

THE USE OF MUSIC THERAPY IN THE TREATMENT OF MENTAL ILLNESS AND THE ENHANCEMENT OF SOCIETAL WELLBEING

Shentong Wang¹ & Mark Agius²

¹Clare College Cambridge, School of Clinical Medicine, University of Cambridge, Cambridge, UK

²Clare College Cambridge, Department of Psychiatry University of Cambridge, Cambridge, UK

SUMMARY

Music Therapy can be broadly described as the use of Music in a therapeutic context in order to help improve mental health. Music Therapy does not simply imply the playing of music to patients, relaxing though this may be, but in fact it does involve more active involvement of the patient, so as to use the power of music in order to help improve the mental health of patients and in order to treat mental health conditions. We review the evidence for the effect of Music Therapy on Depression, Anxiety, Schizophrenia, Sleep Disorders, and Dementia. Encouraging singing appears to be a good adjunct to treating all of these conditions, and it also seems to help bonding between mothers and children within families. Music appears to be beneficial to both the individual, and also to the improvement of social cohesion. The reasons for this must reside in the nature of music itself as an art form which supports human interactions within society.

Key words: music therapy – depression – anxiety - sleep disorders - dementia

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MUSIC THERAPY- DEFINITION

Music Therapy can be broadly described as the use of Music in a therapeutic context in order to help improve mental health. Brown and Pedder, responding to the question ‘What is therapy?’, argue that therapy is essentially a conversation which involves listening to and playing with those in trouble with the aim of helping them understand and resolve their predicament. (Brown & Pedder 1991)

A clear definition of what music therapy includes is necessary in order to further assess its effects.

It is clear that Music Therapy does not simply imply the playing of music to patients, relaxing though this may be, but in fact it does involve more active involvement of the patient, so as to use the power of music in order to help improve the mental health of patients and in order to treat mental health conditions. The aim of this review is to identify how music therapy can be used to help patients and discuss the evidence for these applications. Among other applications, we in particular wish to assess how the involvement of patients in actively singing can help improve the Mental Health of Patients.

Music therapy is a Post-war phenomenon.

It has proved very difficult to define, but here we quote two authoritative definitions:

- “Music therapy is the professional use of music and its elements as an intervention in medical, educational, and everyday environments with individuals, groups, families, or communities who seek to optimize their quality of life and improve their physical, social, communicative, emotional, intellectual, and spiritual health and wellbeing. Research, practice, education, and clinical training in music therapy are based on professional standards according to cultural, social, and political contexts.” – *World Federation for Music Therapy*;

- “Music therapy is the skilful use of music and musical elements by an accredited music therapist to promote, maintain, and restore mental, physical, emotional, and spiritual health. Music has nonverbal, creative, structural, and emotional qualities. These are used in the therapeutic relationship to facilitate contact, interaction, self-awareness, learning, self-expression, communication, and personal development.” – *Canadian Association for Music Therapy / Association de Musicothérapie du Canada Annual General Meeting, Vancouver, British Columbia, May 6, 1994.*

Therefore Music therapy is not simply about listening to music, but includes also elements of music making and discussion, in order to access the ‘nonverbal, creative, structural, and emotional qualities’ of music so as to achieve self-awareness, learning, self-expression and personal development by the patient as well as contact, communication and interaction with other persons.

MUSIC THERAPY – A LITERATURE SEARCH

A literature search demonstrates that music therapy has been applied to several mental illnesses. Research presently exists which examines the efficacy of music therapy in many specific areas, including depression, dementia, schizophrenia and psychosis. There are also broader investigations, which examine more general areas, such as wellbeing or sleep quality.

In a systematic review of music therapy practice and outcomes with acute adult psychiatric in-patients, 98 papers were identified, of which 35 reported research findings. No single clearly defined model exists for music therapy with adults in acute psychiatric in-patient

settings, however all the studies with significant positive effects used active musical participation with a degree of structure and were delivered in four or more sessions. However, the greater frequency of therapy, active structured music making with verbal discussion, consistency of contact and boundaries, as well as an emphasis on building a therapeutic relationship and building patient resources all appear to be of particular importance (Carr 2013).

Study of the effects of music on the patients' psychological sphere have confirmed that it reduces psychopathologic symptoms (such as anxiety and depression), it improves the patient's self-rating of symptoms and general wellbeing, it influences quality and disorders of sleep, it reduces pain, and furthermore it improves the patient's 'moral immunity' and the patients' openness, readiness, co-operation in treatment process (Sliwka 2006).

MUSIC THERAPY IN DEPRESSION

Depression is the medical condition most studied regarding the effectiveness of music therapy. It has been suggested that Music therapy is effective in the treatment of depression because active music-making within the therapeutic frame offers the patient opportunities for new aesthetic, physical and relational experiences (Maratos 2011).

However, simply listening to Music is said to reduce symptoms of depression in adults (17 studies). Music listening over a period of time helps to reduce depressive symptoms in the adult population. Daily intervention does not seem to be superior over weekly intervention and it is recommended that the music listening session should be conducted repeatedly over a time span of more than 3 weeks to allow an accumulative effect to occur. All types of music can be used as listening material, depending on the preferences of the listener (Chan 2011).

Music Therapy has been shown to be effective combined with Standard Care in treating depression. Individual music therapy combined with standard care is effective for depression among working-age people with depression. The results of this study along with the previous research indicate that music therapy with its specific qualities is a valuable enhancement to established treatment practices (Erkkilä 2011). This is based on a meta-analysis of 9 studies including 411 participants. The findings of the meta-analysis indicate that music therapy provides short-term beneficial effects for people with depression. Music therapy added to treatment as usual (TAU) seems to improve depressive symptoms compared with TAU alone. Furthermore, music therapy plus TAU was not associated with more or fewer adverse events than TAU alone. Music therapy also showed efficacy in decreasing anxiety levels and improving the functioning of depressed individuals. In interpreting these statements, it is important to clearly describe the music therapy (Aalbers 2017). It is important to note that Music Therapy needs to be seen as an

adjunct to 'usual Care', which must follow the usual treatment guidelines for depression, including appropriate treatment with antidepressants.

Regarding the effect of music therapy in specific groups of patients, the effects on psycho-physiological indices of music intervention, together with the presence of nurses has been studied in caregivers to cancer patients. Both music intervention with nursing presence and recorded music interventions had beneficial effects on anxiety, depression and blood volume pulse amplitude, however music intervention with nursing presence was more effective in lessening anxiety and on improving the ease of getting to sleep compared with recorded music (Lai 2012).

Music listening has also been studied in depressed patients over the age of 65. Music Listening has been said to reduce symptoms of depression in older (over 65) adults. Thus, In the music group, there were statistically-significant decreases in depression scores ($P < 0.001$) and blood pressure (Chan 2009), and depression levels reduced weekly in the music group, indicating a cumulative dose effect, and a statistically significant reduction in depression levels was found over time in the music group compared with non-music group. Listening to music can help older people to reduce their depression level (Chan 2012).

EFFECTS OF SINGING IN DEPRESSION

We have been particularly interested in recent studies regarding the effect of encouraging patients with depressive symptoms to sing or join choirs, the latter being in particular a community group activity. Recent studies have shown that singing improves symptoms of depression.

In patients, choir participation improved vitality, overall mental health and anxiety. In non-patients, choir participation improved anxiety ($p < 0.05$). Participants experienced the choirs as both an uplifting musical activity and a supportive community group.

Group singing interventions may have beneficial effects on HRQoL (health related quality of life), anxiety, depression and mood. Community group singing appears to have a significant effect on mental health-related quality of life, anxiety and depression, and it may be a useful intervention to maintain and enhance the mental health of older people (Coulton 2015).

In working age patients, studies were heterogeneous with significant methodological limitations, allowing only a weak recommendation for group singing as an intervention for adults with chronic health problems (Reagon 2017, 2016). However, when comparing 'Music therapy' to 'recreational singing', the level of depressive symptoms improved significantly more in those assigned to music therapy ($n=60$) than in recreational singing ($n=53$), both in 6th week (mean difference 3.0 scores, 95% CI 1.21 to 4.79, $p=0.001$) and 12th week (Werner 2017). In general, singing is shown to improve symptoms of depression.

SINGING AND POST-NATAL DEPRESSION

Overall, among all mothers with symptoms of Post-Natal Depression, there was a non-significant faster improvement in symptoms in the singing group (Fancourt 2018).

Among all mothers with symptoms of PND, there was a non-significant faster improvement in symptoms in the singing group. When isolating mothers with moderate-severe symptoms of PND, this result became significant, with a faster improvement in symptoms in the singing group.

Data show associations between singing to babies and fewer symptoms of postnatal depression. Data also show associations with enhanced wellbeing, self-esteem and improved mother-infant bond (Fancourt 2018, 2017). However, as mothers experience depressive symptoms, their infant directed (ID) singing may lack the sensitivity and emotional expression that infants need for affect regulation. An intervention that combines interaction coaching and ID singing may help mothers with depressive symptoms to engage in sensitive and emotionally synchronized interactions with their infants. The Sing&Grow programme in Australia is one of the first studies to take a quantitative approach. It is a Community driven music therapy project that provides services for young children and their families. The programs focus on strengthening family relationships, building capacity in parents to support their children's development in the early years of life, and encouraging the use of music within communities (Abad 2004).

MUSIC THERAPY IN SCHIZOPHRENIA AND PSYCHOSIS

It has been reported that music therapy and exercise have been found to be useful for unspecified negative symptoms of schizophrenia (Veerman 2017, Helgason 2013). This was emphasized by a randomized study by Ulrich (2007), which studied Thirty-seven patients with psychotic disorders, who were randomly assigned to experimental and control groups (Ulrich 2007). Both groups received medication and treatment indicated for their disorder. Additionally, the experimental group (n=21) underwent group music therapy (Ulrich 2007). Significant effects of music therapy were found in the patients' self-evaluation of their psychosocial orientation and in negative symptoms (Ulrich 2007). No differences were found in the quality of life. It was concluded that Musical activity diminished negative symptoms and improved interpersonal contact (Ulrich 2007).

Pfeiffer et al. (1987) studied the effects of a course of music therapy with free improvisation, consisting of 27 sessions over a period of 6 months, in 7 patients with a diagnosis of schizophrenia or schizoaffective psychosis, with a control group of a similar number. Significant positive changes were found in the self-assessment

questionnaires completed by the participants. However a deterioration, was observed stated in the therapy group at follow-up six months post-therapy.

Hayashi et al. (2002) studied the efficacy of group musical therapy for inpatients with DSM-IV schizophrenia or schizoaffective psychosis in thirty-four therapy group subjects in a long-stay female ward (Hayashi 2002). The patients received 15 group musical therapy sessions over 4 months, while 32 waiting group subjects from another ward were used as a control group (Hayashi 2002). The assessment included measures of psychotic symptoms, objective quality of life and subjective musical experiences (Hayashi 2002). There appeared to be significant advantages in the therapy group in some measures concerning personal relations and furthermore there was a subjective sense of participation in a chorus activity (Hayashi 2002). However, the follow-up evaluation suggested that the improvement in personal relations and musical experiences of these chronic psychotic patients might be only short-lived (Hayashi 2002).

Another study by Talwar et al. (2006) was somewhat less positive. Up to 12 weeks of individual music therapy plus standard care was compared with standard care alone. 81 patients were randomised (Talwar 2006). Assessments of mental health, global functioning and satisfaction with care were conducted at 3 months (Talwar 2006). Two-thirds of those randomised to music therapy attended at least four sessions (median attendance, eight sessions) (Talwar 2006). A Multivariate analysis demonstrated a trend towards improved symptom scores among those randomised to music therapy, especially in general symptoms of schizophrenia (Talwar 2006). It was concluded that the effects and cost-effectiveness of music therapy for acute psychosis should be further explored (Talwar 2006).

Silverman (2003) carried out a meta-analysis was conducted on 19 studies of music therapy in schizophrenia. Results indicated that music has proven to be significantly effective in suppressing and combating the symptoms of psychosis ($d=+0.71$). There were no differing effects between live versus recorded music and between structured music therapy groups versus passive listening, nor were there differing effects between preferred versus therapist-selected music. Furthermore, classical music was not as effective as nonclassical music in reducing psychotic symptoms. This supports the therapeutic potential of popular music in treating patients with psychotic symptoms.

Various different methodologies of delivering music therapy to patients with schizophrenia have been described. Schmuttermayer (1980, 1983) described four types of music therapy (listening, singing, dancing and playing instruments) which can be combined to obtain a "graduated group-centred music therapy" in order to treat patients schizophrenia. Each of the therapy types is said to act in a different way on the variables "anxiety" and "activity", and it was recorded to be possible to

influence these variables during group-centered treatment and to lead the group towards modes of communication and behaviour that are more appropriate to reality.

Regarding the way in which music therapy works in schizophrenia, Insellmann has pointed out the emotional and cognitive aspects of music perception and its possible influence on self perception and strengthening of ego. It was suggested that in patients with schizophrenia, the effects of music therapy were related to self-object-differentiation.

MUSIC IMPROVES SLEEP QUALITY

It has been shown that the use of music does improve sleep quality in several groups of patients.

In Older Adults, music resulted in significantly better sleep quality in the experimental group, as well as significantly better components of sleep quality: better perceived sleep quality, longer sleep duration, greater sleep efficiency, shorter sleep latency, less sleep disturbance and less daytime dysfunction ($P=0.04-0.001$). Sleep improved weekly, indicating a cumulative dose effect (Lai 2005).

In students, music statistically significantly improved sleep quality; Depressive symptoms decreased statistically significantly in the music group (Harmat 2008).

In abused women in shelters, the results indicated that music therapy constituted an effective method for reducing anxiety levels. Results also indicated a significant effect on sleep quality for the experimental group, but not for the control group (Hernández-Ruiz 2005).

In a meta-analysis of Music-assisted relaxation to improve sleep quality, which studied five randomized controlled trials with 170 participants, Music-assisted relaxation was shown to have a moderate effect on the sleep quality of patients with sleep complaints. Thus Music-assisted relaxation can be used without intensive investment in training and materials and is therefore cheap, easily available and can be used by nurses to promote music-assisted relaxation to improve sleep quality (de Niet 2009).

MUSIC THERAPY AND DEMENTIA

Music therapy has also been studied in Dementia.

It has been suggested that Receptive music therapy (that is, listening to music) could reduce agitation, behavioural problems, and anxiety in older people with dementia, and it appears to be more effective than interactive music therapy. However, providing people with dementia with at least five sessions of a music-based therapeutic intervention probably reduces depressive symptoms but has little or no effect on agitation or aggression. There may also be little or no effect on emotional well-being or quality of life, overall behavioural problems and cognition (Tsoi 2018, Van der Steen 2017).

The reason music has been thought to be helpful in patients with dementia is because Music has a number of 'design features' that make it uniquely equipped to engage multiple aspects of the self. Each design feature interacts with different aspects of the self to varying degrees, promoting overall wellbeing. Thus Baird's framework of music therapy may be useful for the diagnosis and treatment of impairments of self in people with dementia, and may highlight how music, given its ability to engage all aspects of the self simultaneously, can result in an overall enhanced sense of self (Baird 2018).

There have been reports that Preferred Music Therapy, that is, playing music which is the Patient's own preference can help Anxiety and Agitation in Dementia. Thus Sung in 2005 reported that Preferred music (Patient's preference) has positive effects on decreasing agitated behaviours in older people with dementia (NB Small numbers) (Sung 2005). His reported numbers were, however, small.

Hence, the effect of Music therapy on agitation in Dementia has been further studied. A metaanalysis of 17 studies with 620 participants suggest using five sessions of a music-based therapeutic intervention probably reduces depressive symptoms but had little or no effect on agitation or aggression. There may also have little or no effect on emotional well-being or quality of life, overall behavioural problems and cognition. The reporters further stated that they were uncertain about effects on anxiety or social behaviour, and about any long-term effects (Van der Steen 2017, Cooke 2010).

SINGING AND DEMENTIA

The effect of singing has been studied in dementia. Patients with both dementia and depression have been encouraged to join choirs, as in the Michaelhouse Corale in Cambridge, UK.

Singing and painting interventions may reduce pain and improve mood, quality of life, and cognition in patients with mild Alzheimers Disease, with differential effects of painting for depression and singing for memory performance. Depression was reduced over time in painting group only. Verbal Memory performance remained stable over time in singing group, but decreased in painting group (Pongan 2017).

SINGING AND INCREASED DEMENTIA AWARENESS

Harris et al. studied the effect of using an intergenerational choir in order to attempt to make a university community more dementia friendly. They reported that results across all four cohorts showed in the students: changed attitudes, increased understanding about dementia and the lived experience, reduced dementia stigma, and the development of meaningful social connections. People with dementia and their family members expressed feelings of being part of a community (Harris 2018).

CONCLUSION

It appears clear that the use of music as a therapeutic tool is very useful in a number of different mental health conditions and in promoting general mental wellbeing.

This is particularly true when music is an adjunct for treating depression, anxiety, schizophrenia, and also dementia.

Encouraging singing appears to be a good adjunct to treating all of these conditions, and it also seems to help bonding between mothers and children within families.

Music appears to be beneficial to both the individual, and also to the improvement of social cohesion. The reasons for this must reside in the nature of music itself as an art form which supports human interactions within society.

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Contribution of individual authors:

Shentong Wang carried out the main literature search and developed and presented the presentation on which this paper is based.

Mark Agius supervised the project and helped in developing the final text.

References

1. Aalbers S, Fusar-Poli L, Freeman RE, Spreen M, Ket JC, Vink AC, Maratos A, Crawford M, Chen XJ, Gold C: Music therapy for depression. *Cochrane Database Syst Rev* 2017; 11:CD004517
2. Abad V & Edwards J: Strengthening families: A role for music therapy in contributing to family centred care. *Australian Journal of Music Therapy* 2004; 15:3-17
3. Baird A, Thompson WF: The Impact of Music on the Self in Dementia. *J Alzheimers Dis* 2018; 61:827-841
4. Brown D, Pedder J: *Introduction to Psychotherapy* Routledge, 1991
5. Carr C, Odell-Müller H, Priebe S: A systematic review of music therapy practice and outcomes with acute adult psychiatric in-patients. *PLoS One* 2013; 8:e70252
6. Chan MF, Wong ZY, Thayala NV: The effectiveness of music listening in reducing depressive symptoms in adults: a systematic review. *Complement Ther Med* 2011; 19:332-48
7. Chan MF, Chan EA, Mok E, Kwan Tse FY: Effect of music on depression levels and physiological responses in community-based older adults *Int J Ment Health Nurs* 2009; 18:285-94
8. Chan MF, Wong ZY, Onishi H, Thayala NV: Effects of music on depression in older people: a randomised controlled trial. *J Clin Nurs* 2012; 21:776-83
9. Cooke ML, Moyle W, Shum DH, Harrison SD, Murfield JE: A randomized controlled trial exploring the effect of music on agitated behaviours and anxiety in older people with dementia. *Aging Ment Health* 2010; 14:905-16
10. Coulton S, Clift S, Skingley A, Rodriguez J: Effectiveness and cost-effectiveness of community singing on mental health-related quality of life of older people: randomised controlled trial. *Br J Psychiatry* 2015; 207:250-5
11. de l'Etoile SK, Leider CN: Acoustic parameters of infant-directed singing in mothers with depressive symptoms. *Infant Behav Dev* 2011; 34:248-56
12. de Niet G, Tiemens B, Lendemeijer B, Hutschemaekers G: Music-assisted relaxation to improve sleep quality: meta-analysis. *J Adv Nurs* 2009; 65:1356-64
13. Edwards: *Antecedents of contemporary uses for music in healthcare context: the 1890s to the 1940s* p181-202, 2007
14. Erkkilä J, Punkanen M, Fachner J, Ala-Ruona E, Pöntiö I, Tervaniemi M, Vanhala M, Gold C: Individual music therapy for depression: randomised controlled trial. *Br J Psychiatry* 2011; 199:132-9
15. Fancourt D, Perkins R: Effect of singing interventions on symptoms of postnatal depression: three-arm randomised controlled trial. *Br J Psychiatry* 2018; 212:119-121
16. Fancourt D, Perkins R: Associations between singing to babies and symptoms of postnatal depression, wellbeing, self-esteem and mother-infant bond. *Public Health* 2017; 145:149-152
17. Harris PB, Caporella CA: Making a university community more dementia friendly through participation in an intergenerational choir. *Dementia (London)* 2018; 1:1471301217752209
18. Harmat L, Takács J, Bódizs R: Music improves sleep quality in students. *J Adv Nurs* 2008; 62:327-35
19. Hayashi N, Tanabe Y, Nakagawa S, Noguchi M, Iwata C, Koubuchi Y, Watanabe M, Okui M, Takagi K, Sugita K, Horiuchi K, Sasaki A, Koike I: Effects of group musical therapy on inpatients with chronic psychoses: a controlled study. *Psychiatry Clin Neurosci* 2002; 56:187-93
20. Helgason C, Sarris J: Mind-body medicine for schizophrenia and psychotic disorders: a review of the evidence. *Clin Schizophr Relat Psychoses* 2013; 7:138-48
21. Hernández-Ruiz E: Effect of music therapy on the anxiety levels and sleep patterns of abused women in shelters. *J Music Ther* 2005; 42:140-58
22. Inselmann U: Treatment of psychotic patients with music therapy. *Z Klin Psychol Psychopathol Psychother.* 1995; 43:249-60
23. Lai HL, Li YM, Lee LH: Effects of music intervention with nursing presence and recorded music on psychophysiological indices of cancer patient caregivers. *J Clin Nurs* 2012; 21:745-56
24. Lai HL, Good M: Music improves sleep quality in older adults. *J Adv Nurs* 2005; 49:234-44
25. Maratos A, Crawford MJ, Procter S: Music therapy for depression: it seems to work, but how? *Br J Psychiatry.* 2011; 199:92-3
26. Pfeiffer H, Wunderlich S, Bender W, Elz U, Horn B: Music improvisation with schizophrenic patients - a controlled study in the assessment of therapeutic effects. *Rehabilitation (Stuttg)* 1987; 26:184-92
27. Pongan E, Tillmann B, Leveque Y, Trombert B, Getenet JC, Auguste N, Dauphinot V, El Haouari H, Navez M, Dorey JM, Krolak-Salmon P, Laurent B, Rouch I; LAC Mé Group: Can Musical or Painting Interventions Improve Chronic Pain, Mood, Quality of Life, and Cognition in Patients with Mild Alzheimer's Disease? Evidence from a Randomized Controlled Trial. *J Alzheimers Dis* 2017; 60:663-677

28. Reagon C, Gale N, Dow R, Lewis I, van Deursen R: Choir singing and health status in people affected by cancer. *Reagon C, Gale N, Dow R, Lewis I, van Deursen R, Eur J Cancer Care (Engl)* 2017; 26:5
29. Reagon C, Gale N, Enright S, Mann M, van Deursen R: A mixed-method systematic review to investigate the effect of group singing on health related quality of life. *Reagon C, Gale N, Enright S, Mann M, van Deursen R, Complement Ther Med* 2016; 27:1-11
30. Schmuttermayer R: Possibilities for inclusion of group music therapeutic methods in the treatment of psychotic patients. *Psychiatr Neurol Med Psychol (Leipz)* 1983; 35:49-53
31. Schmuttermayer R: Methodological considerations and practical experiences with music therapy in psychotics. *Psychiatr Neurol Med Psychol (Leipz)* 1980; 32:739-44
32. Silverman MJ: The influence of music on the symptoms of psychosis: a meta-analysis. *J Music Ther* 2003; 40:27-40
33. Sliwka A, Jarosz A, Nowobilski R: Music therapy as a part of complex healing. *Pol Merkur Lekarski* 2006; 21:401-5
34. Sung HC, Chang AM: Use of preferred music to decrease agitated behaviours in older people with dementia: a review of the literature. *J Clin Nurs* 2005; 14:1133-40
35. Sung HC, Chang AM, Lee WL: A preferred music listening intervention to reduce anxiety in older adults with dementia in nursing homes. *J Clin Nurs* 2010; 19:1056-64
36. Talwar N, Crawford MJ, Maratos A, Nur U, McDermott O, Procter S: Music therapy for in-patients with schizophrenia: exploratory randomised controlled trial. *Br J Psychiatry* 2006; 189:405-9
37. Tsoi KKF, Chan JYC, Ng YM, Lee MMY, Kwok TCY, Wong SYS: Receptive Music Therapy Is More Effective than Interactive Music Therapy to Relieve Behavioral and Psychological Symptoms of Dementia: A Systematic Review and Meta-Analysis. *J Am Med Dir Assoc* 2018. pii: S1525-8610(17)30694-1
38. Ulrich G, Houtmans T, Gold C: The additional therapeutic effect of group music therapy for schizophrenic patients: a randomized study. *Acta Psychiatr Scand* 2007; 116:362-70
39. Van der Steen, van Soest-Poortvliet, van der Wouden, Bruinsma, Scholten & Vink: Music-based therapeutic interventions for people with dementia, *Cochrane Database Syst Rev* 2017; 5:CD003477
40. Veerman SRT, Schulte PFJ, de Haan L: Treatment for Negative Symptoms in Schizophrenia: A Comprehensive Review. *Drugs* 2017; 77:1423-1459
41. Werner J, Wosch T, Gold C: Effectiveness of group music therapy versus recreational group singing for depressive symptoms of elderly nursing home residents: pragmatic trial. *Aging Ment Health* 2017; 21:147-155

Correspondence:

Shentong Wang, BA (Cantab)
Clare College Cambridge, School of Clinical Medicine, University of Cambridge
Cambridge, UK
E-mail: sw693@cam.ac.uk