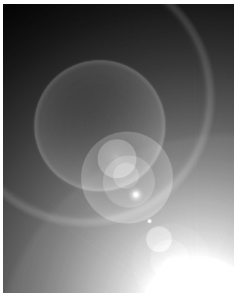

ORIGINAL ARTICLE

Using music to develop peer interaction: an examination of the response of two subjects with a learning disability

Jeff Hooper, Craigmill Skill Centre, Strathmartine Hospital, Dundee DD3 0PG, UK

Summary

The paper examines the response of two subjects who attended a programme of music activity therapy in which the music activities encouraged peer interaction. Music activity therapy was compared with a control condition (i.e. ball and target games). Both treatment conditions increased the level of positive interaction. The absence of negative interaction was also significant. The results affirmed the value of nonverbal interventions in encouraging interaction, and offered insights into the relationship between the two subjects.

Keywords *Deinstitutionalization, music therapy, peer interaction, quantitative study*

Introduction

In *Music Therapy: International Perspectives*, Maranto (1993) provided a global classification of music therapy clinical practice and defined 14 schools of practice within which there were 6 categories of musical experience and no fewer than 123 music therapy techniques. In doing so, she affirmed the richly diverse way in which music is used as a therapy. Maranto described one school of practice, 'music activity therapy' as making 'use of various musical activities ... and the therapeutic relationship to achieve musical and/or nonmusical therapeutic goals' (p. 686).

The present author has worked as a music therapist with people who have learning disabilities for a number of years. In that time, he has broadened his conception of music therapy to include the use of music activity therapy in treatment programmes. It is a distinction which acknowledges that, because of their level of musicianship and/or degree learning disability, it may not be appropriate for some clients to develop the musical content through improvization. Rather, the author presents music within the context of an activity, or series of activities, which are structured to encourage the development of particular nonmusical skill(s).

Music activity therapy may be used in this way to develop a range of nonmusical skills. These may be physical or cognitive skills; however, the evidence supporting the use of music to facilitate changes in social behaviour is of particular relevance to the present paper.

In research carried out in the 1970s (of which there appear to be no contemporary examples), clinicians who paired behavioural techniques and music therapy firmly established that the contingent use of music reinforced appropriate social behaviour (Jorgenson & Parnell 1970; Reid *et al*. 1975; McCarthy *et al*. 1978). Later, as research moved forward, other work examined the effect of active music making on group cohesiveness. The results were inconsistent. Anshel and Kipper (1988) highlighted the value of group singing in promoting interpersonal trust and co-operation. The subjects were adult males who participated in a continuing education programme. Cordobes (1997) concluded that, while a group song-writing activity was an effective means of addressing the treatment issues of HIV-seropositive subjects, it was no more effective than a game playing activity or a control condition (no intervention) in improving group cohesion. Finally, Brown *et al*. (1989) and Smith and Smith (1989) established that structured interaction facilitated more frequent successful interaction. In light of these latter investigations, music therapy researchers demonstrated that music activities which structured interaction assisted the mainstreaming of children with learning disability (Hughes *et al*. 1990; Humpal 1991).

A person with a learning disability often has to contend with sensory, communication and physical impairments and abnormal behaviour patterns. As a result, these may present such a challenge to the communicative process that they experience extreme difficulty establishing and sustaining social contact with their carers and peers.

The present paper evaluates a programme of music activity therapy. The subjects (Margaret and Lorna) had just moved from a large, ward-based environment to a four-bedded, self-contained flat. The author received a referral for Margaret, Lorna and their two 'flat mates' for music therapy. The multidisciplinary team had identified the importance of developing peer relationships between the members of the flat, and consequently, the present author decided that it would be appropriate to treat them together as a group. The aim of the group session was to use music activity therapy to encourage peer interaction and co-operation.

The four 'flat mates' were encouraged to attend all the sessions. However, as the full results of the present study indicated (Hooper 2001), only two subjects, i.e. Margaret (subject A) and Lorna (subject B), attended all the sessions and remained present throughout. The other two subjects either refused to attend, refused to participate when they did attend or restlessly wandered in and out of the sessions. With four subjects attending the sessions, there were six possible relationships. The present paper concentrates on the relationship between Margaret and Lorna. It accounted for 61% of the total number of interactions and it was the predominant relationship to develop during the course of this study.

Subjects and methods

Subjects

Margaret was a 34-year-old woman with severe learning disability, who had no particular friends amongst her peers. Lorna was a 50-year-old woman with severe learning disability, who was diagnosed with the associated condition of bipolar affective disorder and who initiated interactions with staff when elated. In common with the other two subjects who attended the sessions, both Margaret and Lorna rarely interacted positively with their peers, although they were happy to interact with staff. Members of staff had commented that their interactions were generally limited to negative outbursts of aggression. Both subjects presented challenging behaviours. Margaret enjoyed social outings, but became very vocal when not included, banging and kicking doors and windows, stripping off clothing, and being physically aggressive towards staff and her peers. Lorna presented a range of challenging behaviours, including self-mutilation and stripping. Both subjects had limited expressive skills: Margaret relied on a core vocabulary of single words; and Lorna, who displayed echolalia and perseveration, produced short phrases and longer sentences to initiate and, through repetition, maintain an interaction.

Design

The subjects attended 10 sessions which were carried out by the present author in the subjects' flat. In order to control for the possibility that any type of activity would have a positive effect on peer interaction, there were five treatment sessions (i.e. music activities structured to encourage interaction and co-operation) followed by five control sessions (i.e. ball and target games structured to encourage interaction and co-operation).

Besides developing musical responses, the music sessions also encouraged the subjects either to pass the bells to someone else in the group or to hold the drum for one another to play. The activities used simple song forms which the present author sang accompanied by guitar. He observed the subjects in a sing-song and selected songs which they appeared to enjoy (e.g. 'Jingle Bells', 'Oh When the Saints Come Marching In'). While the prompts to pass or share an instrument were always spoken, the words of these songs were adapted to act as a commentary on who was playing and on the interactions taking place.

In the control session, the subjects took part in ball games. They caught and threw the ball to the present author and other members of the group, and they co-operated by holding a basket, into which quoits were thrown, for each other. The sessions were held weekly. The treatment sessions were 25–30 min in length and the control sessions 15–20 min.

Measures

All sessions were videoed and evaluated by two trained raters who were unaware of the purpose of the study and who independently reviewed the video footage. The raters recorded each interaction on a check sheet, and noted the subjects involved and whether the interaction was positive or negative, prompted or unprompted. A negative interaction was defined as aggressive (e.g. pushing or slapping) or inappropriate (e.g. touching or tickling). Touching and tickling were inappropriate, since these actions were not considered to be 'normal' or accepted ways for any of the subjects to interact. A positive interaction was one conforming to the demands of the activities (e.g. passing or sharing an instrument or a ball with another member of the group). An interaction could be prompted either physically or verbally. There was 79% agreement between the two raters.

Before the treatment commenced, the present author collected a baseline measure. He observed the subjects in their flat for five 30-min periods during the course of a single week. The charge nurse gave consent for these visits, since the subjects were unable to do so themselves owing to the degree of their learning disability. Consequently, the subjects

were not directly informed of the purpose of these visits and it was possible that their behaviour was not influenced by the present author's presence as an observer.

The present author recorded the peer interactions and used a simple check list to note between whom each interaction was, and whether it was a positive or negative interaction. While a negative interaction has already been defined above, a positive interaction was defined in this instance as a simple acknowledgement of one another (e.g. eye contact, sitting quietly alongside, or greeting one another by name or with a spoken or signed 'hello'). The criteria chosen reflected the interactions expected from subjects with limited communication skills and challenging behaviours.

Results

Table 1 shows the number of unprompted interactions which took place between Margaret and Lorna at baseline. It records the number of prompted, unprompted and incomplete interactions which occurred in each treatment session. In an incomplete interaction, the subject either ignored a prompt to interact, did not respond to the interaction of her peer or failed to complete an activity. Table 1 also shows the number of positive and negative interactions which occurred in each treatment session. The first figure in each column shows the total number of interactions. The second, in parenthesis, is the number of occasions on which Margaret was the dominant partner in an interaction. Margaret interacted with Lorna either after prompting (prompted), by choosing to interact (unprompted) or by participating in an interaction which was not completed (incomplete) (Table 1).

The baseline measures confirmed that Margaret and Lorna avoided interacting with each other. While Lorna sat in the sitting room staring at the television, Margaret, eager to attract attention, was happy to interact with anyone except her peer. She moved restlessly about the flat, dividing her time between the sitting room (where she ignored Lorna), the duty room window, her bedroom and any passing members of staff.

The results indicate that, compared to the baseline measures, each treatment condition enjoyed considerable success in encouraging positive interaction. The total number of interactions in the control sessions ($n = 94$) was almost double the figure for the treatment sessions ($n = 50$). However, this does not imply that the control condition was twice as effective. The control activities were short and completed more frequently and quickly: a typical control session of 20 min included 28 interactions (session 8). In contrast, the time given to develop musical responses in one treatment session (session 3) resulted in only seven interactions during a 9-min period.

While the prompted and incomplete interactions are a measure of how successfully the present author engaged each subject in the sessions, the unprompted interactions offer an indication of how the subjects *themselves* responded to each treatment condition. On all but two occasions (sessions 4 and 7), Margaret initiated 60% or more of the unprompted interactions, the results of which suggest that Margaret was the 'active' partner in the interaction and which mirror the behaviour observed at baseline. However, while Lorna preferred a more 'passive' role, she was prepared to initiate interactions with a peer when 'elated'.

Finally, the results also show an absence of negative interactions, which is significant in understanding the relationship between Margaret and Lorna.

Discussion

In music therapy, music is used as a nonverbal and nonthreatening means of communication, and clients are encouraged to communicate through their music rather than by having to rely on words. In the same way, while the music activities chosen for the treatment sessions used the words of songs to encourage interaction, Margaret and Lorna interacted by participating wordlessly in music-making. The present author included control sessions to allow for the possibility that any type of activity would influence interactive behaviour. The control activities also encouraged interaction without having to rely on words. The present

Table 1 Recorded interactions between Margaret and Lorna

Session	Baseline	Prompted	Unprompted	Incomplete	Positive	Negative
1	0 (0)	7 (3)	6 (4)	0 (0)	13 (7)	0 (0)
2	0 (0)	7 (6)	1 (1)	3 (3)	8 (7)	0 (0)
3	0 (0)	4 (2)	3 (2)	0 (0)	7 (4)	0 (0)
4	0 (0)	7 (3)	7 (1)	0 (0)	14 (4)	0 (0)
5	0 (0)	7 (6)	1 (1)	0 (0)	8 (7)	0 (0)
6		7 (6)	0 (0)	11 (4)	7 (6)	0 (0)
7		16 (6)	5 (2)	2 (1)	21 (8)	0 (0)
8		18 (9)	10 (6)	0 (0)	28 (15)	0 (0)
9		11 (6)	6 (5)	0 (0)	17 (11)	0 (0)
10		17 (10)	4 (4)	1 (1)	21 (14)	0 (0)

author anticipated that the music activities would be the more effective intervention in encouraging interaction.

The results appear to show that music therapy was the least effective intervention, but they are hardly conclusive. As already indicated, the present study did not compare like with like. Time was taken in the treatment sessions to develop each subject's musical response, whereas the control activities were short. In music therapy, the present author used the activities to develop a musical interaction; for example, the accompanying song was adapted to encourage turn-taking between the present author and Margaret (e.g. 'Margaret, play on the drum. Now it's my turn to play the drum.'). In the control session, the present author threw a ball to either Margaret or Lorna, who threw it back straight away or passed it on to their peer. The activity was completed quickly and there were more opportunities to encourage each subject to interact and co-operate within a session.

The results may have failed to confirm which of the activities was the most effective in encouraging interaction; however, they did show that both techniques facilitated prompted interaction and increased the level of unprompted interaction in comparison with the baseline measure. In doing so, the present study affirmed that nonverbal interventions have the potential to overcome any obstacle to interaction posed by varying communicative abilities. It appeared that both the treatment and the control activities diffused any tension associated with peer interactions by diverting attention on to a particular task.

The comments of an occupational therapy colleague were also pertinent to this discussion. She described how Margaret and Lorna interacted and co-operated together as they shared kitchen tasks in occupational therapy sessions carried out subsequent to the 10 treatment sessions. She commented on how Lorna was holding a saucepan while Margaret stirred its contents. These remarks are significant, since they provide evidence of another nonverbal activity that encouraged the two subjects to interact. It would appear that music therapy is just one of a range of options which can be considered when developing the peer interactions of subjects with a learning disability. The most suitable choice for each client will be determined by their own preference and interests.

The present results indicate an absence of negative interaction, and offer an important insight into the relationship between Margaret and Lorna.

Typal categorization is one of the oldest ways of distinguishing individuals with respect to personality differences. The present author has already referred to Margaret and Lorna as 'active' and 'passive' participants, respectively, a variation of perhaps the best known typology which was coined by Carl Jung in 1921. Jung regarded extroversion and introversion as the two fundamental attitudes underlying human experience (Johnson 1994). Extroversion is now often understood to equate with sociability (i.e. the 'active' personality of Margaret) and introversion is seen as a tendency to withdraw from social contact (i.e. the 'passive' personality of Lorna). The process of interacting itself is often viewed as one of dynamic interdependence. When interacting with others, we are constantly influencing and being influenced by them, and as a consequence, when we interact, we stay co-ordinated with each other by modifying and adjusting our verbal behaviour (e.g. the speed of conversation or the phrasing of messages).

When Margaret and Lorna interacted nonverbally, they perhaps responded positively to both treatment conditions as their respective characters, 'active' and 'passive', complemented one another. In a sense, they were predisposed to stay co-ordinated and interact. When Lorna ('passive') initiated an interaction and became 'active', Margaret ('active') now became 'passive'. In these instances, the absence of negative interactions provided evidence of dynamic interdependence.

An examination of the incomplete interactions further confirmed Margaret and Lorna's ability to interact. In an incomplete interaction, the subject either ignored a prompt to interact, did not respond to the interaction of her peer or failed to complete an activity. There were six sessions when all the interactions between Margaret and Lorna were successfully completed. In the remaining four sessions, the incomplete interactions were not the result of an ignored prompt or an unwillingness to reciprocate an interaction. On each occasion, Lorna failed to complete an activity. In the control sessions, she dropped the ball passed to her by Margaret. In the treatment sessions, Lorna was no longer interested in playing the drum, and in session 2, she declined Margaret's offer of a drum stick on three occasions.

Conclusion

In common with many people with learning disabilities, Margaret and Lorna experienced a move from an institutional to a community setting. Researchers have examined the effect of such a change and begun to challenge the presumption that the quantity of staff–client interactions increases as a result (Felce & Perry 1995). Bunning (1998) advocated the need for a more 'deliberate approach to interaction', arguing that it was not enough to alter staff levels or to assume that providing sensory stimuli alone would have a positive effect on interaction.

The present study evaluated a 'deliberate approach to interaction'. It confirmed that music activities and ball games encouraged purposeful interaction by offering a nonverbal and nonthreatening form of intervention. This study also examined the relationship between Margaret and Lorna, and suggested that an interdependent relationship exists between them.

The results highlight that making music within a structured activity was not only an enjoyable experience, but also one of therapeutic value. There are many people with a

learning disability who are very enthusiastic about the opportunity to play music. The present results confirmed the value of developing their interest in music.

References

Anshel A. & Kipper D.A. (1988) The influence of group singing on trust and co-operation. *J Music Ther*, **25**: 145–55.

Brown W.H., Ragland E. & Bishop N. (1989) A naturalistic teaching strategy to promote young children's peer interaction. *Teach Exceptional Children*, **21**: 8–10.

Bunning K. (1998) To engage or not to engage? Affecting the interactions of learning disabled adults. *Int J Language Comm Disorders*, **33** (Suppl.): 386–91.

Cordobes T.K. (1997) Group song writing as a method for developing group cohesion for HIV-seropositive adult patients with depression. *J Music Ther*, **34**: 46–67.

Felce D. & Perry J. (1995) Adaptive behaviour gains in ordinary housing for people with intellectual disabilities. *J Appl Res Intellectual Disabilities*, **9**: 101–14.

Hooper J. (2001) Overcoming the problems of deinstitutionalization: using music activities to encourage interaction between four adults with a developmental disability. *Music Ther Perspect*, **19**: 121–7.

Hughes J.E., Robbins B.J. *et al.* (1990) Integrating exceptional and non exceptional young children through music play: a pilot program. *Music Ther Perspect*, **8**: 52–6.

Humpal M. (1991) The effects of an integrated early childhood music program on social interaction among children with handicaps and their typical peers. *J Music Ther*, **28**: 161–77.

Johnson W. (1994) *Encyclopedia of Psychology*, Vol. 3. 2nd ed. New York, NY, John Wiley & Sons: 433.

Jorgenson H. & Parnell M.K. (1970) Modifying social behaviours of mentally retarded children in music activities. *J Music Ther*, **7**: 83–7.

Maranto C. (1993) *Music Therapy: International Perspectives.* Pipersville, PA, Jeffrey Books:683–706.

McCarthy B.C., McElfresh C.T. *et al.* (1978) The effect of contingent background music on inappropriate bus behavior. *J Music Ther*, **15**: 150–6.

Reid D.H., Hill B.K. *et al.* (1975) The use of contingent music in teaching social skills to a non verbal, hyperactive boy. *J Music Ther*, **12**: 2–18.

Smith G. & Smith D. (1989) Schoolwide study skills program: the key to mainstreaming. *Teach Exceptional Children*, **21**: 20–3.