perhaps at the next conference, our “party” will include a hidden youth. Until then, let us see where our journey brings us.

Acknowledgements

We would like to thank all social workers involved in the Hidden Youth Outreach Service (HYOS), especially Mohamed Rauf Redza Bin Mohamed Fauzi and Moses Yeo for facilitating the reflective practice circles, and Gayle Gan Li Shan and Nalina Vijayan for their key contributions to the HYOS team. We would also like to thank the Fei Yue Management team, especially Helen Sim and Benjamin Yeo, for their support and guidance.

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CONCLUSION

17. Closing Thoughts

Jianbin Xu

Youth mental health is a significant social concern in Singapore. In response to this concern, this conference has been insightful and fruitful in exploring youth mental health's upstream prevention and downstream intervention. The practical yet visionary insights from the conference hold great promise for advancing the cause of youth mental health in Singapore. Particularly, these insights have far-reaching implications for social service practice and research concerning youth mental health in Singapore.

From a social service perspective, Singapore's landscape of youth mental health is evolving, shaped by swift and complex technological, global, and social changes that profoundly impact the life experiences of young individuals. To respond to such increasingly complex circumstances, social service practitioners need to holistically synergise preventive and interventive efforts, empowering young individuals to stay mentally healthy while navigating the vagaries and intricacies of life and the streams and waves of challenge.

First, it behoves the social service sector to embed more effective capillaries of care in the heart and soul of upstream prevention. For example, it is important to proactively identify children and youths at risk for mental health issues. This may be done by detecting their mental health risk factors early. It is then important to intervene timely to keep these risk factors from reverberating throughout their life course. Moreover, it is valuable to plant the seeds of competence, fortitude, resilience, and optimism in children and youths and nurture these seeds into protective factors for their mental health. To boost upstream prevention, the social service sector may find it constructive to adopt forward, systemic, and creative thinking, strategic planning, and a proactive, comprehensive, and collaborative approach. These elements could enhance preventive mental health resources and services involved in fostering individual resilience, improving family functioning, training parents, educators, and professionals, providing mental health education, and building a supportive ecosystem.

Second, the social service sector can strive to innovate service models, practice strategies, and intervention modalities related to youth mental health. For example, it may be promising to develop a holistic service model that treats the young individual as the whole person and thus integrates the biological, psychological, social, cultural, existential, and spiritual dimensions of youth mental health. Innovation can be instrumental in opening new meaningful vistas for both upstream prevention and downstream intervention. Social service practitioners may find it worthwhile to mine the interdisciplinary bonanza for the nuggets of innovation. There is reason to believe that the digitalisation of mental health social services represents an interdisciplinary approach that provides innovative and viable solutions to youth mental health needs and issues. While innovation holds out the hope of generating groundbreaking approaches in the field of youth mental health, it is important for innovative practices to be ethical, humanised, down to earth, and tailored to

individual characteristics, circumstances, and specific mental health needs and issues.

Third, the social service sector is in a good position to engage in person-centred care, given that it is grounded in humanism and embraces the strengths perspective and the empowerment approach. To resonate with young individuals, person-centred mental health care should accommodate their meaningful and unique voices. Social service practitioners would find it valuable to listen attentively to youths' innermost voices, being attuned to their concerns, confusions, struggles, miseries, strengths, hopes, dreams, needs, and preferences. By empathising with and engaging their voices, by respecting their dignity, autonomy, and self-determination, and by according them more power in the collaborative helping relationship, social service practitioners can instil a sense of ownership, empowerment, agency, and self-worth in young individuals. Thus, it is worth considering involving young individuals in the formulation, operation, evaluation, and improvement of mental health services and programmes.

The conference has expanded research horizons on youth mental health in the Singapore context. However, there are vast relatively uncharted research terrains that need exploration. For example, lines of inquiry can be oriented to specify the underlying mechanisms and pathways that link various risk and protective factors to youth mental health outcomes. Future research can examine the interplay of biological, psychological, social, cultural, spiritual, environmental, historical, and other factors influencing youth mental health. Relatedly, it is valuable to explore how structure and agency interact to shape the youth mental health landscape. Given that character, resilience, mettle, and other qualities can be forged on the anvil of harshness and hardship, stress-related growth (Park et al., 1996) and post-traumatic growth (Harmon & Venta, 2021) during childhood and youth also warrant researchers' attention.

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