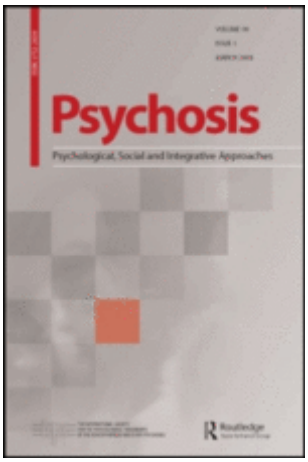
Making sense of voices: a case series



Making Sense of Voices: A Case Series

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Abstract:	The current evidence-base for the psychological treatment of distressing voices indicates the need for further clinical development. The Maastricht approach (also known as Making Sense of Voices) is popular within sections of the Hearing Voices Movement, but its clinical effectiveness has not been systematically evaluated. The aim of the approach is to develop a better understanding of the role of the voice, in part through opening a dialogue between the voice hearer and the voice. The current study was a (N=15) case series adopting a concurrent multiple baseline design. The Maastricht approach was offered for up to 9-months. The main outcome, weekly voice-related distress ratings, was not statistically significant during intervention or follow-up, although the effect size was in the moderate range. The PSYRATS Hallucination scale was associated with a large effect size both at the end of treatment, and after a 3-month follow-up period, although again the effect did not reach statistical significance. The results suggest further evaluation of the approach is warranted. However, given the large variance in individual participant outcome, it may be that a better understanding of response profiles is required before conducting a definitive randomised controlled trial.

Abstract

The current evidence-base for the psychological treatment of distressing voices indicates the need for further clinical development. The Maastricht approach (also known as Making Sense of Voices) is popular within sections of the Hearing Voices Movement, but its clinical effectiveness has not been systematically evaluated. The aim of the approach is to develop a better understanding of the role of the voice, in part through opening a dialogue between the voice hearer and the voice. The current study was a (N=15) case series adopting a concurrent multiple baseline design. The Maastricht approach was offered for up to 9-months. The main outcome, weekly voice-related distress ratings, was not statistically significant during intervention or follow-up, although the effect size was in the moderate range. The PSYRATS Hallucination scale was associated with a large effect size both at the end of treatment, and after a 3-month follow-up period, although again the effect did not reach statistical significance. The results suggest further evaluation of the approach is warranted. However, given the large variance in individual participant outcome, it may be that a better understanding of response profiles is required before conducting a definitive randomised controlled trial.

Keywords: auditory hallucinations, psychotherapy, Hearing Voices Movement, Experience Focussed Counselling, voice dialogue, talking with voices, Making Sense of Voices.

Introduction

The prevalence of hallucinatory experience within the general population has been estimated at 6% (Linscott & van Os, 2013). Within the psychiatric system, voice-hearing experiences are reported to have a lifetime prevalence of around 64 – 80 % in people diagnosed with schizophrenia spectrum disorders (McCarthy-Jones et al., 2017). Voice hearing is also associated with a range of other mental health problems, including bipolar disorder, depression, personality disorders, posttraumatic stress disorder (PTSD) and dissociative identity disorder, as well as with individuals without a history of mental health problems (Baumeister, Sedgwick, Howes & Peters, 2017).

The dominant perspective within which voices are understood remains the bio-medical model, in which voice hearing is perceived as a symptom of an underlying illness, such as schizophrenia. Within this model, the content of the voices is considered of limited relevance, and the primary treatment strategy is to remove, or to reduce, the voice hearing experience via pharmaceutical intervention. However, since the conception of this approach in the 1950s, there has been negligible development in the effectiveness of anti-psychotic medication (Jones et al., 2006; Leucht et al., 2017). There is also an increased awareness of the dangers associated with the long-term prophylactic use of these drugs including reduced cortical volume and a potential for dopamine supersensitivity (Murray et al., 2016). Also, it is now clear that many people diagnosed with schizophrenia recover without the use of neuroleptic medication (Harrow, & Faull, 2014). Furthermore, the effectiveness of neuroleptics has been shown to be reduced in individuals with a history of trauma (Hassan & De Luca, 2015), a finding that is particularly relevant to voice hearing, which is associated with a high level of exposure to traumatic events (Varese et al. 2012).

Recent years have seen cognitive behavioural therapy (CBT) become an established treatment for schizophrenia (NICE, 2009). However, a recent meta-analysis of individual

formulation-based CBT for schizophrenia showed that the outcome for voice hearing was a small to moderate effect size (van der Gaag, Valmaggia & Smit, 2014). There is, therefore, considerable room for improvement when working with this phenomenon.

There has also been a recent increase in the awareness of the high prevalence of traumatic life events experienced by people who have been diagnosed with schizophrenia (e.g. Matheson, Shepherd, Pinchbeck, Laurens & Carr, 2013). The prevalence of PTSD has been estimated to be approximately 13% within this group (Achim et al., 2011). This co-morbid presentation is associated with a poor prognosis and increased use of healthcare (Switzer et al., 1999). Recent literature highlights the link between childhood sexual abuse and hearing voices (McCarthy-Jones, 2011), although the theoretical understanding of this relationship remains in its infancy. Within the CBT for voices framework, most attention is paid to the beliefs that an individual has about their voice hearing experience. However, it has been noted that the relationship a voice-hearer has with their voice(s) may be based on the same underlying mechanisms that influence that individuals relationships within other people in their lives (Paulik, 2012). Therefore, in an effort to improve outcomes, recent developments within the field have put the relationship between a voice hearer and their voice at the forefront (Hayward, Berry, McCarthy-Jones, Strauss &Thomas, 2013; Craig et al., 2018). It is of note that these new approaches encourage assertive communication from the voice hearer to their voice(s).

Clinicians often refer to a voice being linked to a life event, but that the content and communication has 'evolved' beyond the specific event which is considered to be the trigger. The premise that voices 'arrive' in peoples' lives as part of a meaningful reaction to unresolved traumatic life events, and that voice content is relevant and should be engaged with (including the use of active 'Voice Dialoguing'), underlies an approach put forward by Marius Romme and Sandra Escher (2000) often called the 'Maastricht Approach.' Devised in

collaboration with voice hearers, the framework has become established within the international Hearing Voices Movement (Corstens, Longden, McCarthy-Jones, Waddingham & Neil, 2014), although it has largely remained beyond academic investigation and outside of mainstream clinical services. Defining features of the approach are its emphasis on depathologising the voice hearing experience, its transdiagnostic scope, and the value it places on exploring the content, potential meaning and intentions of the voices (Corstens et al., 2014; Longden, 2017).

The Maastricht approach is also referred to as 'Making Sense of Voices' (MsV; Romme & Escher, 2000) and Experience Focussed Counselling (Schnackenberg, Fleming & Martin, 2017; Schnackenberg, Fleming & Martin, 2018b; Schnackenberg, Walker, Fleming & Martin, 2018a). The version adopted within the current study consists of three phases of work. First, an engagement phase and a discussion of basic coping strategies that may help with distressing voices. Second, an assessment phase occurs in which the voice content and characteristics are collaboratively explored using a form of psychological formulation known as 'the construct'. The third phase involves the development of a new voice-hearer led understanding of the voices, possibly in relation to life events. Subsequent work, based on the new understanding, is aimed at supporting the voice hearer to feel less threatened by the voice hearing experience and to adopt a less submissive position. The approach also includes 'Voice Dialoguing' techniques in which the voice hearer is encouraged to engage in an active dialogue with their voices. The aim is to resolve conflict and develop a new understanding of the meaning behind the voice content (Corstens, Longden & May, 2012).

The MsV approach is highly regarded within the service user movement, and offers a new perspective for helping individuals come to terms with voice hearing experiences who may not have found the support they need within mainstream psychiatric services (Longden, Corstens & Dillon, 2013). There are also indications that the MsV approach is applicable

transdiagnostically (Schnackenberg et al., 2018a) and may be considered an approach that is sensitive to a trauma history (Schnackenberg et al., 2018b). However, the current evidence-base for the MsV approach is limited to a small pilot randomised controlled trial (Schnackenberg et al., 2017), assessment of specific elements of the approach (Corstens & Longden, 2013) and a collection of personal testimonies (Romme, Escher, Dillon, Corstens & Morris, 2009). Given the widespread use of the MsV approach it is important that it receives further evaluation.

The current study aimed to evaluate outcomes of the MsV approach with a particular focus on using Voice Dialoguing techniques. The main outcome was voice-related distress. However, a number of secondary outcomes were included in order to gather information on potential mechanisms that may be associated with the intervention and worthy of further investigation in future research. The case series involved a randomised period of baseline, a 9-month period of intervention and a 3-month follow-up. Although the MsV approach was not developed with a fixed number of sessions in mind, we offered a maximum of 20 sessions within 9-months so as to be able to make broad comparisons with the outcomes of other clinical trials in the field.

Method

Participants

To be considered for the case series, potential participants had to report currently distressing voices as determined by a rating of 2 or above on the 'Intensity of Distress' item on the Psychotic Symptoms Rating Scale for Auditory Hallucinations (Haddock, McCarron, Tarrier & Faragher, 1999) scale. There were no other restrictions on the entry criteria regarding diagnosis, although participants had to have had recorded contact with mental health services at the point of recruitment, be aged 18-65, and have had no significant history of organic, or

drug/alcohol factors implicated in the aetiology of psychotic symptoms. They also needed to be able to speak English and have a fixed abode. All participants gave written consent to take part in the study.

Design

A concurrent multiple baseline design was used. Participants were randomly allocated to receive either a 4, 5, 6, 7 or 8-week wait duration (3 in each condition), prior to the intervention starting. Having a varied length of baseline allowed for the differentiation between the time effects during the baseline phase and the experimental effects during the intervention phase. The intervention consisted of a maximum of 20 individual sessions to be conducted within a 9-month period starting at the end of the waitlist. Assessments on the primary outcome (a measure of voice-related distress) were conducted on a weekly basis. Secondary assessments were conducted on up to five occasions; prior to the waitlist period starting (baseline), at the end of wait list period (pre-treatment), at the end of the construct phase of intervention (post-construct), at the end of the intervention (post-treatment) and at a 3-month follow-up from the end of the intervention. The post-construct assessment was only conducted with the participants who progressed to this stage of the process and therefore this data was not included in the main statistical analyses.

The study was given NHS ethical approval by the South Central Berkshire B (15/SC/0013) and the protocol was registered (ISRCTN5437085).

The Making Sense of Voices Approach (Romme & Escher, 2000)

Assessment and construct:

After engagement, the first phase of the approach involves conducting the Maastricht Hearing Voices Interview. For many voice hearers, this forms part of the intervention as the

conversation can challenge cognitive avoidance of the topic. The interview leads to the development of the 'construct', a collaborative, voice-hearer led process within which an individual's personal history is explored in relation to the formation and content of the voices they hear. Voice hearers are offered an opportunity to explore alternative approaches to understanding the assumed original mechanisms of their voices and efforts are made to identify the personal problems or functions that the voices may represent.

Intervention:

Communication with voices was guided by the assumption that voice hearing can originate from stressful life events and that the voices may be functioning so as to protect personal vulnerabilities. Based on the construct developed in the first phase the accompanying person (in this study a trained mental health professional) works towards opening a dialogue with the voice. An open, exploratory approach as to what it may be that the voice is trying to communicate is adopted. It is not uncommon for a voice to express itself through exaggerations and metaphors prior to a change in the relationship with the voice hearer (Moskowitz, Mosquera & Longden, 2017). The dialogue may be either indirect (in that the voice hearer first listens to what the voice says and then repeats it) or direct (in which case the voice hearer communicates what the voice says in real time). The aim is to reconstruct the relationship with the voices to become more peaceful and equitable. Voices may transpire to be 'allies' of the voice hearer during the process, and reveal a protective function, such as the need to draw attention to unresolved current and past conflicts (see Corstens, Longden & May, 2012, for further details).

The MsV intervention (comprising of the assessment, construct and intervention phases) was delivered individually by one of four mental health workers (two clinical psychologists and

two counselling psychologists), who received training and regular supervision from two of the authors (JS and DC). Training comprised of six days from JS and one person with lived experience of voice hearing and two days from DC along with two people with lived experience of voice hearing.

Outcome measures

Main Outcome

Hallucination Change Scale (HCS, Hoffmann et al., 2003). The primary outcome, HCS, was based on weekly ratings of the distress associated with voice hearing and is hereafeter referred to as 'voice-related distress'. Each participant generated a narrative description of their voices for the one-week period prior to initiation of the first assessment, and rated the associated level of distress. This rating then became the baseline or '0' rating for the purpose of calibrating future ratings. The weekly voice-related distress ratings were scored in subsequent assessments by requesting the voice-hearer to generate a new narrative description of their voices. Subsequent severity scores ranged from +10, corresponding to a maximum possible *decrease* in voice-related distress, to a score of -10, corresponding to a maximum possible *increase* in voice-related distress. Ratings corresponded to the average experience over the previous week, and were always rated with reference to the original zero calibration score. Data was collected on a weekly basis during the wait and intervention phase, and on a monthly basis during the 3-month follow-up phase.

Secondary Outcomes

Psychotic Symptoms Rating Scale for Auditory Hallucinations (PSYRATS (AH); Haddock et al., 1999). 11 items completed on the basis of a clinical interview enabling

analysis in relation to voice distress specifically, as well as a wider range of voice characteristics.

Beliefs about Voices Scale (BAVQ-R; Chadwick, Lees & Birchwood, 2000). A 35-item self-report measure of the appraisals made in relation to the voice hearing experience.

DAIMON scale (Perona-Garcelan et al., 2015). A 28-item self-report measure assessing how an individual relates to their voice hearing experience. Two of the five subscales (the person's relationship with his/her voices and the voices' relationship with the person) are reported here.

Generalised Anxiety Disorder (GAD7; Spitzer, Kroenke, Williams & Lowe, 2006). A 7-item self-report measure, each describing anxiety symptoms, and endorsed on the basis of frequency over the previous two weeks.

Physical Health Questionnaire (PHQ9; Kroenke, Spitzer & Williams, 2001). A 9-item self-report measure of depression covering all nine of the DSM-IV criteria and based on assessment of the frequency over the previous two weeks.

Dissociative Experience Scale (DES; Bernstein & Putman, 1986). A 28-item self-report measure of a wide variety of types of dissociation, including both problematic dissociative experiences and normal dissociative experiences (e.g. day-dreaming). Only the DES-Taxon 8-item subscale is reported in this study which measures a discontinuous, pathological class of dissociation.

Warwick Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2006). A 14-item self-report questionnaire which includes both hedonic and eudaimonic features rated on a five-point scale.

Self-Compassion Scale- Short form (SCS; Raes, Pommier, Neff & Van Gucht, 2011). A brief form of the original 26-item scale which was designed to measure self-judgement, self-kindness and self-criticism.

Statistical analysis

The primary endpoint was analysed using linear mixed models. The fixed effects (predictors) included a linear time variable where 1= the first weekly voice-related distress rating on treatment, dummy indicators for treatment and follow up phases which contrast to baseline, and two time within phase variables, one for the treatment phase and one for the follow-up phase (0 was given as the last timepoint in the phase to allow the model to easily produce comparisons of interest at the end of the phases) (cf. Vlaeyen, De Jong, Geilen, Heuts, & Van Breukelen, 2001). The models also included random intercept for subject and used an ARMA(1,1) covariance structure for the repeated time within subject. These account for the between subject variation and within subject variation. Due to the small sample size the Kenwood Roger degrees of freedom adjustment was used. Random slopes were also investigated however these often lead to issues with the models or reduced fit and therefore were not included. An initial model was fitted to only test a linear time effect. After this a full model containing all predictors as described above was fitted and then the time within phase predictors were assessed and removed in a backwards stepwise fashion if they were not significant. If the main linear effect of time was not significant at this stage it was removed. The random effects were included in all models. Cohen's *d* was derived as an effect size of the treatment and follow-up phases compared to baseline. The difference between phase of interest and the baseline (wait weeks) phase was taken from the relevant parameter estimates from the fixed part of the model. The denominator used was the square root (between subject variance + (within subject variance/average number of measurements per phase)). The

between subject variance is obtained from the variance of the random intercept and the within subject variance uses the residual variance from the model. A sensitivity analysis was performed where the time variable was defined as 1 being the first weekly voice related distress rating for an individual.

The secondary outcomes were analysed using linear mixed models. A categorical time variable representing the four assessment visits (i.e. not including the post-construct assessment) was fitted as a fixed effect. An unstructured covariance structure was used to account for the repeated assessments within a subject. Kenwood Roger degrees of freedom was also used. Standardized measures of effect size (Glass' delta) were derived for the comparison of the post-treatment visit and the pre-treatment visit, and for the comparison of the follow-up visit and the pre-treatment visit using the relevant adjusted difference divided by the control s.d. (pre-treatment). Comparisons between start of baseline and pre-treatment were also made. The post-construct assessment was not included in the main analysis but was included within the relevant participants' graphs based on the weekly voice distress ratings which can be observed in Figure 1.

All available data was used in the analyses and all missing data was assumed to be missing at random. The analyses using restricted maximum likelihood are robust when outcomes are missing at random. However, two participants stopped hearing voices during the intervention and therefore some assessments were not relevant (BAVQ-R and DAIMON) and were initially recorded as missing, sensitivity analyses were performed where these missing values were imputed as the 'best case' for these assessments (BAVQr Malevolence, BAVQr Omnipotence and DAIMON Voice addresses person were inputted as zero, BAVQr Benevolence was inputed as 18 and DAIMON Person address Voice was inputted as 40). The statistical analyses were performed using SAS 9.4.

Results

Fifteen participants were recruited (see Table 1 for baseline characteristics), with three participants randomised to each of the five wait durations. All participants were being prescribed anti-psychotic medication at the time of their initial screening assessment.

Table 1 here

Eleven participants remained fully engaged throughout the study and received between 18 and 20 individual sessions within the 9-month period allocated for the MsV intervention. Four participants disengaged from the intervention before the end of treatment, although one of these had received 15 sessions and remained engaged with the wider study and provided some follow-up data. Three participants did not complete the assessments for the secondary outcomes at post-treatment or follow-up. One of these received 5 sessions before they moved out of the NHS Trust within which the study was being conducted. Two participants stated that they did not find the approach beneficial and requested that they no longer be contacted after the point at which they withdrew from the intervention (5 sessions for one and 6 sessions for the other). Overall 28.13% of the weekly voice-related distress ratings were missing. There were no serious adverse events associated with the intervention for any of the participants during the study.

The individual weekly voice-related distress ratings of the 15 participants during the different phases of the study are shown in Figure 1.

Figure 1 here

The initial mixed regression analysis fitting time showed a statistically significant linear effect of time (parameter estimate 0.066, t=2.11, p=0.049). Once all predictors were entered, time within treatment phase and time within follow-up phase were not statistically significant and were removed from the model in a stepwise fashion. After these were removed, the linear effect of time was also not statistically significant (parameter estimate 0.058 t=1.51, p=0.14) and was also removed from the model. Table 2 presents the final results from the linear mixed regression analysis of the weekly hallucination change scores. The intervention (MsV) did not have a statistically significant effect on the weekly voice-related distress ratings, either during the intervention (as compared to baseline (wait weeks)) or follow-up phase (as compared to baseline (wait weeks)). However, the effect sizes were in the moderate range. The individual profile plots and inspection of the conditional residuals from the model gave some indication that participants seemed to broadly fit into either a group who responded well to the approach or to a group who did not respond at all. Therefore, some caution needs to be taken in the interpretation of the results. The sensitivity analysis yielded similar conclusions for the final model. Figures 2a and 2b show the observed means and the predicted means from the analysis respectively.

Table 2 here

Figure 2a here

Figure 2b here (currently a pdf)

Note that for figures 2a and 2b week1 is the first intervention session for a participant.

Table 3 presents the post-treatment and follow-up data for all secondary outcomes. With the exception of the self-compassion scale and BAVQ-R omnipotence scale at follow-up, no outcomes were associated with a statistically significant difference from pre-treatment. However, there were large effect sizes for PSYRATS both at the post-treatment and follow-up compared with pre-treatment, whilst the BAVQ-R malevolence and omnipotence scores indicated a moderate effect at post-treatment and a large effect at follow-up. It must be noted that for some endpoints the variability increased for post-treatment and follow-up timepoints compared to baseline and pre-treatment, this is particularly evident in the PSYRATS scores. Note that the standardised effect size presented uses pre-treatment s.d as its denominator. There were also no observed statistically significant differences between pre-treatment and start of baseline in any of the secondary measures. The results of the sensitivity analyses showed moderate effect sizes for all BAVQ-r subscales at end of intervention (Malevolence =0.57, Benevolence =0.52, Omnipotence =0.53) and at follow-up for Benevolence (0.65), and large effects sizes for Malevolence (0.77) and Omnipotence (1.19) at follow-up. The DAIMON Voice address Person results were broadly similar to the main analysis and the DAIMON Person address voices showed small effect sizes. However as per the main analysis only BAVQ-R Omnipotence and Self compassion scale showed statistically significant differences from pre-treatment at follow-up.

Table 3 here

Discussion

The intervention was viable to deliver within a mainstream clinical NHS setting. Most of the participants maintained engagement throughout the full 9-month intervention phase which suggests acceptability from both voice hearers and staff. Given that directly engaging with a voice through dialogue may induce clinical concern within some mental health workers, it is important to note that there were no adverse events associated with the intervention.

Results based on the main outcome, the weekly voice-related distress ratings, indicated that the reduction in distress reported by voice hearers throughout the intervention or follow-up phase was not statistically significant. The small sample size will have limited the opportunity for statistical significance, and it is of note that the effect size of 0.38 at post-treatment and 0.56 at follow-up are indicative of the potential for the intervention to provide clinically meaningful change. In fact, these effect sizes are similar to those reported for individual CBT for voices (van der Gaag et al., 2014). It is also of interest that the effect size for MsV was larger at follow-up than at post- treatment. Anecdotally, it was observed that several participants struggled to keep a meaningful frame of reference within the weekly change scores and this is likely to have reduced the reliability of this outcome.

With respect to the secondary outcome measures, there were large effect sizes on the PSYRATS Hallucination scale both at post-treatment and at follow-up, although again these did not reach statistical significance. Two of the outcome measures (self-compassion and BAVQ-R – omnipotence) did produce statistically significant differences at follow-up compared to pre-treatment. However, these results are to be treated with caution given the

number of multiple tests. All but three of the outcome measures (BAVQ-R –benevolence subscale, BAVQ-R –Malevolence subscale and DAIMON Person address voices) were associated with a larger effect size at follow-up when compared to post- treatment.

The large effect sizes for the voice related outcome measures, and the trend towards an increased effect at follow-up suggests that the MsV approach warrants further investigation. In part this will be done via a qualitative analysis of interviews conducted with the participants of the current case series (in preparation). However, a future study will require a parallel control condition, in order to account for the variety of factors that are not specifically associated with the intervention, but that may have impacted on the outcomes of the current study.

Our outcome data indicated a wide variety of responses across the participants. This result is consistent with the anecdotal feedback from the mental health workers in this study who often commented on their experience of the participants varying in their engagement with the Voice Dialoguing component of the intervention. It may be that this 'ingredient' is an important part of this approach and that, prior to larger scale evaluation, efforts should be made to establish who is most likely to benefit. One aspect of voice hearing that is likely to be of interest in this respect is the extent to which the voice hearer dissociates whilst communicating with their voices, which may be linked to the extent to which the voice is experienced as a disconnected 'other' with whom a dialogue can be initiated (Moskowitz, Mosquera & Longden, 2017). It is also worth noting that whilst the MsV approach is not limited to any diagnostic category, although the majority of the current sample were diagnosed with a psychotic disorder. This may have had an impact on our outcomes through the impact of long-term use of neuroleptics (Murray et al., 2016).

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Declaration of Interest Statement

Three authors (DC, EL & JS) have received financial payments for delivering teaching on the MsV approach. There are no other reported conflicts of interest.

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Table 1. *Baseline characteristics of the sample*

	n=15
Demographics	
Mean age in years (SD)	46.4 (10.7)
Male (%)	46.7
White (%)	80.0
Age left formal education (SD)	18.2 (2.5)
Currently Employed (%)	33.3
Primary Diagnosis	
Schizophrenia	7
Schizoaffective disorder	2
Psychosis NOS	3
Emotionally Unstable Personality Disorder	2
Depression	1
Psychiatric history	
Prior psychiatric Hospitalization (%)	73.3
Mean number of prior Admissions (SD)	6.9 (9.1)
Mean age at first contact with mental health services (SD)	27.1 (12.2)
Chlorpromazine-equivalent dose of antipsychotic drug (mg/day) (SD)	517 (309)

Table 2: *Results of mixed regression analysis for weekly Voice Related Distress Ratings*

Parameter	β	Std. error	df	t	p	Effect size Cohen's d*
Intercept	1.41	0.94	22.1	1.50	0.15	
Intervention	0.80	0.65	305.2	1.24	0.22	0.38
Follow-up	1.60	1.04	224.6	1.54	0.13	0.56

*Effect size Cohen's D=effect/s.d. derived from variance of the random part of the model and effects equal to the betas from the mixed regression model.

Table 3: *Outcomes as adjusted means (SE) at baseline, pre-treatment, end of intervention and follow-up*

	Baseline (Start of wait weeks)	Pre-treatment (End of wait weeks)	End of Intervention			Follow-Up		
	Adjusted mean (SE)	Adjusted mean (SE)	Adjusted mean (SE)	Difference from pre-treatment (SE, p-value)	Effect Size	Adjusted mean (SE)	Difference from pre-treatment (SE, p-value)	Effect Size
PSYRATS (Hall)	31.3 (1.10)	29.5 (0.93)	26.8 (3.03)	-2.7(3.08, p=0.39)	0.76	23.9 (3.55)	-5.6 (3.89,p= 0.17)	1.57
BAVQr								
Malevolence	9.9 (1.24)	10.1 (1.08)	8.2 (1.30)	-1.9 (1.14, p=0.12)	0.46	8.2 (1.38)	-1.9 (1.19, p=0.14)	0.45
Benevolence	4.1 (1.30)	3.3 (1.05)	4.3 (1.24)	1.0 (1.33, p=0.45)	0.25	3.6 (0.95)	0.3 (1.14, p=0.79)	0.08
Omnipotence	11.5 (0.84)	11.1 (0.79)	10.1 (1.02)	-0.9 (0.79, p=0.26)	0.31	8.7 (0.99)	-2.4 (0.86, p=0.02)	0.78
DAIMON								
Person Addresses Voices	8.6 (2.51)	10.5 (2.81)	11.2 (3.20)	0.7 (2.55, p=0.79)	0.06	8.1 (1.99)	-2.4 (2.47, p=0.35)	-0.22
Voice Addresses Person	12.1 (2.32)	15.0 (2.89)	15.5 (2.41)	0.5 (2.92, p=0.88)	-0.04	11.0 (2.13)	-4.0 (3.20, p=0.23)	0.36
Self-Compassion Scale	2.3 (0.17)	2.2 (0.18)	2.4 (0.21)	0.2 (0.17, p=0.21)	0.33	2.6 (0.16)	0.4 (0.14, p=0.02)	0.55
DES-Taxon	269.0 (54.81)	248.7 (52.97)	255.8 (57.81)	7.1 (19.92, p=0.73)	-0.03	235.9 (57.40)	-12.8 (27.57, p=0.65)	0.06
GAD7	16.1 (1.16)	14.1 (1.59)	14.4 (1.42)	0.3 (1.05, p=0.81)	-0.04	12.3 (1.53)	-1.8 (2.36, p=0.46)	0.29
PHQ	17.0 (1.85)	17.4 (1.84)	17.2 (2.27)	-0.2 (1.47, p=0.91)	0.03	16.4 (1.83)	-1.0 (1.33 ,p=0.49)	0.13
WEMWBS	32.5 (2.18)	31.3 (2.22)	30.4 (2.97)	-0.9 (2.53, p=0.73)	-0.10	32.9 (2.30)	1.7 (1.71, p=0.35)	0.20

Effect size is calculated using the adjusted difference divided by the control s.d. (pre-treatment) and adjusted for each measure such that a positive value represents an improvement.

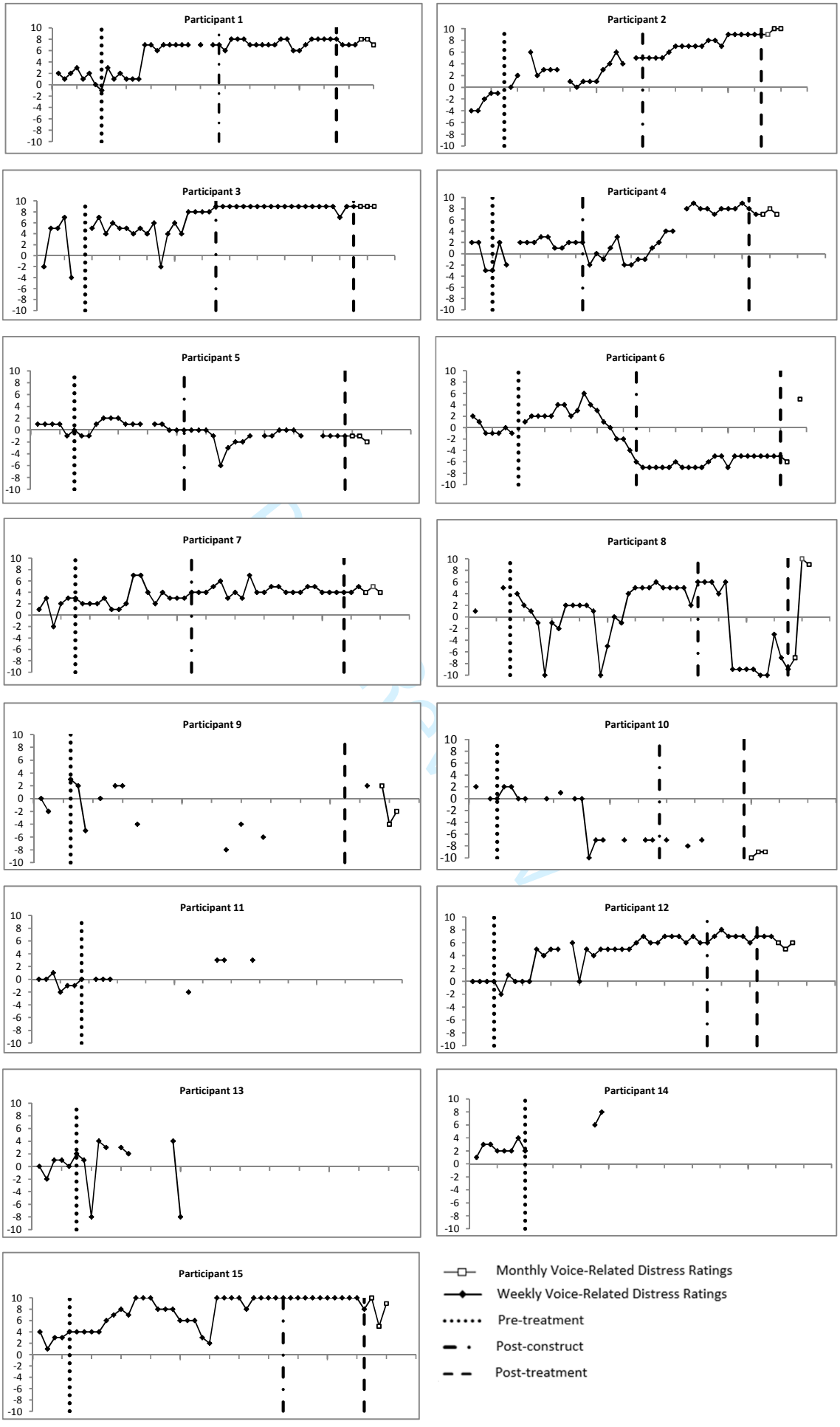
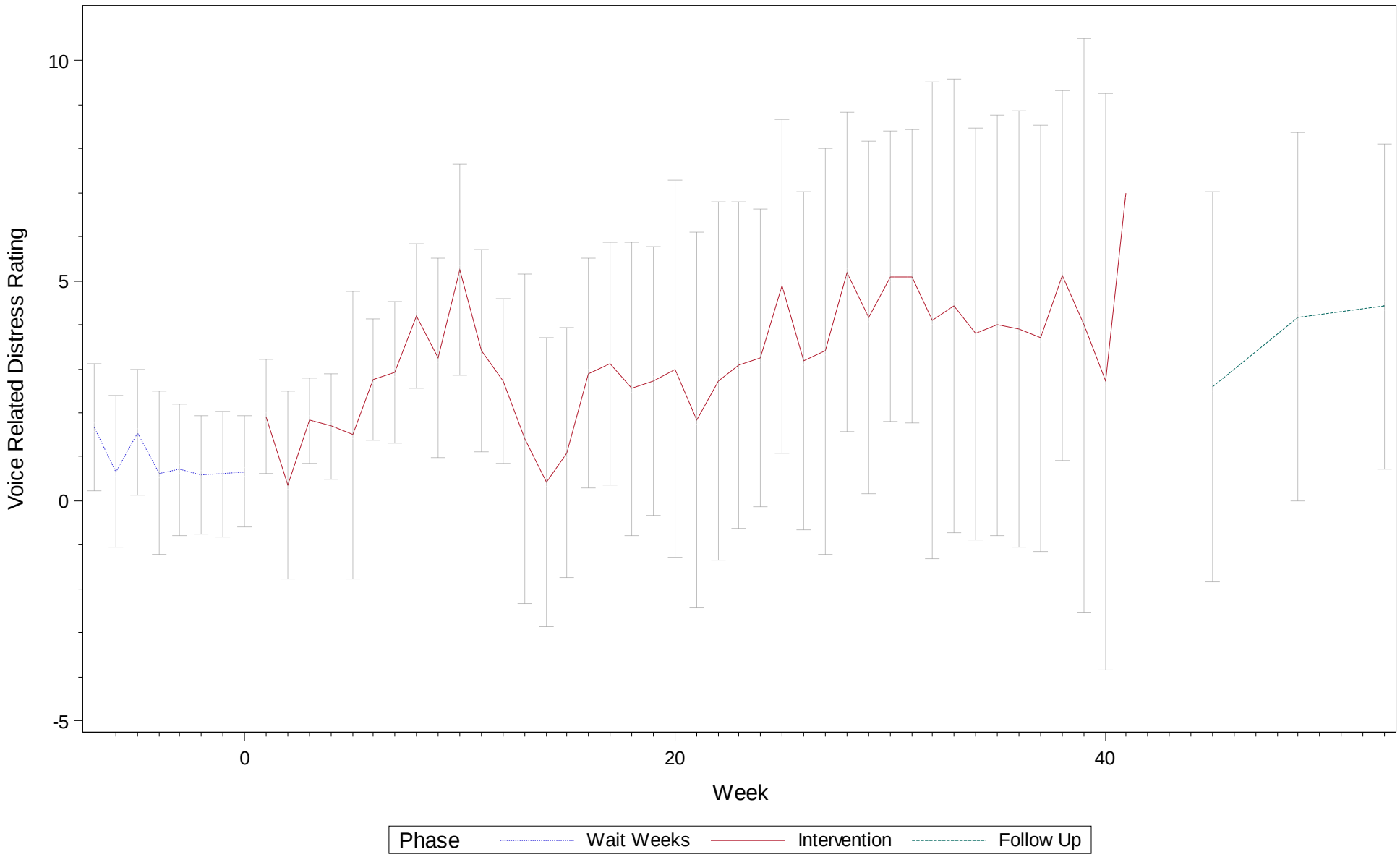
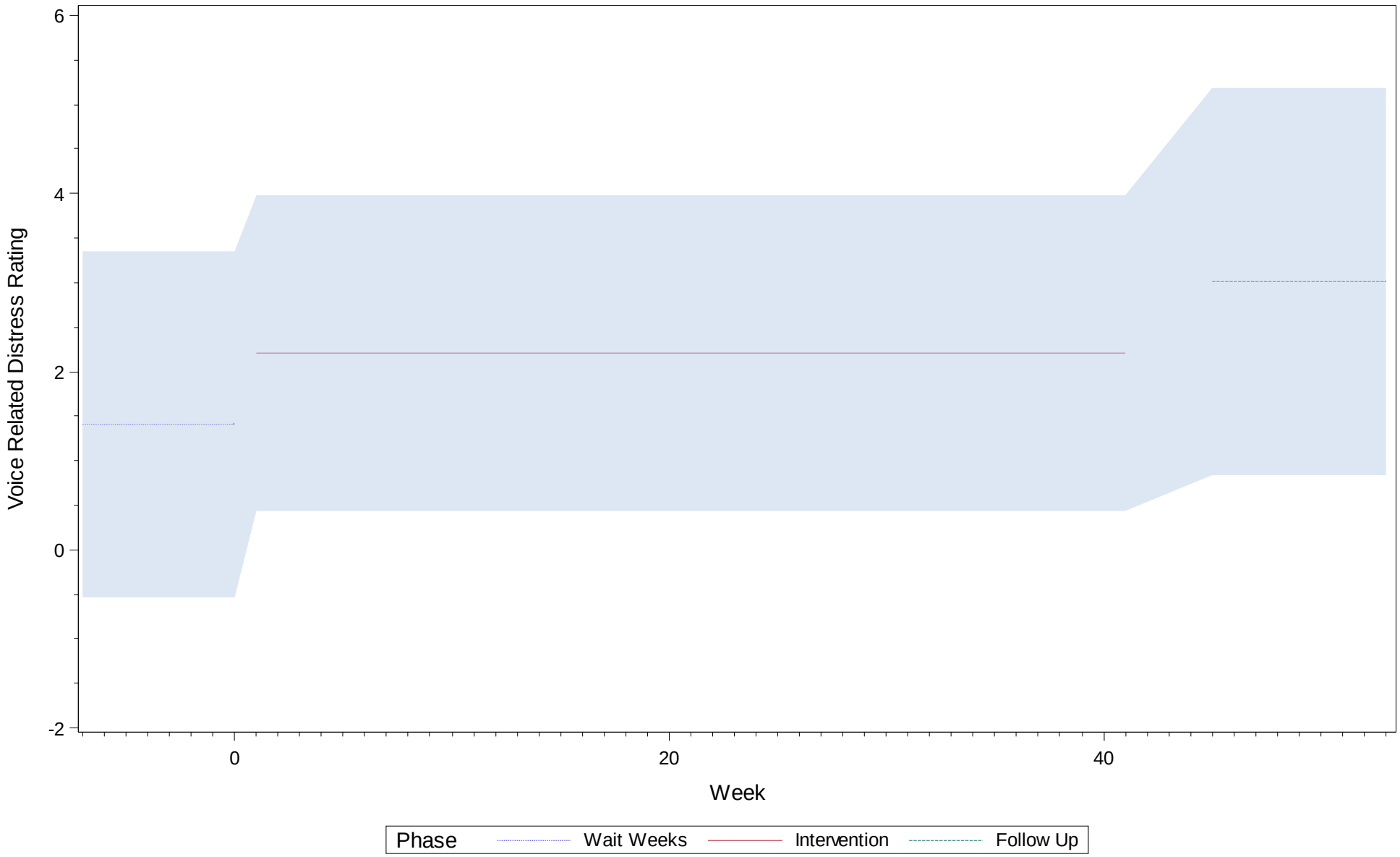


Figure 1. *x-axis denotes time, y-axis denotes Voice-Related Distress Ratings*


Plot of Mean Voice Related Distress Ratings and 95% Confidence Intervals
Voice Related Distress Rating
10
5
0
-5
0
20
40
Week
Phase
Wait Weeks
Intervention
Follow Up


Plot of Predicted Mean Voice Related Distress Ratings with 95% Confidence Intervals
Voice Related Distress Rating
6
4
2
0
-2
0
20
40
Week
Phase
Wait Weeks
Intervention
Follow Up