

**Results from a quasi-controlled trial of a "Coping with Voices"  
group. Part 2**

Author

Kay, Gordon, Kendall, Elizabeth, Slattery, Maddy, Scott, Justin, Gore-Jones, Victoria, Dark,  
Frances

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## Results from a quasi-controlled trial of a "Coping with Voices" group. Part 2

### Abstract

**Background:** This is the second of two papers that investigated the effectiveness of a group-based program known as 'Coping with Voices'. The first paper reported on the group facilitators experience of delivering the program. This second paper reports the findings from the participants.

**Method:** Of the 61 participants that gave informed consent to participate in the study 19 did not attend a group, so this provided a natural quasi-control group. The study compared pre and post primary measures for the 42 participants who attended a group. 29 group attendees also provided qualitative data. Secondary measures were measured longitudinally for all 61 participants. Individuals who participated in the program were compared to those individuals who did not. **Results:** For the 42 voice hearers who attended Coping with Voices, the quantifiable data showed a significant reduction in negative beliefs about voices, voice severity, distress about voices and the perceived power of the voices. Participant feedback was overwhelmingly positive. The secondary measures show a significant reduction in the number of hospital admissions and an improvement in basic life skills for group attendees versus non-attendees at 12 months follow up.

**Conclusions:** Overall, these findings suggest 'Coping with Voices' is feasible, acceptable and worthwhile.

### Keywords

Hearing voices groups; Hearing voices; auditory hallucinations; cognitive behaviour therapy for psychosis; integrative approaches.

## **Introduction**

This is the second of two papers that investigated the effectiveness of a group-based program for people with distressing voices. In the previous paper (Kay et al., 2021, in press) the theoretical framework under which this study is grounded is provided. Also, the program content, rationale, and method was described for a 10-session program that brings together the common elements of cognitive behavioural therapy (CBTp) with the knowledge and values of the peer led hearing voices network (HVN) known as Coping with Voices.

This paper reports the participants perspectives and examines the hypothesis that participating in Coping with Voices would result in a reduction in negative beliefs about voices, voice severity, distress about voices and perceived power of the voices and secondly that those who participated would have lower mental health related problems and a lower number of acute inpatient stays at follow up compared to those who do not participate.

## **Method**

The Coping with Voices program was delivered in Brisbane, Australia. Participant data was collected between 2013 and 2016, groups were run at either community-based clinics or residential rehabilitation units on a weekly basis for 10 weeks for approximately 1.5 hours per week. This study received ethical clearance from Queensland Health (Ref No: HREC/13/QPAH/80).

### ***Participants and study design***

Eligibility for participation in the Coping with Voices program was relevantly transdiagnostic (Thomas et al., 2014) and included that: (1) participants were case managed consumers of the adult Mental Health Service; (2) they experienced distressing voices; and (3) they were willing to attend group sessions. A 20-minute presentation was given to the treating teams about the research aims, eligibility regarding group membership and

component parts of therapy. Posters and information handouts were provided to the clinical teams and staff were asked to give potential participants a handout and discuss the details of the group.

There were 156 participant referrals to the study by the adult Mental Health Service community and residential rehabilitation teams. Ninety-five were excluded because either they did not meet the eligibility criteria, could not be contacted, declined to meet the researchers for screening or declined to take part in the study. Of the remaining 61 participants, 42 completed pre and post primary measures and attended the Coping with Voices program.

A total of 29 of the 42 participants who attended Coping with Voices provided qualitative feedback.

The nineteen that did not attend the group sessions provided a natural quasi-control group. Although this was not an ideal control group as participants were not randomly allocated to an intervention or control group, it was a convenient quasi experimental design method for obtaining a control group. Secondary outcome measures for individuals who consented to participate in the Coping with Voices program and who went on to complete the program (intervention group) were compared to individuals who consented to participate but did not attend a program during the course of this study (quasi-control group).

For this study, the intervention and control groups were considered comparable at baseline. All participants were case managed consumers of a statutory Mental Health Service in South East Queensland; they experienced hearing voices and were willing to engage in a group program at the time of consent. All participants received their usual treatment throughout the study. This study involved a sample of complex service users who continue to hear distressing voices, despite long term input from specialist multi-disciplinary mental health teams. Thus, it is likely that any reported improvements can be attributed to the

intervention rather than treatment as usual. Reasons for non-attendance appeared to reflect a range of factors, such as they declined to attend, moved out of area, inpatient hospital admissions, discharges to primary care and the availability of transport or time to attend (see flow diagram Figure 1).

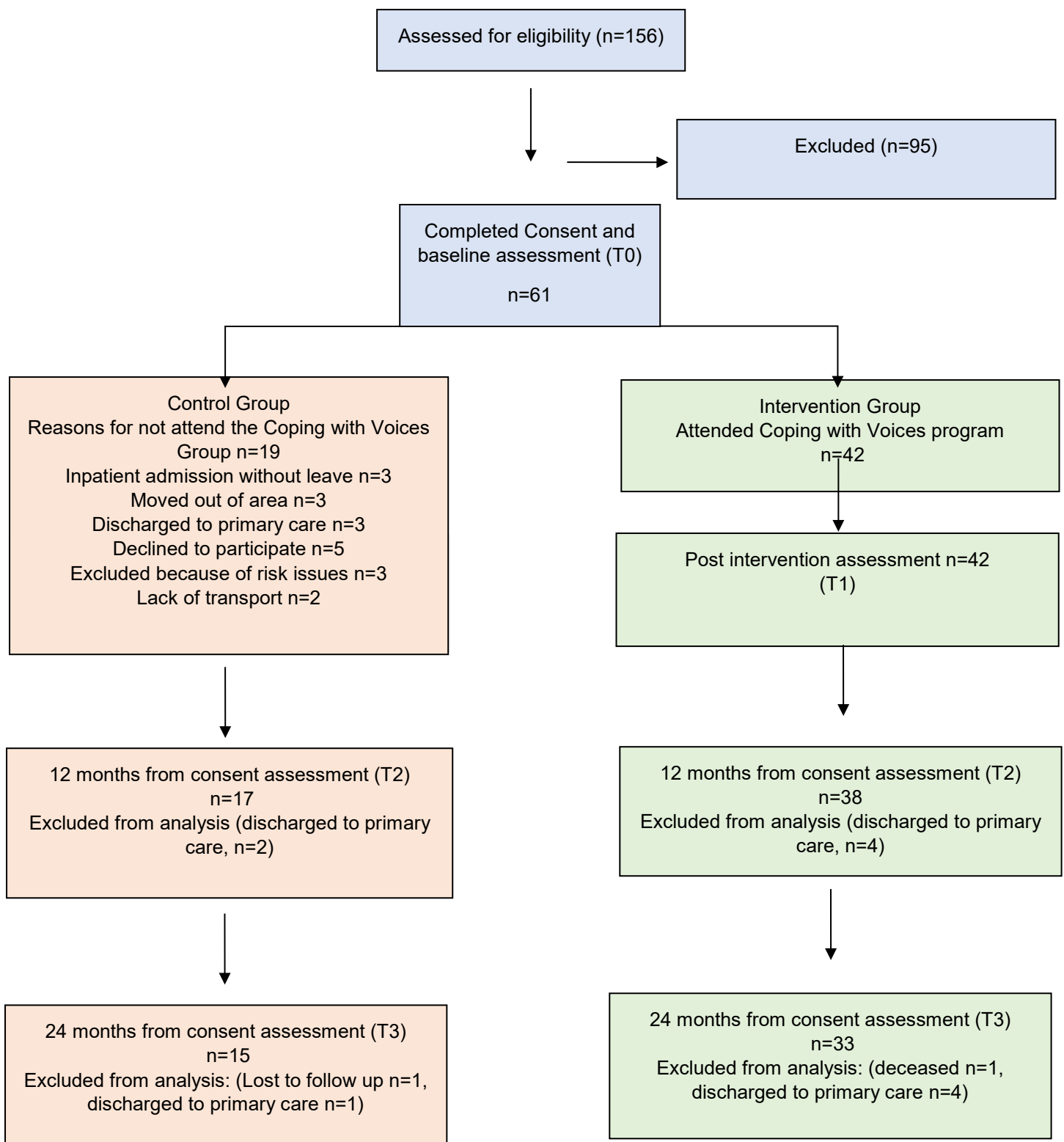


Figure 1. Research Flow Diagram of participants progression through the study.

Note: Time 0 = at time of consent; Time 1 = post intervention; Time 2 = 12 months from consent; Time 3 = 24 months from consent  
 T0 = Demographics, number of previous psychiatric Hospital admissions, PSYRATS, VPDS, BAVQ-R, HoNOS, LSP,  
 T1 = PSYRATS, VPDS, BAVQ-R; Coping with Voices Group Satisfaction Questionnaire  
 T2 = Number of psychiatric Hospital admissions between Time 0 and Time 2, HoNOS, LSP  
 T3 = Number of psychiatric Hospital admissions between Time 2 and Time 3, HoNOS, LSP

## *Measures*

The following three primary measures were completed by the 42 participants who completed Coping with Voices at consent (Time 0) and post-intervention (Time 1). The primary measures were selected to address our first hypothesis of this study on the basis of their demonstrated sensitivity to change and overall sound psychometric properties. If there is no effect on these outcomes then this implies the intervention is ineffective.

The *Psychotic Symptoms Rating Scale (PSYRATS)*; Haddock et al., 1999) is an 11-item scale, which assesses the frequency, duration, severity, loudness, location, negative content and controllability of voices, intensity of distress and beliefs about origin of voices and disruption. The PSYRATS has been found to have strong inter-rater reliability ( $r = >.9$ ), (Haddock et al., 1999), test-retest reliability (0.55 to 0.74) and good validity (0.63 to 0.76), (Drake et al., 2006; 2007). It was also found to be a reliable measure in this study (Chronbach's alpha = 0.86).

The *Beliefs about Voices Questionnaire – Revised (BAVQ-R)*; Chadwick et al., 2000) is a self-report measure of a person's beliefs, emotions and behaviour in response to auditory hallucinations. The 35-item questionnaire forms five sub-scales: three concerning beliefs about the dominant voice (malevolence, benevolence and omnipotence), and two concerning emotional and behavioural reactions (resistance and engagement). Omnipotence scores have been found to be associated with compliance with command hallucinations (Shawyer et al., 2003). Omnipotence and malevolence scores have been found to be related to distress (Hacker et al., 2008). Omnipotence, malevolence and resistance have been found to be associated with depression, hopelessness and suicidal ideation (Simms et al., 2007). The subscales demonstrate good psychometric properties. The BAVQ shows acceptable levels of construct validity, there is a strong relationship between malevolence and resistance ( $r = 0.68$ ,  $df = 69$ ,  $p < .01$ ) and benevolence

and engagement ( $r = 0.80$ ,  $df = 69$ ,  $p < 0.1$ ), with all other correlations between these subscales being strongly negative (Chadwick et al., 2000). The data from this study shows there was a positive, strong and significant relationship between omnipotence and malevolence ( $r = .61$ ,  $n = 61$ ,  $P < 0.001$ ), malevolence and resistance ( $r = .51$ ,  $n = 61$ ,  $P < 0.000$ ), omnipotence and resistance ( $r = .44$ ,  $n = 61$ ,  $P < 0.001$ ) and between benevolence and engagement ( $r = .76$ ,  $n = 61$ ,  $P < 0.001$ ). The subscales of malevolence and engagement ( $r = -.36$ ,  $n = 61$ ,  $P < 0.004$ ) and malevolence and benevolence ( $r = -.35$ ,  $n = 61$ ,  $P < 0.005$ ) had a negative relationship. The Chronbach's alphas for malevolence (0.86), benevolence (0.77), omnipotence (0.68), resistance (0.81) and engagement (0.80) show acceptable levels of reliability.

The *Voice Power Differential Scale* (Birchwood et al., 2000) is a brief and reliable measure that was developed to measure the perceived relative power differential between the voice and the voice hearer with regard to the components of power, including strength, confidence, respect, ability to inflict harm, superiority, and knowledge. The scale has good internal reliability (Cronbach's alpha = 0.85) and re-test reliability ( $r = 0.82$ ; Birchwood et al., 2000). It was found to be a reliable measure in this study (Chronbach's alpha = 0.73).

The three secondary measures were selected for hypothesis two of this study as a convenient way of collecting complimentary data on the basis of their ease of access: The Health of the Nation Outcome Scales (HoNOS, Wing et al., 1998), Life Skills profile (LSP-16, Rosen et al., 1989, Parker et al., 1991) and hospitalisation data are collected routinely within all public mental health services in Australia. The HoNOS is a set of 12 scales measuring mental health-related problems in the domains of behaviour, symptoms, impairment, and social functioning. The LSP-16 assesses a consumer's abilities with respect to basic life skills. Its focus is on the consumer's general functioning and disability covering 16 items over four broad domains: withdrawal, antisocial behaviour, self-care and



compliance. Data was collected from the mental health service electronic patient record system at consent (Time 0), 12 months from consent (Time 2), and again at 24 months from consent (Time 3).

A *Coping with Voices Overall Satisfaction* questionnaire was also developed which participants were to complete after their final session. The questionnaire consists of four items: How would you rate your experience of attending the hearing voices group? Has attending the hearing voices group helped you to understand more about your voices? Has attending the hearing voices group helped you learn new ways to cope with your voices, and Has attending the hearing voices group helped to reduce the distress you may have experienced related to your voices? Participants are asked to rate their responses using a Likert scale. Participants also completed two open ended questions: Do you have any comments on your experience of attending the hearing voices group? and Do you have any suggestions for ways the group can be improved?

### ***Data analysis overview***

Statistical power was calculated based on previous group-based studies that used a sample size of 65 and showed large effect sizes for beliefs and distress associated with voices (Penn et al., 2009; Pinkham et al., 2004). Using this as a guideline a total sample of 61 participants were recruited.

Participant data was analysed using the Statistical Package for Social Sciences (SPSS version 26, 2019). Non-parametric (Wilcoxon Signed Rank Test) inferential procedures were conducted on the primary measures to determine if the amount of change seen on each measure post intervention (Time 1) significantly differed from pre intervention (Time 0) for the intervention cohort only.

A one way between groups analysis of covariance was conducted to compare intervention with control using the secondary measures; at T2 (12 months from consent) and

T3 (24 months from consent). Corresponding baseline scores (Time 0) were used as covariates in the ANCOVA and treatment group (Intervention or control) were treated as fixed factors. All effect sizes are interpreted in line with Cohen's (1988) criteria.

The information drawn from the HVG Overall Satisfaction Questionnaire, was entered into IBM SPSS statistics version 26 for descriptive and inferential analysis. All of the qualitative data was descriptively analysed using thematic analysis. The objective of thematic analysis is to identify patterns within the data, and to organise these into a thematic structure. All of the qualitative data analysis adhered to the Braun and Clarke (2006) six phase protocol, and themes are supported with multiple quotes. To minimise researcher bias, multiple authors were involved in the planning, data collection, analysis, and publication phases of this study.

## **Results**

### ***Baseline characteristics.***

A comparison between baseline quasi control and intervention indicated that there were no significant differences in socio-demographic details between the 42 participants who completed Coping with Voices and the 19 participants that did not. Socio-demographic details for the 61 participants are provided in Table 1. Data was available for 42 male and 19 female participants, over half (55.7%) of the participants had a history of five or more psychiatric Hospital admissions. Gens X and Y had around a 37% chance of not completing the study compared to only 8% for Gen Boomer. These differences were not statistically significant (Liner-by Linear Association;  $p = 0.121$ ). The youngest participant was 18 and the oldest was 68, there were no statistically significant differences between age on any of the primary measures. Forty-six of the participants were community based and fifteen were living in supported residential rehabilitation units. Over 85% of participants were diagnosed with a psychotic disorder.

**Table 1***Baseline Demographic information*

Variable n (%)		Total (n= 61)	Intervention (n=42)	Control (n=19)
Sex	Male	42 (69%)	25 (59.5%)	17 (40.5%)
	Female	19 (31%)	17 (89.5%)	2 (10.5%)
Age	Gen Y	18 (29.5%)	11 (61.1%)	7 (38.9%)
	Gen X	30 (49.2%)	19 (63.3%)	11 (36.7%)
	Gen Boom	12 (19.7%)	11 (91.7%)	1 (8.3%)
	Missing	1 (1.6%)		
Diagnosis	Psychosis spectrum diagnosis	52 (85.5%)	37 (71.2%)	15 (28.8%)
	Mood disorder	5 (8.2%)	1 (20%)	4 (80%)
	Borderline Personality Disorder	4 (6.6%)	4 (100%)	0 (0.0%)
	Community clinics	46 (75.4%)	30 (65.2%)	16 (34.8%)
Location where the Coping with Voices group was held	Continuing Care Units	15 (24.6%)	12 (80%)	3 (20%)
	Never	4 (6.6%)	3 (75%)	1 (25%)
Previous Hospital admissions	Between one and five times	23 (37.7%)	15 (65.2%)	8 (34.8%)
	More than five times	34 (55.7%)	24 (70.6%)	10 (29.4%)
	Primary	3 (4.9%)	3 (100%)	0 (0.00%)
Highest level of Education	Junior Secondary (year 10)	37 (60.7%)	24 (64.9%)	13 (35.1%)
	Senior Secondary (year 12)	16 (26.2%)	11 (68.8%)	5 (31.3%)
	Diploma	3 (4.9%)	2 (66.7%)	1 (33.3%)
	Degree level	2 (3.3%)	2 (100%)	0 (0.00%)
	Employment	Employed Part time	5 (8.2%)	4 (80%)
Source of Income	Long Term Unemployed	56 (91.8)	38 (67.9%)	18 (32.1%)
	Employee (cash income)	2 (3.3%)	1 (50%)	1 (50%)
	Newstart Allowance Disability Support Pension	22 (36.1%)	16 (72.7%)	6 (27.3%)
Marital status	Disability Support Pension	37 (60.7%)	25 (67.6%)	12 (32.4%)
	Never Married	56 (91.8%)	39 (69.6%)	17 (30.4%)
	Married	1 (1.6%)	0 (0.00%)	1 (100%)
Drug or alcohol use	Divorced	4 (6.6%)	3 (75%)	1 (25%)
	No problem	38 (62.3%)	25 (65.8%)	13 (34.2%)

	Some over-indulgence	9 (14.8%)	5 (55.6%)	4 (44.4%)
	Loss of control but not seriously addicted	5 (8.2%)	4 (80%)	1 (20%)
	Marked craving or dependence	9 (14.8%)	8 (88.9%)	1 (11.1%)
Suicide	Never	10 (16.4%)	7 (70%)	3 (30%)
	Ideation	26 (42.6%)	19 (73.1%)	7 (26.9%)
	Serious attempt	25 (41%)	16 (64%)	9 (36%)

*Note:* Intervention = Attended the Coping with Voice group program; Control = Did Not Attend the Coping with Voice group program. Psychosis spectrum diagnosis includes schizophrenia, paranoid schizophrenia, schizoaffective disorder and first episode psychosis; mood disorder includes depression and bipolar disorder. Continuing Care Units = participants who are living in residential rehabilitation. Community clinics = participants who are living in a range of community settings. Gen Y = born between 1980 and 1994; Gen X = born between 1965 and 1979 and Gen Boom = born between 1944 and 1964.

According to clinical risk assessments just under half of all participants had made a serious suicide attempt (41%) and HoNOS scores suggest that almost 15% of participants were dependant on alcohol or drugs. Over 90% of participants were long term unemployed and almost all were receiving welfare benefits (Disability Support Pension, 60.7%, Newstart Allowance, 36.1%). Over half had junior secondary recorded as their highest level of education (60.7%) and only two of the sixty-one participants were educated at degree level (3.3%).

Baseline clinical characteristics are reported in table 2. A comparison of clinical characteristics between baseline quasi control and intervention indicated that there was no significant difference in acuity, basic life skills or mental health related problems. The only measure that was notable was omnipotence with a difference in scores between intervention at baseline (Median = 9.67) and quasi control at baseline (Median = 7.00). Notably, omnipotence is associated with greater levels of distress (Chadwick et al., 2000) and the people who are most distressed by hearing voices are disproportionately likely to have experienced childhood trauma including being bullied and abused (Read et al., 2005). So, it is

possible that the voice hearers in this study who have early life experiences of trauma were more willing to seek out help and engage in therapy than those who did not.

**Table 2**

*Baseline clinical characteristics*

	Intervention	Control	P	d
Measure				
HoNOS total score Mean (s.d.)	10.98 (5.86) n=42	9.47 (5.048) n=19	.39	.28
HoNOS item 6 Hallucinations and delusions Mean (s.d.)	2.19 (.99) n=42	2.21 (.63) n=19	.94	.02
LSP Mean (s.d.)	16.21 (24.18) n=42	19.79 (28.59) n=19	.615	.14
Hospitalisations Mean (s.d.)	1.50 (.63) n=42	1.47 (.612) n=19	.88	.048
PSYRATS-AH Total Score Mean (s.d.)	26.10 (8.30) n=41	24.28 (8.91) n=18	.45	.21
PSYRATS amount of distress Mean (s.d.)	2.54 (1.24) n=41	2.44 (1.39) n=18	.80	.08
PSYRATS intensity of distress Mean (s.d.)	2.49 (1.21) n=41	2.06 (1.21) n=18	.21	.39
BAVQ-R Malevolence	10.31 (4.76) n=42	8.68 (4.80) n=19	.22	.34
BAVQ-R Benevolence	3.69 (4.08) n=42	4.16 (3.17) n=19	.66	.13
BAVQ-R Omnipotence	9.67 (4.18) n=42	7.00 (4.05) n=19	.02*	.65
BAVQ-R Resistance	17.38 (5.74) n=42	15.53 (6.54) n=19	.27	.30
BAVQ-R Engagement	5.93 (5.23) n=42	4.68 (3.97) n=19	.36	.27
VPDS	21.43 (5.71) n=40	19.00 (4.03) n=17	.19	.49

*Note:* Intervention = Attended the Coping with Voice group program; Control = Did Not Attend the Coping with Voice group program; BAVQ-R = Beliefs about Voices Questionnaire – the revised edition; PSYRATS-AH = Psychotic Symptoms Rating Scale, Auditory Hallucinations Rating Scale; VPDS = Voice Power Differential Scale; HoNOS = The Health of the Nation Outcome Scales; LSP= Life Skills Profile; M=Means; SD = Standard Deviation; MD= Means Difference; P= probability value Sig.(2-tailed); d = standardised effect using Cohen’s d. (1988) criteria = small  $\geq 0.2$ , medium  $\geq 0.5$ , and a large effect  $\geq 0.8$ ).

**Primary outcome measures**

Findings are largely in line with our predictions. Table 3 presents the non-parametric Wilcoxon Signed-Rank test results. The BAVQ-R subscales show there were statistically significant decreases in malevolence, omnipotence and resistance scores from pre to post intervention and statistically significant increases in engagement and benevolence scores. There was a statistically significant reduction in the total PSYRATS-AH score and a decrease in the total VPDS score that is trending towards statistical significance. Engagement; there was an average 1-point increase with 10% increasing over 5 points. This increase was statistically significant ( $p = .032$ ). Resistance; there was an average 2-point decrease with 21% having a decrease of over 5 points. This decrease was highly statistically significant ( $p = .005$ ). Omnipotence; there was an average decrease of 2 points with 16% having a decrease of over 5 points. This decrease was statistically significant ( $p = .014$ ). Malevolence; there was an average decrease of 2.5 points with 25% having a decrease of over 5 points. This decrease was highly statistically significant ( $p < .001$ ). Benevolence; there was an average increase of 1 point with 16% having an increase of over 5 points. This increase was statistically significant ( $p = .015$ ). VPDS; There was an average decrease of 2 points with 16% having a decrease of over 5 points. This decrease has a trend towards statistical significance ( $p = .062$ ). PSYRATS-H. There was an average decrease of 5 points with 34% having a decrease of more than 5 points. This decrease was highly statistically significant ( $p < .001$ ).

**Table 3**

*The amount of change seen on each measure from pre-intervention (Time 0) to post-intervention (Time 1) using the Wilcoxon Signed Rank Test*

	N	Minimum	Median	Maximum	Std. Deviation	z	p	r
BAVQ-R	4	-8.00	1.000	14.00	4.32576	-	P=0.03	0.3
Engagement	0		0			2.15	2*	4
BAVQ-R	4	-18.00	-	10.00	4.95906	-	P=0.05	0.4

Resistance	0		2.000			2.8	*	4
			0			1		
BAVQ-R	4	-10.00	-	8.00	4.14663	-	P=0.01	0.3
Omnipotence	2		2.000			2.4	4*	9
			0			6		
BAVQ-R	4	-12.00	-	4.00	3.89116	-	p <	0.6
Malevolence	2		2.500			3.9	0.001**	1
			0			6		
BAVQ-R	4	-7.00	1.000	12.00	4.42803	-	P=0.01	0.3
Benevolence	2		0			2.4	5*	6
						3		
VPDS	3	-11.00	-	19.00	5.57334	-	P=0.06	0.3
	9		2.000			1.8	2	0
			0			7		
PSYRATS	4	-20.00	-	10.00	6.79437	-	p <	0.6
-AH	0		5.000			4.0	0.001**	3
			0			1		

Notes: \* $p < .05$ , \*\* $p < .01$

Effect size: small = 0.1 - 0.30, medium 0.30 – 0.50 and large 0.50 and above.

### ***Secondary outcome measures***

Table 4 shows the mean scores and standard deviations of HoNOS scores, LSP scores and hospitalisation data at each time point. There was very little difference in the mean HoNOS scores across time accordingly the ratio of explained variance to unexplained variance ( $F$  value) and the ratio of variance associated with an effect, plus that effect and its associated error variance (partial eta squared) were low. After the baseline (Time 0) scores were controlled for there was no significant difference between the two intervention groups in HoNOS scores at T2,  $f(1,58) = .000$ ,  $p = 0.99$ , partial eta squared = .000 or HoNOS scores at T3  $f(1, 58) = .003$ ,  $p = .96$ , partial eta squared = .000. The null hypothesis is therefore accepted: there is no statistically significant difference between the HoNOS scores across time.

There was a significant difference between the two groups in LSP scores at T2,  $f(1,58) = 5.208$ ,  $p = .026$ , the effect size is small as indicated by a partial eta squared value of

.08 and between the two groups in the number of Hospital admissions at T2,  $f(1,58) = 4.05$ ,  $p=.05$ , the effect size is small as indicated by a partial eta squared value of .07.

**Table 4**

*Mean scores and standard deviations of secondary measures at each time point.*

	Time 0 Mean (SD)	Time 2 Mean (SD)	Time 3 Mean (SD)
HoNOS			
Intervention n=42	10.98 (5.86)	18.38 (27.33)	23.98 (34.42)
control n=19	9.47 (5.05)	17.84 (29.27)	22.89 (34.48)
LSP			
Intervention n=42	16.21 (24.18)	17.59 (27.69)	28.93 (37.46)
Control n=19	19.79 (28.59)	38.78 (42.41)	42.16 (44.96)
Hospitalisations			
Intervention n=42	1.50 (.63)	0.24 (0.48)	0.38 (0.58)
Control n=19	1.47 (.61)	0.68 (1.25)	0.74 (1.05)

*Note:* HoNOS = The Health of the Nation Outcome Scales; LSP = Life Skills Profile; Hospitalisations = the number of psychiatric admissions; M = Means; SD = Standard Deviation.

Time 0 = time of consent, T2 = 12 months from consent, T3 = 24 months from consent.

### ***Service user satisfaction***

Twenty-nine (69.05%) of the forty-two participants who attended Coping with Voices completed the overall satisfaction questionnaire. Table 5 shows almost all of the participants reported benefit from across all of the items, with only one person stating that attending the group was not helpful. Over half (58.6%) were of the opinion that attending the group helped them understand more about voices and helped them learn new ways to cope.



**Table 5***Results from the participant overall satisfaction questionnaire (N = 29)*

	Fair	Good	Above average	Excellent
How would you rate your experience attending the hearing voices group?	3.4%	20.7%	20.7%	55.2%
	No, I don't think so	Somewhat	Yes, I think so	Yes definitely
Has attending the hearing voices group helped you understand more about your voices?	3.4%	13.8%	24.2%	58.6%
Has attending the hearing voices group helped you to learn new ways to cope with your voices?	0%	24.2%	17.2%	58.6%
Has attending the hearing voices group helped you to reduce the distress you may have experienced related to your voices?	3.4%	13.8%	34.5%	48.3%

***Participant feedback***

Thematic analysis resulted in two superordinate themes: the importance of forming a connection with other voice hearers, and developing an understanding of how to cope with hearing voices. Overall participants valued meeting other voice hearers, they felt it was useful to realise others heard voices and to have the opportunity to discuss the social stigma associated with hearing voices. They used the groups to discuss how alone they had felt with the experience of voice hearing and participants emphasised the importance of social support from the group.

### ***Connecting with other voice hearers***

*“If you are confused, scared, going through a rough time hearing voices then you should come to this group. We’ve spoken to several people who have come up with incredible strategies to help them. If you would like to experience this, come along to the group”.*

*“Sharing experience with others in the same position”*

*“Got to know other people and understand that others are dealing with similar stuff”*

*“Very helpful to find people with same voices as me and how they deal with them”*

*“Learned more about others. At first, I thought I was the only one. Meeting others has given me hope. Talking and listening to others has given me hope”,*

*“Helped, where I thought I was the only one going through what I’m going through, I found out otherwise”,*

*“I found it very interesting listening to when it started for most people”, “Listening to others and what they are going through”*

*“I found that attending the group helped heaps with support, understanding, and inspiration”.*

### ***Developing an understanding of how to cope with hearing voices***

*“It was good to be able to hear of new ideas and ways to cope. Hearing others’ stories helped”.*

*“It’s freeing to be able to talk to people”*

*“looking at thought patterns and how to deal with the thoughts”*

*“I found I used strategies that I never thought I used”*

*“mindfulness is useful for anxiety”*

*“very insightful for using and enforcing physical activity and social contact as strategies”*

*“The circle ‘I must be getting stressed’, I have an ability to know when I’m run down”.*

*“It was good to be able to hear of new ideas and ways to cope”*

*“discussion about moods and how they affect voices”*

*“good to hear and identify warning signs”*

*“made it possible to believe that voices can be challenged and beliefs and anxiety weakened”*

*“Helpful with challenging voices, the strategies that are given”*

## **Discussion**

This study examined the hypothesis that participating in a Coping with Voices group - based program would result in a reduction in negative beliefs about voices, voice severity, distress about voices and perceived power of the voices and secondly that those who participated would have lower mental health related problems and a lower number of acute inpatient stays at follow up compared to those who do not participate. We also explored the perceptions of the participants who attended the group.

Encouragingly the participants feedback suggests attending Coping with Voices was helpful. Group members learned from each other, they felt understood and listened too. They shared and explored different ways of coping, realised they were not alone and regained some control through solidarity. These qualitative results are consistent with recent studies e.g. (Hornstein et al 2021; Longden et al., 2018) and echo the findings from our first paper (Kay et al., 2021 in press) that found group facilitators believed Coping with Voices to be useful and effective. Notably, these themes are harmonious with the guiding principles of the Hearing Voices Movement (Dillon and Hornstein., 2013).

The quantitative analyses suggest that the experience of hearing voices does change in the direction predicted. We found clinically significant changes across the primary measures which is consistent with other studies that have shown positive effects of group intervention on distressing voices (Penn et al., 2009; Peters et al., 2010).

The secondary measures show clinically significant changes between group effect in favour of the intervention group on the number of hospitalisations and basic life skills scores at 12 months follow up. In this regard, the findings are somewhat consistent with similar quantitative studies that also found improvements were maintained at 12 months follow up (Penn et al., 2009; Peters et al., 2010; Sensky et al., 2000). However, these results are moderated by the fact that effects on the HoNOS were small and non-significant and there were no significant changes between group effect on any of the secondary measures at 24 months follow up. Speculatively, this suggest that participants who received Coping with Voices learned skills to manage distressing voices, which they were able to use for the first 12 months, after Coping with Voices had ended.

These results are not consistent with other large scale hearing voices group studies that found no clear improvements in quantifiable outcome measures (Wykes 2005). A possible explanation for the conflicting results is that hearing voices groups are not homogeneous; therefore, Coping with Voices may have differed from previous studies in a number of ways. The first would be that our facilitators received additional training by experts by experience (Kay et al., 2021 in press) in an effort to uphold the values of the hearing voices movement. Second some of the group components and activities relied on knowledge created within the hearing voices movement. Third the knowledge and values of the hearing voices movement underpinned our program in a conscious attempt to improve the delivery of group-based CBT techniques. Finally, unlike European samples, the Australian participants in this study had limited prior exposure of CBT-type interventions, and restricted

contact with the peer led hearing voices movement. Any of these variables may have accounted for the different findings across these studies. Therefore, the specificity of CBT as a primary mechanism of change is unclear.

### ***Limitations***

There are some limitations to this study. Although the lack of random assignment for baseline comparisons may appear to be the most obvious limitation, it should be noted that the intervention and control groups are comparable at baseline. Additionally, most of the participants are long term users of mental health services therefore the reported improvements can be attributed to the intervention rather than treatment as usual. However, we remain cautious about these initial results, particularly regarding the duration of the effects of the intervention given that we only analysed the primary measures post the group intervention. A future randomised control trial with longer follow-ups using the primary measures is recommended.

### ***Clinical Implications***

This study provides a rich understanding of a group-based intervention on individuals with distressing voices and contributes to a growing body of evidence that suggests low intensity group-based approaches that are specifically developed for distressing voices can be of benefit. Our findings suggest Coping with Voices is acceptable, feasible, and effective when delivered by frontline mental health workers in their regular psychiatric clinical setting.

### ***Conclusion***

Overall, these findings suggest that Coping with Voices has high participant satisfaction and positive benefits for people contending with distressing voices. Coping with Voices warrants further investigation.

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