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CAN HUMMING CAREGIVERS FACILITATE FEEDING DURING MEALTIME SITUATIONS WITH PERSONS WITH DEMENTIA? A QUALITATIVE STUDY

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ABSTRACT

**Background.** ‘Music Therapeutic Caregiving’, defined as when caregivers’ sing for or together with persons with dementia care situations, has been shown to facilitate the caring situation, and enhance positive and decrease negative expressions in persons with dementia. No studies about singing during mealtimes have been conducted, and this project was designed to elucidate this. However, since previous studies have shown that there is a risk that persons with dementia will start to sing along with the caregiver, the caregiver in this study hummed such that the person with dementia did not sing instead of eat.

**Aim.** To describe professional caregivers’ experiences of humming during meal time while feeding persons with dementia.

**Method.** An intervention with caregivers humming was implemented during lunch time. Focus group interviews were conducted to fetch the caregivers experiences. Qualitative content analysis was used to analyse the interviews.

**Results.** The caregivers described that humming disseminated relaxation and joy, and awakened memories about the songs hummed which encouraged the persons with the dementia to join in the songs. They also described that humming seemed to make the persons with dementia associate with mealtime and could make them eat more. However it also revealed suspiciousness and agitation from the persons with dementia.

**Conclusion.** Humming during mealtime revealed mainly positive as well as some negative influences. More and larger studies are needed to be able to draw general conclusions.

**Keywords:** Caregiver, Dementia, Mealtime, Feeding, Intervention, Singing, Humming

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INTRODUCTION

Dementia is primarily a disease of later life and affects 5% of people older than 65 years of age, half of which are over 85 years. The global occurrence of dementia is estimated to be 30 million cases, and by the year 2050 this figure is expected to reach 100 million (Ferri et al., 2006). Each dementia diagnosis has its own characteristics, but so-called behavioral and psychological symptoms of dementia (BPSD) are found among all types (Finkel, 2003). BPSD include a wide range of behaviors such as screaming, wandering, resisting care, verbal and physical aggression, and psychosocial manifestations such as depression and psychosis, and is common during caring situations (Finkel, 2003; O’Connor, Ames, Gardner, & King, 2009), and commonly during mealtimes (Chang & Roberts, 2008). Because of the cognitive impairments and physical and sensory disabilities, persons with dementia (PWDs) eating needs might go unmet (Kovach, Noonan, Schliedt, & Wells, 2005), and feeding oneself is a complex process requiring organizational, conceptual and physical skills which the PWDs may no longer have (Watson & Green, 2006). It is thereby common that PWDs are being fed during mealtime. According to Chang and Roberts (2008), the PWDs does often not perceive the caregiver as helpful when feeding assistance is provided and the caregivers experience difficulty providing feeding assistance. Feeding is crucial to prevent starvation of PWDs, and the difficulties addressed to the feeding activities needs to be utilized. Additionally Chang & Lin, 2005, as well as Chang & Roberts, 2008 found that caregivers experience feeding as difficult, and ethically hard because of the PWDs expressions of resistance of being feed difficult, and difficulties in understanding what to do during mealtimes.

During mealtimes, music listening has seemed to improve appetite but that no general conclusions are drawn from these methods (Chang, Huang, Lin, & Lin, 2010; Ragneskog, Brane, Karlsson, & Kihlgren, 1996). However, studies that have focused on morning care situations has shown that instead of playing music, the caregiver should sing for or together with persons with dementia, so called Music Therapeutic Caregiving (MTC) (Brown, Göttell, & Ekman, 2001). The PWD then appeared relaxed (Göttell, Brown, & Ekman, 2009; Hammar Marmstål, Emami, Engström, & Göttell, 2010b), self-confident (Göttell, Brown, & Ekman, 2003; Göttell, et al., 2009; Hammar Marmstål, Emami, Engström, et al., 2010a), and were more active during the caring activity (Hammar Marmstål, Emami, Engström, & Gotell, 2010b; Hammar Marmstål, Emami, Gotell, & Engström, 2011; Hammar Marmstål, Göttell, & Engström, 2011). It was also shown that the PWDs communication was enhanced (Engström, Hammar Marmstål, Williams, & Göttell, 2010a; Hammar Marmstål, Emami, Engström, et al., 2010a). Additionally communication and cooperation between the PWDs and the caregivers was easier to achieve (Engström, et al., 2010; Hammar Marmstål, Emami, Engström, et al., 2010a), and the PWDs was according to the caregivers easier to care for (Hammar Marmstål, Emami, Engström, & Göttell, 2011; Hammar Marmstål, Emami, Engström, et al., 2010b). MTC has also been shown to improve mobilization PWDs (Göttell, Thunborg, Söderlund, & von Heidecken Wägerth, 2012; Thunborg, von Heidecken Wägerth, Göttell, & Söderlund, 2012).

MTC has not been elucidated during meal time in terms of singing. However, studies where the caregivers were humming instead of singing has been conducted. This with the rationale that previous studies have found that PWDs commonly start to sing the lyrics sung by the caregiver, and was associated with the risk that the person with dementia would start to
singing instead of eat. The studies showed a slightly positive influence of communication for the PWDs (Hammar Marmstål, Williams, Swall, & Engström, 2012), as well as for the caregiver, and the PWD showed a slight increase in expressions of positive emotions during humming (Engström & Hammar Marmstål, 2012; Hammar Marmstål, et al., 2012). Additionally, the PWD enhanced eating and feeding abilities (Engström & Hammar Marmstål, 2012). No studies have elucidated the caregivers’ experiences of humming during feeding PWDs. Therefore this study was designed aiming to describe caregivers’ experiences of humming during meal time while feeding PWDs.

**METHODS**

**Design and Settings**

This study is part of a larger research project involving PWDs and their caregivers during mealtime in a nursing home for PWDs. This larger research project has its focus to examine if humming might facility feeding situations, and several studies has been done measuring food and liquid intake, communication behavior and expressed emotions (Hammar Marmstål, et al., 2012), as well as evaluate feeding abilities in the PWDs (Engström & Hammar Marmstål, 2012). In this present study only the caregivers participated as the focus was to evaluate their experiences of the situations.

The research situation was mealtime situations during lunch time with PWDs and their caregivers. The project involved an intervention of the caregivers humming while feeding the PWDs their lunch meal, and had a ABA design (Kazdin, 2003). “A” refers to usual mealtime with no humming, and “B” refers to the intervention including the caregivers humming while feeding the PWDs. For each PWD, and caregiver, it started with two occasions of A, followed by two occasions with B, and then again one occasion with A. The PWDs sat by a table in the kitchen with other PWDs at the ward or in their own room by a table or in bed. The caregivers feed the same PWD during both the baselines and interventions situations, and it involved both food and drink. During the intervention the caregivers was instructed to hum sing-along songs, children’s songs and popular songs from the 20th century for the PWDs and at the same time feed them.

**Participants**

At our request, the head nurse of the nursing home suggested twelve female caregivers to participate in our study. These twelve caregivers were invited and seven of them choose to participate. They were all Swedish speaking females and well trained nursing aids, aged 33 to 62 years, the median age was 51 years. At the present nursing home they had been working in 2 to 18 years, the median was 4 years. Their work experiences in geriatric care varying from 6 to 33 years, the median was 28 years. The PWDs that the caregivers feed had all severe dementia, and one was a male and eight were female. The mean score of MMSE was 6, and they all needed help during mealtime, some by being fed the whole time and some by having the caregivers to support them and sometimes feed them throughout the mealtime.
Ethical Considerations

The Regional Board of Research Ethics approved the study. All caregivers were informed orally and in writing about the study and research ethics by the first author. The caregivers then signed a written consent.

Data Collection

Data were collected through Group Interviews (GIs) (Côte Arsenault & Morrison Beedy, 2005). Two GIs was done to elucidate the caregivers’ experiences of the mealtimes with the PWDs while humming. The first GI involved three of the caregivers, and the second the remaining four. The GIs took place in a room outside the nursing home. Two research assistants conducted the interviews. One was moderator and the other one was an assistant of the moderator. One open ended question opened up the interviews for discussion in the groups: What are your experiences of feeding the PWDs while humming? This question was followed up by probing questions such as: What was it like? Can you give an example? How did it feel? Both interviews were tape-recorded, and lasted about one hour each.

Data Analysis

The GIs were transcribed and Qualitative content analysis was used to analyse the data (Elo & Kyngäs, 2008). The transcriptions were read thoroughly and coded; content that related to the study’s aim was denoted, first in the margins of the text and then on a coding sheet. The codes were interpreted and abstracted, and grouped under higher order headings into sub-categories, depending on similar events and incidents in the codes. Sub-categories were analyzed according to similarities and differences, and through interpretation and abstraction, generic categories were developed. The abstraction to higher order headings should, according to Elo & Kyngäs (2008), continue as far as reasonable and possible for the data. For this study the generic category considered the highest possible level of abstraction. The analysis generated four generic categories. These are presented in the result section. Examples of the analysis process is shown in Table 1.

Table 1.

<table>
<thead>
<tr>
<th>Transcription</th>
<th>Code</th>
<th>Sub-category</th>
<th>Generic category</th>
</tr>
</thead>
<tbody>
<tr>
<td>…they have been more harmonious…I think that the stress of not being sure of what is going is forgotten during the humming…. Like they get….something els to be concentrated about…I belive that they look more relaxed and they are are smiling towards us while we are humming.</td>
<td>Becoming more harmonious because stress is decreased. Being concentrated of the caregivers humming revealed relaxation and expressions of joy by smiling.</td>
<td>Being more harmonious and focused on the caregivers. Being more relaxed and happy</td>
<td>Dissemination of harmony and joy</td>
</tr>
</tbody>
</table>
Can Humming Caregivers Facilitate Feeding during Mealtime Situations …?

<table>
<thead>
<tr>
<th>Transcription</th>
<th>Code</th>
<th>Sub-category</th>
<th>Generic category</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was so surprised because he all the sudden started to sing. It was like the humming woke him up or……maybe…so to say, made him remember the lyrics for the song I was humming</td>
<td>Caregiver was surprised because the PWD remembered lyrics about the song and sang while she was humming</td>
<td>Being surprised about the PWDs abilities to sing and remember lyrics.</td>
<td>Awakening memories that encouraged to join in</td>
</tr>
<tr>
<td>After a while I started to hum just before the mealtime and several PWDs then went to their table as if they knew that it was lunch time, and wanted to eat. I think it had to do with the humming became associated with mealtime……My impression is that they thought it was something nice…</td>
<td>The PWDs took their spots in the dining room while hearing the humming. This was thought to be something nice associated with the mealtime, and willing to eat.</td>
<td>Humming was associated with meal time eat in a positive way, and a willing to.</td>
<td>Revealing associations with meal time, and desires to eat</td>
</tr>
<tr>
<td>Some PWDs are sometimes annoyed by the humming…..Like it is disturbing while they are going to eat. They might look suspicious, and roll their eyes or some even angrily tells you to be quit….</td>
<td>Humming was annoying for the PWDs, as they angrily told the caregivers to be quit. Some made face expressions that they did not like it and looked suspicious because of the humming.</td>
<td>Agitating expressions because being annoyed of, and being suspicious by the humming.</td>
<td>Revealing expressions of suspiciousness and agitation</td>
</tr>
</tbody>
</table>

RESULTS

Dissemination of Harmony and Joy

The caregivers described an increased harmonious environment in the dining room during the humming. This was described when watching the PWDs, who were explained to be more relaxed, and also when describing the noise in the dining room. This was normally described as noisy by anxious PWDs shouting or conversations between persons. During humming the noise was described as humble and with less speech from the PWDs. Several PWDs were described as affectionate by gently touch or stroke the caregiver on the cheek or on their blouse while being feed, other smiled against the caregiver.

One caregiver described this:

She was stroking her hand like this (illustrating stroking on her cheek), and I think she felt that it was something special in our encounter (Sara).
The caregivers also described that the PWDs commonly smiled against them and to each other during humming. They talked less but were instead described as focused on the caregivers. Some PWDs that seemed to enjoy the humming, could sometimes fall asleep, and did thereby not eat at all, other ate as they normally did. The PWDs were also described to sit by the table for a longer time than before. Even thou they had finished their lunch, they were not eager to walk away.

The caregivers described a harmony in the group of all PWDs, and that several had a nicer tone of voice when speaking to each other or to the caregivers. They did also explain that the humming maybe opened up other ways to communicate, were words are unnecessary.

One caregiver said:

It is like we open up a dimension in the communication that they are open for…we don´t need to speak all the time (Christina).

The caregivers did also describe themselves as more harmonious, and that they thought the PWDs felt like the caregivers “gave” something to them while humming. The caregivers said that they sat down for a longer time with the PWDs during humming, and that they were more focused. Before they described being stressed up to feed the next one or to handle the dishes, and during humming they did not feel that stress anymore. The caregivers’ described being in harmony, and that the PWDs seemed happier, and this made in turn the caregivers happy. One caregivers described this:

If it is calm and favorable….I mean, then I think it is nice because I can see that they get happy…and then I get happy to (Linda)!

The caregivers did also describe a communion with the PWDs while humming, and that might have to do with the caregivers being more open for the PWDs, and because themselves being more calm. They did describe themselves as more engaged with the PWDs at the moment, and that they did not think as much on the next task to be done. They explained that humming might be a tool to make them more caught in the moment with the PWDs, and that they might send out positive energy in another way. One caregiver said:

You do not walk around humming angrily….you need to be in some way harmonious yourself while doing that (Annette).

The caregivers described them having more energy and that this might pass on to other caregivers or PWDs. They were also surprised by this influence.

**Awakening Memories That Encouraged to Join in**

The caregivers described that while they were humming; some PWDs started to make noises or hummed with the caregivers. Some PWDs even seemed to remember the songs hummed, and fell in and sang. Other PWDs waved parts of their bodies in the pace of the caregivers humming, and commented on the songs. Other started to hum or sing. One caregiver described this:
She all the suddenly starts to sing the lyrics of the hummed song, or sometimes she makes up her own lyrics to it (Linda.)

Some PWDs were also described as rattle jingles while the caregivers hummed, and the caregivers explained it as they tried to sing. The caregivers also described how the PWDs remembered songs, by asking for songs they liked, and commented and laughed when the caregivers hummed out of tune. They could also comment on songs they recognized, and start to hum together with the caregivers. Some PWDs were also said to continuing singing after the lunch was over. One caregiver said:

She continued to sing afterwards, and she sang, and sang, and was so happy (Diana).

The caregivers did describe being surprised over the PWDs capacity to recognize songs, and being able to tell so. The PWDs were also described “making fun” with the caregivers when they thought they hummed badly, and one PWD claimed that he was better than the caregiver to sing. The caregivers thought this was funny, and a way to encounter with the PWDs.

Revealing Associations with Meal Time, and Desires to Eat

The caregivers described that they thought the humming could after a while be a tool to associate to the mealtime with some PWDs. As when the caregiver entered the dining room humming, several PWDs followed. They did also describe thinking that it was associated with something nice, and that the mealtime thereby was something nice. As one caregiver put it:

He said: Now she starts again (smiling), and followed into the dining room. I said: Of course, its lunch time! And he nodded as he understood (Marie).

The caregivers also described the PWDs as willing to eat, and of several an eager to eat. In opposite to situations without humming the PWDs seemed interested in the food, and the caregivers described them to eat more. They did also describe that several PWDs opened their mouths without repetitive have to tell them to do so. The PWDs were described as easier to feed during humming. One caregiver described it like this:

She is more eager to eat, and leans forward to the plate. She opens her mouth without having to tell her to do so, and this makes it easier to feed her.

The caregivers did also describe the PWDs to eat more during the humming, and that several wanted more food after they had finished the first plate. It was described during the humming that the PWDs took more time to eat, and that they did not mess around the food as much. As the PWDs were described talk less, they were instead described as more concentrated to eat.
Revealing Expressions of Suspiciousness and Agitation

The caregivers did also describe that some PWDs watched the caregivers in a strange way while they were humming. Instead of eat, they watched the caregiver as they did not understand what to do. They were also described to roll their eyes or shake their heads, as if they thought the caregivers were a little bit crazy. One caregiver said:

One lady she shake her head, and watched the other around the table, as she wanted to see if the other ones also thought I was crazy (Anna).

The caregivers did also describe that some days they thought the PWDs was getting calm, and expressed positive influences of the humming, other days they were stressed out and anxious. One man was annoyed by the humming and sometimes got really upset of it, and thus said the he wanted peace and quit.

Some PWDs were said being able to eat more one day during humming, and another day less, and also some PWDs could be happy, and sing during humming one day, and another day sad or even angry. One PWD even once expressed that she thought it was ignorant to hum instead of speak to her during the mealtime.

CONCLUSION

Methodological Considerations

The aim of this study was to describe caregivers’ experiences of humming during meal time while feeding PWDs. Group interviews (Côte Arsenault & Morrison Beedy, 2005) were chosen for data collection for this study, because this is an appropriate method when the researcher wants to gather a group’s experiences of a certain subject. We suggest GIs were a suitable data collection method because they facilitate open discussion between the participants. The participants’ discussions were full of life, and through conversation, agreements and disagreements emerged, and this enriched the interview, and the impression was that the GIs were characterized by openness and lively descriptions of their experiences of the humming situations.

The participating caregivers also somewhat familiar with earlier research about MTC (Götell, et al., 2003), which might have made them consciously look for an effect while they were singing. Similarly, the first author, who performed the analysis, might have been biased by knowledge of previous research in the area. However, to analyze data by qualitative content analysis (Elo & Kyngäs, 2008) were helpful in structuring the text, and gave the opportunity to move back and forth between the whole and parts of the material at different levels of abstraction to increase trustworthiness. Trustworthiness was also increased by discussing the study in scientific seminars.
Can Humming Caregivers Facilitate Feeding during Mealtime Situations …?

Reflections of the Results

The aim of this study was to describe caregivers’ experiences of humming during mealtime while feeding PWDs. This is the first study we know of elucidating caregivers' experiences of humming during mealtime with PWDs. The caregivers’ experiences were mainly positive, but also negative experiences were revealed. Several similarities with research about MTC (Hammar Marmstål, Emami, Engström, et al., 2011) were revealed in the results as the caregivers described themselves as well as the PWDs as more harmonious and happy during humming which was also shown in previous research describing caregivers’ experiences of MTC during morning care situations (Götell, et al., 2009; Hammar Marmstål, Emami, Engström, et al., 2011; Hammar Marmstål, Emami, Engström, et al., 2010b). The fact that the PWDs also started to sing, hum or waved their bodies in the pace of the humming was also found in earlier research about MTC (Hammar Marmstål, Emami, Engström, et al., 2010a; Hammar Marmstål, Emami, Engström, et al., 2010b; Hammar Marmstål, Emami, Gotell, et al., 2011), as well as was the findings that the PWDs remembered, and sang along in songs (Hammar Marmstål, Emami, Engström, et al., 2010b). This phenomenon has also been found in other areas of research e.g. in music therapy where Cuddy and Duffin (2005) as well as Ridder and Aldridge (2005), suggest that persons with dementia are able to remember lyrics to songs and to sing songs of musical stimuli, and that emotions are expressed through these mechanisms. In this study the songs hummed were songs from the patients’ youth. This type of selection is supported by Spiro (2010), who suggested that old songs seems to act as a memory trigger and encourage feelings of connectedness to past events and awaken the emotions associated with them. Those findings are in line with the findings of this present study, as the PWDs seemed to mainly express emotions such as happiness, but also anger or irritation during the humming. This might have to do with memories connected to the emotions awakened.

The caregivers did also describe being surprised of the PWDs ability to sing songs during the humming. This phenomenon could be linked with what dementia care researchers Normann, Asplund, Karlsson, Sandman, and Norberg (2006) suggest is “episodes of lucidity”- when the PWDs acts in a cognitive clear way. These episodes might be raised when communion between the caregiver and the PWDs is reached. In this study, the caregivers described an encounter with the PWDs which could be described as them being together in communion, and thereby the episodes of lucidity of the PWDs were possible, such as singing songs, but also the eager to eat more could be a sign of lucidity of recognizing the situation and the food on the plate.

As some of the PWDs seemed more eager and willing to eat more it could be discussed with previous research of humming during mealtime, were a slight increased intake of food was revealed (Hammar Marmstål, et al., 2012). It should however also be discussed that the influences described by the caregivers were not mainly positive, as it was also said that the findings of PWDs eating more could be contra dictionary, as sometimes they ate less during the humming. Such negative influences has not been recognized in previous studies of background music during mealtimes (Chang, et al., 2010; Ragneskog, et al., 1996; Ragneskog & Kihlgren, 1997), but in one another study of humming during mealtime (Engström & Hammar Marmstål, 2012). In area of music therapy research it has been found that when individualized music is played during mealtime, food intake increases and at the same time caregivers workload are eased (Chang, et al., 2010). To link this study to Chang et al, (2010), the caregivers described themselves as calmer and not so stressed out during the humming, and additionally, they
experienced the PWDs as more relaxed, in other words the workload was eased at the moment. Dementia care researcher Ragneskog et al. (1996) as well as Ragneskog, Asplund, Kihlgren, and Norberg (2001) suggest that appetite improves, and that PWDs eats more when they are listening to classical music during mealtimes. Be able to generalize one or another approach of music making during mealtimes, more studies need to be done. However, it could be discussed which approach to prefer, playing music, humming or maybe even singing as in the positive findings while using MTC during morning care? An unique effect shown from results of MTC during morning care situations has shown to be that the PWDs and the caregivers verbal and non-verbal communication enhance (Engström, Hammar Marmstål, Williams, & Götell, 2011; Hammar Marmstål, Emam i, Engström, et al., 2010a), and that it facilitates the caring situation greatly (Hammar Marmstål, 2011). This has not, what we know of been elucidated during music listening during mealtime. However, as the PWDs are supposed to eat and not talk or sing during mealtime, it might not have the same influences during this care situation. Maybe studies with singing should be done as interventions instead to be able to elucidate which method to prefer. Further and larger studies have to be done to elucidate this, and maybe these studies should be designed with these multiple interventions.

The caregivers described mainly positive influences on both themselves and the PWDs while humming during mealtimes. It could be concluded from this study that humming might be preferable during mealtimes as the PWDs were described to be more eager to, and did eat more. However, the results were not mainly positive, which makes the findings kind of contra dictionary. In could nevertheless be concluded that the caregivers described themselves being calmer while humming, and that this seemed to influence also the PWDs as they appeared being more relaxed, and they were described as joyful, as well as peaceful. The atmosphere was described as harmonious and joyful, and they seemed sharing a nice moment together. Humming during mealtime could thereby be a way for caregivers and PWDs to enhance the encounter, and thereby facilitate feeding situations, and thus make it a nice moment together. To be able to generalize this, further and larger studies are needed.

ACKNOWLEDGMENTS

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