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Author/s:

Hickey, T;Nelson, B;Enticott, J;Meadows, G

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Hickey Tara (Orcid ID: 0000-0002-9365-8164)

The MAC-P program: A pilot study of a mindfulness and compassion program for youth with psychotic experiences

A group program for psychotic experiences

Tara Hickey

Southern Synergy, Monash University, Melbourne, Australia

University Centre for Rural Health, University of Sydney, Lismore, Australia

Jo Enticott

Southern Synergy, Monash University, Melbourne, Australia

Monash Centre for Health Research and Implementation, Monash University, Melbourne, Australia

Barnaby Nelson

Orygen – The National Centre of Excellence in Youth Mental Health, University of Melbourne, Melbourne, Australia

Graham Meadows

Southern Synergy, Monash University, Melbourne, Australia

Mental Health Program, Monash Health, Melbourne, Australia

School of Population and Global Health, University of Melbourne, Melbourne, Australia

Email address of corresponding author

tara.hickey@monash.edu

Background

The purpose of this pilot study was to determine the feasibility, acceptability and the potential clinical utility of a novel mindfulness and compassion program (MAC-P) designed for youth with a range of psychotic experiences.

Method

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A non-randomised, non-controlled prospective follow-up study was conducted. Eighteen participants who either met criteria for the ‘at risk mental state’ or were experiencing a psychotic episode or had a recent diagnosis of schizophrenia attended the 8-week program. Participants completed clinical assessments pre-treatment, post-treatment and at 6-week follow-up which measured a range of symptoms (psychosis, anxiety, depression, stress) and psychosocial outcomes.

Results

Attendance and retention data indicated that MAC-P is a feasible and acceptable program. There was a large significant increase in self-compassion. Mindfulness demonstrated a positive change over time. There was a large significant effect on one subscale – acting with awareness. There were significant reductions in distress associated with psychotic experiences as well as anxiety, depression, stress, and self-criticism. Significant improvements in functioning and insecure attachment styles were also found. Regression results demonstrated that self-compassion was associated with a number of these findings.

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2 Conclusion

3 The MAC-P for youth shows potential as a clinically effective intervention provided as an addition to treatment as usual for youth with psychotic experiences. A larger controlled study is needed to validate the effectiveness of this intervention.

4 Introduction

The UK National Institute for Health and Care Excellence (NICE, 2014) recommend cognitive behavioural therapy (CBT) is offered as first-line therapy for the At Risk

Mental State (ARMS) for psychosis. For a psychotic disorder, both CBT for psychosis (CBTp) and antipsychotic medication are recommended. These practices are endorsed internationally including by the Royal Australian and New Zealand College of Psychiatrists (Galletly et al., 2016). Despite their effectiveness, there are concerns about their limited efficacy.

4.1 Treatment outcomes

No convincing evidence for superior efficacy of any single type of preventive treatment in relation to risk of psychosis onset, treatment acceptability, severity of attenuated symptoms, symptom related distress, depression, or functioning among youth with the ARMS has been found (Fusar-Poli et al., 2019). Stafford et al. (2015) found no significant effects for pharmacological interventions and/or arts therapy, family CBT and individual CBT on psychotic symptoms or depression for youth with psychotic symptoms or schizophrenia in a systematic review and meta-analysis. A meta-analysis by Laws et al (2018) found CBTp had a small benefit on distress, which was subject to possible publication bias and became non-significant when adjusted.

4.2 Mindfulness and compassion-based interventions

A commonly cited definition of mindfulness is “paying attention in a particular way: on purpose, in the present moment and non-judgmentally (Kabat-Zinn, 1994, p. 4). Gilbert (2010) defines compassion as consisting of two separate but important components: (1) a sensitivity to suffering and (2) a motivation to help alleviate or prevent it. Mindfulness, compassion and CBT interventions may complement and enhance each other as they share the fundamental assumption that it is not situations that cause distress but the reaction to them. For a comprehensive literature review of theory and evidence see Hickey et al. (2017). For example, a commonly experienced psychotic symptom is paranoia. Not only is paranoia associated with a sense of threat from others but also internal threats - high self-criticism, problems with self-reassurance (Hutton, Kelly, Lowens, Taylor, & Tai, 2012), negative schemas and fears of madness (Collet, Pugh, Waite & Freeman, 2016). CBT can help clients to become aware of their thinking patterns; mindfulness can help with stepping out of thought streams; and compassion

provides the emotional safety to turn towards difficult thoughts and emotions. A client might ask, “What do I need to hear or do right now to care for myself?”

In a meta-analysis, Khoury et al. (2013) found mindfulness-based interventions (MBIs) for psychosis have a small effect on positive symptoms. They are moderately effective in reducing negative and affective symptoms and increasing functioning. Cramer, Lauche, Haller, Langhorst & Dobos (2016) reported moderate evidence for short and long-term effects of mindfulness and acceptance-based interventions on psychotic symptoms, hospital rates and duration of stay among patients with psychosis in a systematic review and meta-analysis.

Khoury et al. (2015) evaluated a compassion, acceptance and mindfulness (CAM) program designed to treat first episode psychosis in a small pilot study. A significant increase in emotional regulation and a decrease in affective symptoms were found. No significant changes were found for mindfulness, distress or social functioning. Only a quarter of sessions had an explicit focus on compassion. Braehler et al. (2013) compared group compassion focused therapy (CFT) to treatment as usual (TAU) in a randomised control trial focusing on recovery from psychosis. A large increase in compassion was found that was associated with a decrease in depression and perceived social marginalisation. Average attrition rates reported for both mindfulness and self-compassion interventions are lower than those commonly obtained in CBT studies (e.g. Khoury et al., 2013; Braehler et al., (2013)) suggesting greater acceptability to this patient group. When delivered in a group format mindfulness (Louis et al. (2017) and compassion (Ferrari et al. (2017) produce stronger effects. Ferrari et al. (2019) suggest group-based delivery may encourage the sharing of personal experiences that aligns with the core theoretical framework of these interventions, reinforcing acceptance and common humanity.

4.3 The current program

Using the Medical Research Council’s (2006) best practice guidelines, the first author developed a mindfulness and compassion group program, called MAC-P for short. This is

the first group intervention specifically designed using evidence and theory that targets youth with a range of psychotic symptoms from subthreshold symptoms, to first episode psychosis and schizophrenia. In contrast to other interventions it pays equal attention to teaching mindfulness and compassion and their application to symptoms, relationships and functioning. For a detailed program description and participant's experience see Hickey et al. (2019). The primary goal of this study was to evaluate whether the program is feasible and acceptable and associated with an increase in self-compassion.

5 Method

5.1 Participants

Participants were recruited from mental health services in Melbourne, Australia. One early psychosis service wanted the program available to all clients. From a clinical and theoretical perspective, the intervention was applicable to both attenuated and frank psychotic symptoms. Therefore, youth between the ages of 15-25 who had an 'at risk mental state,' a psychotic episode or a recent diagnosis of schizophrenia were eligible for the study. Exclusion criteria were: a psychiatric or neurological disorder that would significantly limit participation; problematic substance use; and insufficient fluency in the English language.

In total, 41 young people were approached; three were not interested; three could not get to the venue; two had problematic substance use. Thirty-three individuals were entered into the study. Of these, 15 individuals did not attend the program; 3 were discharged and no longer interested in participating; 6 obtained jobs or a training placement; 3 did not want to miss school; 2 became too unwell to attend and 1 moved interstate. Eighteen participants completed the program.

5.2 Study design

The pilot study design was a non-randomised intervention study with longitudinal follow-up. A researcher completed the Comprehensive Assessment of At Risk Mental States

(CAARMS), Brief Psychiatric Rating Scale (BPRS) and Structured Clinical Interview for DSM-5 (SCID-V) substance use module as screening tools. Baseline (T0) assessment followed for participants meeting eligibility criteria. A different researcher completed post-treatment (T1) and 6-week follow-up (T2) assessments to minimize the risk of bias. Three treatment groups were completed. To ensure the reliability of CAARMS and BPRS scores researchers received training and inter-rater reliability was assessed by an experienced clinician and researcher. Qualitative data was gathered and is the focus of a subsequent paper.

5.3 Instruments

All measures were administered at all time points except for the SCID-V, which was collected at T0 only.

Structured Clinical Interview for DSM-5 (SCID-5) is a semi-structured interview for making a DSM-5 diagnosis. The mood, anxiety, psychosis and substance use sections were administered (First et al., 2015).

Self-Compassion Scale (SCS) is a self-report scale that assesses three components of self-compassion (mindfulness, common humanity, self-kindness) and their counterparts (over-identification, isolation, self-judgement). The scale has good internal consistency. Cronbach alpha scores range from .75 to .81 (Neff, 2003).

Five Facet Mindfulness Questionnaire (FFMQ) is a self-report measure of mindfulness skills including observing, describing, acting with awareness, non-reactivity to inner experience and non-judging of experience. The scale has demonstrated good internal consistency (Baer et al., 2006).

Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS) is a self-report scale developed by Gilbert et al. (2004) to measure the functions of self-criticism and the ability to self-assure. Cronbrach alphas for this scale are 0.92 for correcting and persecutory respectively and 0.87 for self-assurance.

Fear of Compassion Scale (FOC) is a self-report measure developed by Gilbert et al. (2011) to explore a person's thoughts about compassion for others, from others and towards oneself. The Cronbach alphas for this scale are 0.92 for fear of compassion for self; 0.85 for fear of compassion from others and 0.84 for fear of compassion for others.

Comprehensive Assessment of the At Risk Mental States (CAARMS) is a semi-structured interview. It identifies three groups (i) individuals with an immediate family history of psychosis, (ii) those with attenuated psychotic symptoms – (iii) Brief limited intermittent psychotic symptoms that resolve spontaneously within a week. The CAARMS can also be used to determine first episode psychosis threshold. It has good to excellent reliability (Yung et al., 2005).

Brief Psychiatric Rating Scale (BPRS) assesses psychiatric symptoms belonging to four domains: depression, anxiety, psychotic symptoms and activation levels. Symptoms are rated from 1 (not present) to 7 (extremely severe) (Lukoff et al., 1986).

Depression Anxiety Stress Scale-21 (DASS-21) is a shortened version of the Depression Anxiety Stress Scale-42 (Lovibond & Lovibond, 1995). The Cronbach's alphas for the subscales of the DASS-21 are 0.94 for depression, 0.87 for anxiety and 0.91 for stress.

Global Functioning: Social and Role Scales The social scale assesses quantity and quality of peer relationships, level of peer conflict, intimate relationships and involvement with family (Auther et al., 2006). The role scale rates level of performance in primary role whether school, work or homemaker (Niendam et al., 2006).

Relationships Questionnaire is an established self-report scale designed to measure secure, fearful, pre-occupied and dismissing attachment styles (Bartholomew & Horowitz, 1991).

5.4 Intervention

The manualised intervention consisted of eight weekly 90-minute sessions (see Hickey et al., 2019 for description; see Table 2 for program outline). Two experienced clinicians facilitated the program. One facilitator had completed CFT training and teacher training in mindfulness-based stress reduction and mindful self-compassion. The second facilitator had a diploma in meditation training. Participants continued to receive TAU.

5.5 Data analyses

Feasibility was assessed using recruitment rates, retention rates and rate of completion of the intervention. Informal feedback was recorded as a preliminary indicator of acceptability. Statistical analyses were conducted in SPSS 26 (IBM Corp, 2019). One-way analysis of variance tests (ANOVAs) were used to compare T0 with T1 and T2 for all outcome measures. Cohen's *d* effect sizes are reported. Linear regression analyses were conducted to examine whether a change in self-compassion was associated with psychosocial outcomes.

6 Results

6.1 Feasibility and acceptability

Eighteen participants attended the program. Two dropped out after the first session for reasons unknown. One participant's data was excluded as it emerged she had not fully disclosed her substance use at T0 which was an exclusion criteria. Socio-demographic data for the remaining 17 participants are presented in Table 1. The attrition rate was low (11%). In other compassion studies participants attending 62-66% of sessions were considered 'completers' (e.g. Bluth et al., (2016)). Using this definition, attendance was good with twelve participants considered 'completers'. Five out of eight sessions were attended on average. Informal feedback indicated support for the program.

6.2 Potential intervention effects

6.2.1 Primary outcomes

Table 3 lists means and standard deviations for all measures as well as within-group effect sizes. Data from Bonferroni post-hoc correction tests are reported in the table for reference. No corrections have been applied to the results below.

A large improvement in self-compassion was found ($d = 0.804$). There was a large increase in self-kindness ($d = 0.983$) and a trend for increased mindfulness ($d = 0.336$) and common humanity ($d = 0.210$). There was a large decrease in self-judgment ($d = -1.412$) and a moderate decrease in isolation ($d = -0.610$) and over-identification ($d = -0.589$). For the FFMQ scale, only the acting with awareness subscale showed significant change ($p = 0.022$, $d = 0.791$) though there was a trend for an increase on the observing, describing, non-judging and non-reactivity subscales.

6.2.2 Secondary outcomes

Medium to large improvements were found on the symptoms scales. There was a large significant effect at T2 on the CAARMS total score ($p = 0.008$, $d = 0.840$). There was a significant decrease in distress associated with unusual thought content ($p = 0.05$, $d = -0.573$), perceptual abnormalities ($p = 0.29$, $d = -0.656$) and disorganised speech ($p = 0.03$, $d = 0.644$). A significant large effect was found on the disorganised speech symptom subscale ($p = 0.00$, $d = 0.938$). There was a significant effect on the BPRS total score ($p = 0.003$, $d = -2.196$) and the majority of the subscales: anxiety/depression ($p = 0.000$, $d = -3.288$), negative symptoms ($p = 0.013$, $d = -1.549$) and activation ($p = 0.043$, $d = -1.098$). There was no significant change on the psychosis subscale ($p = 0.093$, $d = -0.847$). In terms of functioning, the results revealed large effect sizes for role functioning ($p = 0.002$, $d = 1.013$) and social functioning ($p = 0.000$, $d = 1.559$). Anxiety, depression and stress demonstrated medium to large improvements as measured by the DASS ($p = 0.000$, $d = -1.405$).

With regard to self-criticism, there was a significant drop in *inadequate-self* ($p = 0.001$, $d = -1.142$) and *hated-self* ($p = 0.002$, $d = 1.005$) with no change in self-reassurance ($p = 0.343$, $d = 0.283$). There was a trend in the reduction of fear of compassion for others ($p = 0.665$, $d = -0.303$), from others ($p = 0.204$, $d = -0.282$) or for the self ($p = 0.190$, $d = -0.356$). There was a significant large reduction in fearful ($p = 0.005$, $d = -0.900$) and pre-occupied attachments styles ($p = 0.013$, $d = -0.737$) while there was no change in the dismissing style ($p = 0.832$, $d = -0.056$).

The study investigated whether a change in self-compassion was associated with psychosocial outcomes (see Table 4). Increases in self-compassion were significantly associated with a decrease on the total CAARMS ($\beta = -0.35, p = 0.015$) but not the total BPRS ($\beta = -0.06, p = 0.727$). Increase in self-compassion was also associated with a reduction in *inadequate-self* ($\beta = -0.75, p = 0.000$) and *hated-self* ($\beta = -0.67, p = 0.000$) and an increase in self-reassurance ($\beta = 0.71, p = 0.000$). Increased self-compassion was associated with a reduction in fear of compassion from others ($\beta = -0.57, p = 0.000$), for others ($\beta = -0.50, p = 0.001$) and for the self ($\beta = -0.51, p = 0.000$). It was also associated with a reduction in fearful ($\beta = -0.36, p = 0.007$) and preoccupied attachment styles ($\beta = -0.34, p = 0.020$).

The data that support the findings of this study are available from the corresponding author upon reasonable request.

7 Discussion

The primary aim of this study was to evaluate whether the MAC-P program, designed for youth with a range of psychotic experiences, is feasible, acceptable and associated with an increase in self-compassion. The secondary aim was to explore its potential clinical utility. The program was deemed feasible and acceptable as measured by recruitment, attendance and retention rates and informal feedback. Eighteen participants attended the program and only 2 (11%) participants dropped out prior to group completion. The attendance rate was good with the majority of participants attending 5 or more of the 8 sessions.

Participants reported large improvements in self-compassion. This finding is in line with other studies (e.g. Braehler et al., (2013); Bluth et al., (2016)). The results did not support our hypothesis that there would be a significant improvement in mindfulness, as measured by the FFMQ, although there was a trend in this direction. One subscale, acting with awareness, demonstrated a significant large effect size. Anecdotally, participants reported they favoured and used particular practices more than others. For example,

many participants reported using practices that were ‘convenient’ such as the breath practice or walking practice. It is possible their personal selection of practices may have influenced these findings.

There was a large significant improvement positive in symptoms as measured by the CAARMS. There was a large significant reduction on the disorganised speech subscale. Significant moderate effects were found for *distress associated with unusual thought content, perceptual abnormalities* and *disorganised speech* at 6-week follow-up. There were large significant improvements in general psychopathology, except for psychosis, as measured with the BPRS. Similarly, at 6-week follow-up depression, anxiety and stress improvement, as measured with the DASS, reached significance. There were also significant large improvements in role and social functioning. These results appear to indicate the program was not effective in reducing positive psychotic experiences at least within the time-frame of the study but was effective in reducing associated distress, depression, anxiety and stress and in improving functioning. Khoury et al. (2015) found most of their results from their pilot study were stronger at 3-month follow-up. Together, these results suggest the benefits of compassion and mindfulness-based approaches can take time to appear which may be a reflection of ongoing practice enhancing these skills.

The findings have important clinical implications. Nelson et al. (2020) found that ARMS clients who are more distressed by their attenuated psychotic symptoms (DAPS) have a poorer clinical trajectory transdiagnostically and greater compromised functioning. An increase in self-compassion was associated with a decrease in DAPS. Docherty et al. (1998) found formal thought disorder is, in part, a stress response to “hot” topics and situations. It is possible a reduction in distress or stress may have contributed to an improvement on the disordered speech subscale. These findings illustrate the potential significance of the MAC-P program as a supplementary intervention to TAU given its effectiveness in teaching self-compassion skills that target DAPS and stress, a reduction of which might have a significant positive impact on outcome for these youth. Research is required to investigate whether distress associated with comorbid symptoms also contributes to a poor clinical trajectory for youth with psychotic experiences.

Self-criticism might be an important process in the development and course of common mental health symptoms, including psychotic symptoms (Waite et al., 2015) and associated distress. Campos et al. (2014) found that vulnerability to self-criticism among adolescents is associated with a greater risk of experiencing intense distress. In the current study, significant reductions in the forms of self-criticism, *inadequate-self* and *hated-self*, were found. An increase in self-compassion was associated with these changes. There was a positive trend for *reassuring-self* over time. It may be that self-compassion first targets a reduction in criticism before building resilience. Future studies should investigate the potential role of self-criticism in the development and maintenance of symptoms and distress.

In the current study, fearful and pre-occupied attachment styles had also significantly reduced by the end of the intervention and remained significant at 6-week follow-up. The reduction in these attachment styles was associated with an increase in self-compassion. There was no change in the dismissing attachment style. Quijada et al. (2015) reported results indicating the intensity of an insecure attachment style plays a role in the clinical outcome for individuals with an ARMS. They recommend targeting a reduction in the levels of insecure attachment in the therapeutic setting stating it probably favours better outcomes in the early stages.

7.1 Limitations and future research

Since the study was uncontrolled it is not possible to know to what degree the changes observed are a direct impact of the intervention or to what extent they would have occurred in its absence as part of TAU. The small sample size ($n= 17$) may have led to over or underestimates of effect sizes. The amount or types of practice participants engaged in between sessions was not recorded. Future studies should capture this information to help clarify which practices are preferred by youth as well as individuals with attenuated symptoms compared to full-threshold psychotic symptoms, that may influence outcomes. A limitation due to the geographical location was a difficulty getting to the venue. Case managers did not tend to refer clients who lived farthest away. An

online program could help increase accessibility. Online interventions have already been developed with the first online social media, mindfulness, and strengths-based intervention to promote social functioning and satisfaction with life for individuals with an ARMS currently being trialled (Alvarez-Jimenez et al., 2018). When analyzed the qualitative data will help guide researchers implement and assess any future modifications to the program.

8 Conclusion

Overall, the results indicate the MAC-P program appears acceptable and feasible to youth with a range of psychotic experiences. While some of the effects can take time to appear, preliminary findings indicate the program might promote increases self-compassion and mindfulness, reduce distress and improve psychosocial outcomes. Future studies are warranted to determine the potential mechanisms of these findings and to evaluate the efficacy of the program in a larger controlled study.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Table 1: Social demographic and attendance data (N = 17)

Measure		
Age		
15-17	8	(47%)
18-25	9	(53%)
Gender		
Male	5	(29%)
Female	10	(59%)
Don't Identify	2	(12%)
Education		
In Secondary School	7	(41%)
Completed School	4	(24%)
Vocational School	3	(18%)
University	6	(6%)
Other	2	(12%)
DSM-V diagnosis		
At Risk Mental State	5	(29%)
First Episode Psychosis	11	(65%)
Past Episode Psychosis	1	(6%)
Current Major Depression	10	(59%)
Past Major Depression	14	(82%)
Current Panic Disorder	8	(47%)
Current Social Anxiety	5	(30%)
Attendance		
Less than 5 sessions	6	(35%)
More than 5 sessions	11	(65%)
Dropped-out	2	(12%)

DSM-V, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Table 2: Themes and objectives for each session of the MAC-P program

Session	Theme
1	Getting to know the nature of the mind <i>Objective:</i> Understanding common humanity of wandering mind
2	Mindfulness of emotion in the body <i>Objective:</i> Bring mindfulness to connection between emotions & body
3	Evolutionary understanding of mind, body & emotions <i>Objective:</i> Understanding the landscape in the context of three circle emotional regulation system
4	Working with thoughts, emotions and sensations <i>Objective:</i> Understanding psychosis symptoms in the context of the three circle emotional regulation system
5	Responding with compassion <i>Objective:</i> Understand and develop a compassionate response
6	Motivating ourselves with compassion <i>Objective:</i> Explore compassionate ways to motivate ourselves
7	Compassionate communication <i>Objective:</i> Explore how to bring compassion to difficult communications
8	Leading a Mindful Compassionate Life <i>Objective:</i> Review course and offer support going forward

Table 3: Means, standard deviations, effect sizes (Cohen's d) for all measures at pre-, post- and 6-week follow-up

Outcome Measure	T0 (pre) Mean (SD)	T1 (post) Mean (SD)	Effect Size	Sig.	T2 (6 wk) Mean (SD)	Effect Size	Sig.
<i>Self-Compassion</i>							
SCS Total	2.51 (0.75)	2.83 (0.78)	0.563	0.047	3.06 (0.57)	0.804	0.007**
Mindfulness	3.13 (0.95)	3.10 (0.91)	-0.032	0.894	3.42 (0.67)	0.336	0.223
Over-identification	3.85 (0.81)	3.50 (0.91)	0.579	0.041	3.35 (0.89)	-0.589	0.039*
Common Humanity	3.02 (1.15)	3.32 (0.83)	0.284	0.288	3.28 (0.76)	0.210	0.417
Isolation	3.95 (0.81)	3.52 (0.86)	-0.548	0.205	3.25 (0.95)	-0.610	0.033*
Self-Kindness	2.59 (0.89)	2.95 (1.03)	0.489	0.085	3.37 (0.72)	0.983	0.002**
Self-Judgement	3.83 (0.77)	3.28 (0.98)	-0.759	0.020	3.04 (0.68)	-1.412	0.000**
<i>Mindfulness</i>							
FFMQ Total	109 (16.9)	110 (16.7)	0.078	0.765	118 (17.7)	0.575	0.084
Observing	28.6 (4.63)	28.8 (4.78)	0.039	0.843	27.8 (3.80)	-0.118	0.479
Describing	23.4 (5.89)	23.8 (5.78)	0.063	0.734	25.7 (4.99)	0.363	0.200
Acting with Awareness	18.4 (4.55)	19.3 (4.84)	0.153	0.581	22.5 (4.03)	0.791	0.022*
Non-Judging	21.4 (7.10)	22.9 (8.03)	0.292	0.324	24.1 (7.70)	0.413	0.113
Non-Reactivity	18.4 (5.73)	19.8 (4.62)	0.241	0.367	20.1 (4.63)	0.323	0.222
<i>CAARMS</i>							
Total	44.07 (26.24)	37.29 (22.39)	-0.380	0.178	24.21 (20.40)	-0.840	0.008**
UTC Subscale	11.29 (9.770)	13.14 (11.38)	-0.320	0.270	05.64 (07.96)	-0.487	0.092
UTC Distress	40.36 (42.18)	28.14 (36.77)	-0.440	0.132	21.43 (34.94)	-0.573	0.051
NBI Subscale	11.86 (11.20)	06.79 (08.76)	-0.451	0.116	06.21 (10.01)	-0.468	0.104
NBI Distress	43.93 (31.39)	28.21 (33.32)	-0.493	0.095	28.93 (36.49)	-0.368	0.192
PA Subscale	11.57 (07.93)	09.57 (08.82)	-0.303	0.227	09.07 (09.23)	-0.418	0.142
PA Distress	46.07 (44.21)	37.14 (40.89)	-0.301	0.146	26.79 (35.71)	-0.656	0.029**
DOS Subscale	09.07 (07.12)	07.79 (05.75)	-0.244	0.385	03.29 (04.34)	-0.938	0.004**
DOS Distress	33.07 (25.42)	34.64 (31.83)	-0.085	0.765	17.86 (26.36)	-0.644	0.031**

Note: * $P < 0.05$, ** $P < 0.01$, bold = remained significant when Bonferroni was applied. UTC = usual thought content, NBI = non-bizarre ideas, PA = perceptual abnormalities, DOS = disorganised speech.

Table 3 continued: Means, standard deviations, effect sizes (Cohen's d) for all measures at pre-, post- and 6-week follow-up

Outcome Measure	T0 (pre)	T1 (post)	Effect	Sig.	T2 (6 wk)	Effect	Sig.
	Mean (SD)	Mean (SD)	Size		Mean (SD)	Size	
<i>Global Functioning</i>							
Role	5.29 (1.82)	06.71 (2.02)	1.164	0.000	06.17 (2.13)	1.013	0.002**
Social	6.21 (1.31)	07.64 (1.49)	1.319	0.000	07.79 (1.42)	1.559	0.000**
<i>BPRS</i>							
Anxiety/Depression	18.67 (4.23)	13.17 (5.04)	-1.352	0.021	07.67 (2.16)	-3.288	0.000**
Psychosis	11.83 (4.54)	07.33 (4.50)	-1.147	0.035	08.50 (4.42)	-0.847	0.093
Negative Symptoms	08.67 (2.94)	06.00 (2.53)	-0.904	0.116	04.83 (2.14)	-1.549	0.013**
Activation	06.83 (2.56)	05.00 (1.27)	-0.751	0.140	04.17 (0.41)	-1.098	0.043*
Total	63.17 (12.32)	43.67 (7.34)	-2.073	0.005	37.50 (6.25)	-2.196	0.003**
<i>DASS</i>							
Depression	37.43 (15.64)	30.29 (18.45)	-0.333	0.234	20.57 (10.97)	-1.159	0.001**
Anxiety	37.50 (17.38)	33.00 (14.38)	-0.390	0.204	27.83 (12.25)	-0.687	0.038*
Stress	35.71 (13.10)	32.29 (13.88)	-0.250	0.291	26.71 (10.48)	-0.769	0.013**
Total	119.45 (38.43)	93.45 (42.62)	-0.749	0.032	73.45 (25.20)	-1.405	0.000**
<i>FSCRS</i>							
Inadequate Self	33.86 (6.06)	31.71 (9.20)	-0.340	0.334	26.93 (8.28)	-1.142	0.001**
Reassuring Self	23.58 (7.04)	26.25 (8.95)	-0.313	0.258	25.67 (3.17)	0.283	0.343
Hated Self	15.86 (4.91)	14.00 (5.63)	-0.375	0.185	11.93 (5.12)	-1.005	0.002**
<i>Fear of Compassion</i>							
For Others	20.08 (09.91)	16.00 (08.35)	-0.389	0.241	18.50 (08.51)	0.303	0.665
From Others	32.40 (09.10)	32.27 (12.51)	-0.012	0.962	28.53 (10.62)	-0.282	0.204
For Self	32.53 (10.25)	33.07 (14.99)	0.040	0.880	28.73 (10.91)	-0.356	0.190
<i>Relationships Questionnaire</i>							
Secure	03.79 (2.46)	04.57 (1.51)	0.303	0.275	04.64 (1.45)	0.357	0.201
Fearful	05.93 (1.07)	04.79 (1.42)	-0.731	0.017	04.07 (1.77)	-0.900	0.005**
Pre-occupied	05.27 (1.75)	04.27 (1.49)	-0.798	0.008	03.08 (1.82)	-0.737	0.013**
Dismissing	03.93 (2.27)	04.07 (1.44)	0.058	0.847	03.79 (1.63)	-0.056	0.832

Note: * $P < 0.05$, ** $P < 0.01$, bold = remained significant when Bonferroni was applied

Table 4: Linear regression analysis for self-compassion and study variables

Outcome Measure	B	SEB	β	t	P
CAARMS Total	-12.50	04.92	-0.356	-02.54	0.015*
BPRS Total	-01.02	02.88	-0.060	-0.354	0.727
Functioning Role	00.48	00.44	0.167	01.09	0.279
Function Social	00.32	00.31	0.146	01.01	0.316
FSCRS IS	-08.76	01.14	-0.755	07.71	0.000*
FSCRS HS	-05.09	08.84	-0.675	06.04	0.000*
FSCRS RS	06.30	01.04	0.701	06.06	0.000*
FOC From Others	-08.67	01.98	-0.572	-04.39	0.000*
FOC For Others	-06.82	01.95	-0.502	-03.49	0.001*
FOC Self	-08.80	02.33	-0.514	-03.78	0.000*
DASS Total	-75.19	67.04	-0.176	-1.122	0.268
Relationships					
Secure	00.27	00.39	0.105	0.676	0.503
Fearful	-00.79	00.28	-0.368	-2.854	0.007*
Preoccupied	-00.83	00.34	-0.345	-2.417	0.020*
Dismissing	-00.01	00.39	-0.004	-0.026	0.979
FFMQ Total	18.41	02.57	0.780	07.18	0.000*

Note: * $P < 0.05$, IS = inadequate self, HS = hated self, RS = reassurance

The MAC-P program: A pilot study of a mindfulness and compassion program for youth with psychotic experiences

A group program for psychotic experiences

Tara Hickey

Southern Synergy, Monash University, Melbourne, Australia

University Centre for Rural Health, University of Sydney, Lismore, Australia

Jo Enticott

Southern Synergy, Monash University, Melbourne, Australia

Monash Centre for Health Research and Implementation, Monash University, Melbourne, Australia

Barnaby Nelson

Orygen – The National Centre of Excellence in Youth Mental Health, University of Melbourne, Melbourne, Australia

Graham Meadows

Southern Synergy, Monash University, Melbourne, Australia

Mental Health Program, Monash Health, Melbourne, Australia

School of Population and Global Health, University of Melbourne, Melbourne, Australia

Email address of corresponding author

tara.hickey@monash.edu