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Further evidence that singing fosters mental health and wellbeing: The West Kent and Medway project

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Abstract

Purpose

Clift and Morrison (2011) report that weekly singing over eight months for people with enduring mental health issues led to clinically important reductions in mental distress. The present study tested the robustness of the earlier findings.

Design

Four community singing groups for people with mental health issues ran weekly from November 2014 to the end of 2015. Evaluation place over a six-month period using two validated questionnaires: the short Clinical Outcomes in Routine Evaluation questionnaire (CORE-10), and the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS).

Findings

Twenty-six participants completed baseline and follow-up questionnaires. CORE-10 scores were significantly reduced, and WEMWBS scores significantly increased. Comparisons with the earlier study found a similar pattern of improvements on CORE items that are part of the 'problems' sub-scale in the full CORE questionnaire. There was also evidence from both studies of participants showing clinically important improvements in CORE-10 scores.

Research limitations

The main limitations of the study are a small sample size, and the lack of a randomised control group.

Originality

No attempts have been made previously to directly test the transferability of a singing for health model to a new geographical area and evaluate outcomes using the same validated measure.

Keywords

Group singing, mental distress, mental wellbeing, evaluation, replication

Introduction

Since 2000, there has been considerable growth of scientific interest in singing, wellbeing and health (Clift, 2011, Clift et al., 2015). This has been sufficient to support several systematic reviews with attention to specific populations or health outcomes: Clark and Harding (2012) singing as a therapeutic intervention; Clements-Cortez (2015) older people; Gick and Nicol, (2016) respiratory function; Reagon et al. (2016) 'health-related quality of life outcomes', and Barnish et al. (2016) people with Parkinson's. Clift, Gilbert and Vella-Burrows (2016) review previous reviews and highlight a general consensus on the health and wellbeing value of singing. However, most studies to date have a variety of methodological weaknesses and further, larger-scale and better controlled studies, utilising

validated health outcome measures, are needed.

Principal benefits from group singing, identified from the earliest studies, are a more positive mood and increase in psychological and social wellbeing. These effects, observable even after a single singing session and strengthening over time, have been reported in studies of: established choirs (Beck et al., 2000; Clift and Hancox, 2001, 2011; Kreutz et al., 2004); women in prison (Silber, 2004), homeless people (Bailey and Davidson, 2015); older people in care settings (Skingley and Bungay, 2010; Bungay et al., 2010; Skingley and Vella-Burrows, 2010); people experiencing chronic pain (Hopper, Curtiz, Hodge et al., 2016); people with COPD (Morrison, et al., 2013; Skingley, Page, Clift et al., 2014), and people in choirs for people affected by cancer (Fancourt et al., 2016). A definitive demonstration of improvement in mental health-related quality of life comes from a randomised controlled trial of a weekly community singing programme for older people living independently (Coulton et al., 2015; Skingley, Martin and Clift, 2014). This study found significant improvements at the end of the intervention, and showed that such benefits were maintained on three-month follow-up.

Singing for people experiencing mental health challenges

Two observational studies, using validated outcome measures, have reported benefits from singing for people with mental illness. Grocke et al. (2009) established 10-week singing and song-writing therapy groups for people with a severe and enduring mental illness. Participants (n=17) completed a battery of questionnaires, with the WHOQoL-Bref as the principal outcome measure. Significant improvements on 'quality of life' items within the WHOQoL-Bref questionnaire were found, although no changes were apparent in levels of social anxiety and symptoms of mental ill-health. Clift and Morrison (2011), in a study that forms the basis for the replication reported here, evaluated a network of seven community singing groups for people with enduring mental health issues. Mental health service users, together with friends, family and health professionals also participated. The Clinical Outcomes in Routine Evaluation (CORE) questionnaire, measuring mental distress (Gray and Mellor-Clark, 2007) was completed at baseline, and after eight months (n=42). A significant reduction in the total mental distress score was found, together with improvements on three of the four sub-scales.

Four comparative trials have also assessed the value of group singing for people with mental health issues. Grocke et al. (2013) report a cross-over randomised controlled trial (n=52) based on an earlier study (Grocke, et al., 2009) for patients with serious enduring mental health issues (e.g. schizophrenia, bi-polar disorder). Singing and song writing therapy groups ran weekly for a period of thirteen weeks, culminating in a studio recording of a song or songs composed in groups. Significant improvements were found on the principal outcome quality of life measure. Petchkovsky et al. (2013) report a controlled study on weekly singing and depression. Participants with 'major depressive disorder', were allocated to weekly singing (n=21) or a control group (n=11). The intervention consisted of eight weekly sessions of choral singing, plus practice at home supported by a CD and song book. A significant reduction in depression was found on the Beck Depression Inventory. In the third trial, Ahessy (2016) worked with older people of mixed cognitive ability, in residential care or attending a day centre. Participants were randomly allocated to twelve weekly choral singing sessions (n=17), or usual care (n=19). The

singing group showed significant improvements in depression, quality of life and cognitive functioning compared with the control group. In each of these three studies, the authors identify small samples as a major limitation and express caution regarding generalisability. Most recently, Sun and Buys (2016) report a comparative, but non-randomised study on the impacts of an 18-month community singing intervention on mental health outcomes for Australian Aboriginal and Torres Strait Islander people. Five singing groups were set up (total n=108), with five comparison groups (n=94). The evaluation covered a period of 18 months, with a significant improvement in the mental health of the intervention groups compared with controls (categorised as 'normal' vs 'distressed' on a validated screening measure for substance use and mental health risk).

The West Kent and Medway Singing for Mental Health and Wellbeing project

This study repeated the model of networked singing groups established in an earlier study (Clift and Morrison, 2011). A limitation of the previous study was its implementation in one geographical area, with a question over the generalisability of the findings. The aim of this study was to test the transferability of the model to a new geographical area and assess whether the mental health outcomes seen previously could be replicated.

The project was developed in partnership with Kent County Council Public Health Team, with funding from a consortium of local Clinical Commissioning Groups. At the same time as this work was planned, the Council established an ambitious programme of work under the heading 'Six Ways to Wellbeing'. This involved evaluating a range of community-based initiatives to promote mental wellbeing (Haan, Hemming and Hamilton, 2015). The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) was used across this programme for evaluation purposes (McPin Foundation, 2015). For this reason, WEMWBS was used in evaluating this project. CORE-10 was used in preference to the full CORE questionnaire, used in the earlier (Area removed) project, to lessen demand on participants from completing two questionnaires. A re-analysis of the earlier East Kent CORE data was undertaken to derive CORE-10 scores, to allow a direct comparison between the East Kent and West Kent and Medway findings.

Method

Design

A longitudinal observational design was adopted, with evaluation data gathered over a six-month period through two validated questionnaires and semi-structured interviews.

Participants

Contacts with local community mental health support services and extensive advertising and leafleting took place to raise awareness of the groups. The project was presented as an opportunity to join a community singing group, and was not offered explicitly as a therapeutic intervention, nor delivered by health professionals or music therapists. Participants were referred through key workers in local services or referred themselves, without the requirement for prior screening and assessment. For this reason, no explicit inclusion or exclusion criteria were adopted, to ensure that groups were inclusive and open

to anyone with current mental health conditions, or in recovery, accessing community support services. A total of 55 participants with experience of mental illness engaged with the project, and of these 13 joined after the start of the evaluation, with the remaining 42 completing baseline questionnaires. No medical histories were taken, nor details of any psychiatric diagnosis participants may have received. During the interviews conducted as part of the evaluation of the project, however, a wide range of current or previous mental health issues was identified including: depression, anxiety, agoraphobia, bereavement, Obsessive Compulsive Disorder, Bipolar Disorder, Dissociative Personality Disorder, previous psychotic episodes, previous mental/emotional breakdowns, insomnia, experiencing isolation and 'the general ups and downs of life'. Family and supporters of people with mental health needs were also free to join groups, but were not formally part of the evaluation.

Intervention

Weekly singing groups were set up in community venues in four towns in West Kent and Medway in late 2014. Experienced singing leaders jointly planned the programme and facilitated the groups. A combined workshop which took place in April 2015 and an end of project celebration event took place in July 2015. The latter included members of 'singing for health' choirs from East Kent (see Figure 1).

Ethical approval

Ethical approval was given by Canterbury Christ Church University. Participants were provided with an information sheet about the evaluation and the methods involved. They had the opportunity to consider their involvement and ask questions before signing a consent form.

Questionnaires

Clinical Outcomes in Routine Evaluation questionnaires (CORE-10)

The CORE-10 questionnaire is a short version of the CORE questionnaire used in the earlier East Kent study (Clift and Morrison, 2011). CORE is widely used in clinical practice in the UK to assess the outcomes of counselling and psychotherapy and has excellent validity and utility in practical assessments. It consists of 34 statements describing feelings and behaviours related to mental distress. Respondents are asked to indicate how often they have felt or behaved in ways described over the previous week on a five-point scale (0-4). The questionnaire is scored by calculating the mean item rating (reversing ratings for positive statements) and multiplying by ten, giving a scale from zero to 40, with higher scores reflecting greater mental distress (Connell et al., 2007; Gray and Mellor-Clark, 2007). The short version of the CORE consists of 10 items (CORE-10) and a simple sum of ratings (with reverse scoring for two positive items) also produces a scale running from 0 to 40. Higher scores are indicative of greater mental distress. For CORE-10, a clinical cut-off score of 11 has been identified as an indicator of need for mental health support, and a change score of six (up or down) is considered clinically important (Barkham, et al., 2013).

Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)

WEMWBS is a population level survey instrument designed to measure positive wellbeing, with good psychometric properties (Tennant et al., 2007; Stewart-Brown et al., 2009). The questionnaire consists of 14 positively-worded 'statements about feelings and thoughts' and respondents rate each on a five-point frequency scale (1-5) to reflect their feelings over the previous two weeks. Scores range from 14 to 70, with higher scores equating to more positive mental wellbeing. A large-scale survey in England in 2011 of a representative sample of over 7000 adults, reported a mean of 51.6 with a standard deviation of 8.7 (Craig and Mindell, 2012). WEMWBS was not designed as an individual assessment instrument, nor as a measure for use in evaluation of interventions intended to impact on mental wellbeing. Nevertheless, the questionnaire has subsequently been validated for use with clinical populations (Bass, et al., 2016), and shown to be sensitive to change to be fit for use in programme evaluations (Maheswaran, et al., 2012).

Interviews

Before the follow-up questionnaire assessment, members of the singing groups were invited to participate in semi-structured individual interviews. Findings from the interviews are reported in Clift, Manship and Stephens (2015).

Statistical Analysis

The non-parametric matched-pairs Wilcoxon test was used to analyse changes in scores on the CORE-10 and WEMWBS. In previous research using these scales, standard parametric tests, such as t-tests, have been used. However, both measures are ordinal in character, and a rank-order statistical technique is more appropriate for testing the null hypothesis of no change.

Photography and Filming

Photography and filming were used to document the settings of the groups, the participants and facilitators involved, and the combined workshop and performance events organised. See Figure 1 for an image of an image of the performance event at the end of the project.



Figure 1: Members of the West Kent and Medway Singing Project joined by members of East Kent Singing for Health Groups for a performance event at the Hazlit Theatre, Maidstone, July 2015.

Results

Participants

Forty-two participants completed the baseline questionnaires, and 26 (62% follow-up rate) completed the questionnaires again six months later (7 males, 19 females; age range 30 to 85, median 55). The main reasons for participants not being followed up were leaving the group after initially attending regularly, or a record of irregular attendance and absence during the period of the follow-up. Due to some missing data, the sample was reduced to 25 for WEMWBS and 24 for CORE-10. No differences were apparent between males and females on the outcome measures at baseline or followup so results are not separated by sex.

Quantitative Findings

Characteristics of the WEMWBS and CORE-10 questionnaires

WEMWBS and CORE-10 had high internal reliabilities at baseline (CORE-10 alpha = 0.89; WEMWBS alpha = 0.94) and follow-up (CORE-10 alpha = 0.93; WEMWBS alpha = 0.96). Moderate positive correlations over six-months were found for CORE-10 (0.63, $p < 0.01$, two-tailed, Spearman) and WEMWBS (0.48, $p < 0.05$, two-tailed, Spearman) indicating a reasonable level of consistency over time in the relative ranking of participants on these measures. Correlations between the measures at baseline and follow-up were negative, indicating, as expected, that high scores on the WEBWBS were associated with low scores on the CORE-10 (Baseline, -0.47, $p < 0.02$, two-tailed, Spearman; Follow-up, -0.49, $p < 0.02$, two-tailed Spearman).

Changes in WEMWBS and CORE10 scores

Table 1 reports means (standard deviations) for the WEBWBS and CORE-10 scores at baseline and follow-up. At baseline, WEBWBS means are well below the reported population mean and CORE-10 means are above the clinical cut-off point of 11. At follow-up, a significant increase is found on the WEWWBS mental wellbeing score, and a significant decrease on the CORE-10 mental distress score.

Comparisons were also made for individuals items in both scales (not reported here, see Clift, Manship and Stephens, 2015). All of the WEMWBS items showed a small increase in mean values, but only two items provided an indication of significant change: I've been thinking clearly and I've been feeling good about myself. For the CORE-10, items that showed significant changes were all components of the 'problems' sub-scale, indicating specific improvements in symptoms of mental distress: I have felt tense, anxious or nervous; I have had difficulty getting to sleep or staying asleep; I have felt unhappy, and Unwanted images or memories have been distressing me.

Table 1: Changes in Measures of Mental Wellbeing and Distress

West Kent and Medway	Baseline	Follow-up	Spearman z
WEMWBS (n=25)	46.80 (11.20)	49.96 (10.82)	-2.13*
CORE-10 (n=24)	13.00 (8.60)	9.67 (8.66)	-2.66**
East Kent			
CORE-10 (n=38)	11.08 (7.65)	8.24 (6.20)	-3.01**
Combined samples			
CORE-10 (n=62)	11.82 (8.02)	8.79 (7.22)	-4.01***

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Comparison with East Kent findings

The aim of the current study was assess the whether the model of networked singing groups developed in East Kent, could be transferred to another locality with similar results.

Full CORE questionnaire data from the earlier study were re-analysed to provide CORE-10 scores, Only participants who answered all ten constituent items of the CORE-10 scale were included. This accounts for a slight reduction in the sample compared with the results reported by Cliff and Morrison (2011), as the full scale can be scored successfully with up to three missing items. Table 1 reports the baseline and follow-up results and shows a significant improvement in CORE-10 scores. As with the West Kent and Medway data, items that showed significant changes were all components of the 'problems' sub-scale: I have felt tense, anxious or nervous; I have felt despairing or hopeless; I have felt unhappy, and Unwanted images or memories have been distressing me.

As no significant difference was found at baseline and follow-up on CORE-10 for the East Kent and West Kent and Medway samples, it was considered warranted to combine the data. Table 1 also reports a clearly significant improvement found on CORE-10 for this combined sample. Item comparisons again showed that specific improvements took place at the level of symptoms: I have felt tense, anxious or nervous; I have had difficulty getting to sleep or staying asleep; I have felt despairing or hopeless; I have felt unhappy, and Unwanted images or memories have been distressing me.

Participants with CORE-10 scores above the clinical threshold

CORE-10 has a clinical threshold (a score of 11) for referral to specialist services. There is also a clinically significant change score (six points), which reflects either improvement or

worsening in mental distress. Participants below the threshold include those with a history of mental health challenges currently in good health but still engaged with community support services. In the present study, 13 participants were above the clinical threshold at baseline. None of them showed a worsening of mental distress and five showed a reduction of 6 or more points on the CORE-10. For the earlier East Kent sample, 18 were above the clinical threshold, none worsened and nine showed a reduction of at least six points. For the combined sample, therefore, 48% of participants above the clinical threshold, showed a clinically important improvement in their levels of mental distress.

Qualitative findings

All regular participants in the singing groups were offered the opportunity to undertake an interview and 25 volunteered. Details of the thematic analysis can be found in Clift, Manship and Stephens (2015). The principal themes identified are in line with previous qualitative studies on singing and wellbeing:

- Enjoyment in attending the singing group
- Having something to look forward to each week
- Social benefits of meeting new people and making friends
- Improved confidence and greater resilience
- A sense of belonging to a group
- Positive impact on mental health and wellbeing
- Relaxation and release tension
- Learning new things
- Sense of challenge and achievement

A short film documentary based on this study, including personal testimonies from several participants, can be viewed at: <http://www.canterbury.ac.uk/news-centre/press-releases/2015/research-shows-singing-improves-mental-health-and-wellbeing.aspx>

Discussion

Since 2000, there has been a clear growth of interest in the value of regular group singing for wellbeing and health in the UK and elsewhere. This is reflected not only in the expansion of community singing groups in the UK, but the substantial increase in evaluation and research documented in recent reviews (Clark and Harding, 2012; Gick and Nicol, 2015; Reagon et al., 2016; Clift et al., 2016). Singing engages people physically, mentally, emotionally and socially and can be seen as a form of exercise on each of these levels, with singing commonly experienced as energising, calming, uplifting, enjoyable, sociable and supportive.

The research challenge, currently, is not so much to evidence such benefits, but to address the extent to which community singing can have clinical benefits for people experiencing challenges to their mental and physical health. In addition, work is needed to explore the feasibility of setting up and running singing groups in association with existing health and social care structures (i.e. through social prescribing, see NVCO, 2016).

The aim in this study was to build upon an earlier project on singing for mental health in

East Kent to test the feasibility of establishing a network of singing for mental health and wellbeing groups in a new area and to assess their effectiveness with respect to improved mental wellbeing. The project was successful in establishing such a network and bringing groups together for larger singing events. In addition, measurable reductions in mental distress and improvements in mental wellbeing were found on the scales employed, supported by uniformly positive qualitative feedback. Here are some typical examples of comments made:

It's been brilliant to have something so specific to get up for, something that I'm looking forward to every single week that it's just, you sit there and think 'Well what's the point?' and then I think 'Well hang on, I've only got another few days until singing group!' Yes it is definitely an inspiration and motivation

I tend very often with bipolar to withdraw into myself and I try not to do that and this has helped. It has been good meeting another group of people

Certainly the singing has helped how I feel in myself, and now I feel more positive. I still know I have the crutch of the tablets but we are working on that... I still get the blips but I feel more able to cope with the blips

Because it has been keeping my general mood up it means I've actually been accessing the services less frequently and less severely I would say. So on the few occasions I have had to get in touch it's been not as bad as it could otherwise have been... I think having the singing group has been keeping me quite balanced for a while which means that it's actually been a lot easier to get through the psychiatric process and waiting lists and things like that so it's been an immense help in that respect

For both studies, a significant reduction in total CORE-10 scores was found indicating reduced mental distress. For those participants at or above the clinical threshold of 11, the changes were particularly marked, with a substantial proportion in each sample showing improvements of 6 points or more. Statistical analysis of changes in CORE items (reported in Clift, Manship and Stephens (2015) needs to be treated with caution as the scale is not validated at the level of individual items. Nevertheless, the items showing the greatest changes are clearly similar for both samples, and reflect specifically the 'symptoms' sub-scale of the full CORE questionnaire.

Comparison of WEMWBS scores at baseline and follow-up showed a good level of reliability, but more interestingly, significant negative correlations were found with CORE-10 and WEMWBS at baseline and follow-up. The two questionnaires contain some items with similar content, but they are very differently focused and the significant negative correlations supports their utility and validity in measuring a mental distress/mental wellbeing continuum.

Limitations of the present study

The present study had a longitudinal, observational design with assessments at baseline and follow-up, but there was no randomised control group or comparison group. As a

result, it not possible to definitively attribute the changes seen to the singing activity or other processes specific to the groups, even though the qualitative feedback indicates that participants themselves commonly made that attribution.

In addition, while the outcomes for mental wellbeing were assessed with validated questionnaires, the data have the limitation of being subjective self-reports of mental health and wellbeing and may be subject to reporting bias.

Nevertheless, the study replicated the findings from an earlier evaluation using the CORE questionnaire, and provides a good foundation for current work in planning a more robust RCT with a local NHS mental health trust. In further research, more objective data based on service utilisation, specialist diagnosis, use of medication and even bio-markers of wellbeing (Fancourt, et al., 2016), should be considered, and health economic assessments made of the cost-effectiveness of singing for mental health interventions (see Coulton et al., 2015).

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