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Research Paper

Creating Football Memory Teams: Development and Evaluation of a Football-Themed Reminiscence Therapy Program

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Abstract

Reminiscence therapy (RemT) promotes maintenance of memories associated with a meaningful aspect of an individual's life and is often used with individuals with dementia. For many people, attendance and participation in sports is a significant part of their life's narrative. This study evaluated a sport-based RemT program using collegiate football memories with residents with dementia in an assisted living facility in the immediate geographical area of a university football program (Clemson University, Clemson, South Carolina). Interviews, structured observations, and measures of cognition and quality of life were conducted to evaluate the program's impact. Statistically significant improvements in quality of life were measured; however, no changes in cognition were evident. Qualitative results indicated the program created opportunities for learning and sharing of social memories related to sport, establishment of group culture and traditions, and positive behavioral change. Recreational therapists can use this study as a basis to implement their own sport-based RemT program.

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Introduction

Older adults living with complex health conditions experience separation from their loved ones who are no longer able to care for them. This distance can evoke feelings of diminished sense of self, increased isolation, and higher levels of dependence upon the healthcare system. These negative outcomes further perpetuate a sense of hopelessness and helplessness that in turn leaves our older community susceptible to further declines in health. Reminiscence Therapy (RemT) can help promote more positive outcomes among older adults. More specifically, RemT is a tangible, non-pharmacological modality designed to promote functioning and overall health, which fits especially well with recreational therapy (RT) practice. This study evaluated the preliminary effects of a sports-based RemT program on older adults with dementia and other cognitive declines.

Literature Review

Dementia and Alzheimer's Disease

It is estimated that nearly 47 million individuals around the world are currently living with dementia, and nearly 9.9 million new cases are diagnosed every year (World Health Organization, 2017). Dementia is characterized by major neurocognitive decline and can be caused by a number of conditions (e.g., Alzheimer's disease, vascular dementia; American Psychiatric Association, 2013). While the severity of dementia varies by individual, common symptoms include acquired cognitive decline, decreased independence in completing activities of daily living, diminished problem-solving abilities, difficulty engaging in familiar leisure activities, and confusion related to time and place (Alzheimer's Association, 2014; American Psychiatric Association, 2013). In addition, many individuals with dementia due to Alzheimer's disease experience behavioral or psychological symptoms such as irritability, depression, combativeness, withdrawal from social activities, and wandering (American Psychiatric Association, 2013), which can disrupt therapeutic interventions and programs (Algase et al., 1996). Common undersirable behaviors (e.g., pacing, ruminating) and their associated causes (anxiety, confusion, boredom) are often the result of unmet physical, physiological, social, and environmental needs, and are not solely attributed to the progression of their dementia. These behaviors are referred to as needs-driven compromised behaviors (Algase et al., 1996; Fitzsimmons, Sardina, & Buettner, 2014). When these unmet needs are identified, the behaviors can be reduced or eliminated with nonpharmacological therapy and programming. For example, anxiety can result from an environment or therapeutic program that is too challenging for an individual to cognitively process. Similarly, anxiety could result from too little cognitive challenge or stimulation.

Therapies for Individuals with Dementia

Research regarding therapies for individuals with Alzheimer's Disease and other dementias has become one of the 21st century's greatest research priorities (Malik & Robertson, 2017). Current therapies for dementia include both pharmacological and

nonpharmacological treatments. Non-pharmacological interventions are increasingly valued as part of care planning for individuals with dementia to help with managing symptoms, decrease needs-driven compromised behaviors, and promote quality of life. Examples of nonpharmacological interventions include cognitive training, cognitive stimulation, music, physical exercise, caregiver education, massage and touch, and RemT (Olazarán et al., 2010). These interventions are low cost and offer outcomes related to improved mood, quality of life, and cognitive functioning (Duru Aşiret & Kapucu, 2016; Olazarán et al., 2010). Non-pharmacological, behavioral interventions are increasingly needed to manage non-desirable needs-driven compromised behaviors (Kolanowski, Fick, Frazer, & Penrod, 2010).

Reminiscence Therapy

RemT is a non-pharmacological intervention that uses "the discussion of past activities, events, and experiences, usually with the aid of tangible prompts (e.g., photographs, household and other familiar items from the past, music and archive sound recordings"; Woods, Spector, Jones, Orrell, & Davies, 2005, p. 2). Discussion of times and memories in the person's past uses residual long-term memory instead of short-term memory, a primary impairment of dementia (Watson, Parker, & Swain, 2018). This approach focuses on the person's strengths instead of impairments, which can promote confidence, not frustration. Trained therapists use RemT in a structured process with a variety of prompts, questions, and objects to facilitate the retrieval of memories (Martinez-Cox, Dattilo, & Sheldon, 2011). Research supports RemT's potential to improve or maintain mood, cognition, life satisfaction, well-being, self-esteem, depression, communication, and activities of daily living (Brooker & Duce, 2000; Duru Aşiret & Kapucu, 2016; Huang et al., 2015; Lin, Dai, & Hwang, 2003). RemT is commonly integrated into RT practice either through RemT-specific programs or integrating reminiscence into other interventions or programs, such as gardening (Bollin, Voelkl, & Lapidos, 1998; Mitchell & Van Puymbroeck, 2019), reading groups (DeVries et al., 2019), or training programs for family members of individuals with dementia (Weiss & Thurn, 1990), for example. In addition, knowledge and skill in how to facilitate reminiscence is a competency area that RTs working with older adults should possess (Hawkins, Porter, & Kemeny, 2017; Richeson & Kemeny, 2019). Though literature exists supporting the use of reminiscence and RemT, few studies have explored the outcomes of sport-focused RemT programs. Specifically, sport creates resilient ties to personal and collective pasts, and can evoke strong memories and lasting connections between people, places, and communities. These connections suggest the suitability of sport as a theme for RemT interventions.

Sport

Sport can create cherished and resilient memories (Healy, 1991; Ramshaw & Gammon, 2005). These memories may include playing a particular sport or watching a favorite team, often alongside friends and family. In line with RemT, sporting memories are often triggered in multisensory ways, including through sound (e.g., the roar of the crowd), taste (e.g., taste of a hotdog at a game), touch (e.g., feel of a piece of sporting equipment), and smell (e.g., smell of freshly mown grass on a sporting field). Some researchers have studied the development and outcomes of sport-based RemT programs for older adults with dementia. In the United States, Wingbermuehle et al. (2014) developed a baseball reminiscence league to serve individuals with dementia using the St.

Louis Cardinals as the theme. Investigators reported that "Reminiscence therapy based on major sports may be useful to help improve quality of life for older persons with dementia" (p. 89). Other studies and programs have focused on different sports (such as soccer) and report improved social participation, talkativeness, confidence, stimulation, fun and laughter, and anticipation of future events for participants with dementia (Football Memories Scotland, 2019; Tolson & Schofield, 2012). Most recently, Watson et al. (2018) described and explored the UK-based Sporting Memories Network, a database of sport memorabilia, memory games, artifacts, and videos. They suggested that sport-based RemT programs demonstrate promise as an effective modality for individuals with dementia.

Given the lack of research evaluating sport-based RemT programs, Wingbermuehle et al. (2014) suggested the need for additional empirical evidence to support sport-based RemT programs. Considering the potential positive outcomes resulting from sport-based RemT interventions and the need for further research on such programs, this study aimed to develop, implement, and evaluate a sports-based RemT program using the topic of Clemson University's football history and heritage. Clemson's football program was selected as the theme of the RemT kit and protocols because it is a well-known and supported college sports team in this program's community and nationwide. It was anticipated that program participants would most likely have strong memories associated with this team, in terms of their own personal memories of attending games with friends and family, as well as the team's on-field accomplishments.

Methods

The progression of this sport-based RemT program was divided distinctly into three phases: development, implementation, and evaluation. In an effort to increase the likelihood of modification and replication for RT practice, this section will describe each phase of the project. Ethics review approval was received prior to the start of the program and data collection.

Program Development

Protocols. Local archives on-site at Clemson University and online databases of digitized artifacts were utilized to provide visual representation of the heritage of the football team in conjunction with the age range of person's served. Program covers, ticket stubs, player and coach headshots, trophies, and game time photography in color were reviewed to capture the ambience of game time and prompt memory recall through engagement of the senses. Other artifact examples included audio and video of sport-related sounds (e.g., fight songs, stadium sounds, national anthems); sports equipment; and other small mementoes associated with the sport (e.g., small replica of the team's mascot, football helmets). Kinsethetic activities were also integrated into the sessions, such as playing cornhole, shaking pom poms, and cheering.

Content was divided into several sessions to provide thematic representation of Clemson University's football heritage and to help frame discussion and memory recall during the intervention. With the help of an on-campus football historian and feedback from archives staff, key components for each thematic session were highlighted and represented by an artifact (whether a carbon copy or a symbolic representation) tied to a related discussion question. In the first round of protocol development, eight sessions were drafted: Memories of Memorial Stadium, Players, Game Traditions, Famous

Games, Coaches, Championship Games, Going to the Game, and Tailgating. A panel of three RTs and researchers who have a specialty in dementia care were recruited and completed a review of program materials. This panel reviewed the individual protocols for (1) appropriateness and overall impact, (2) appropriate use of proposed artifacts, (3) user friendliness for therapists and staff, (4) length of sessions, and (5) general areas for improvement. From their review feedback, it was discovered that content had been duplicated across several protocols, and while duplication could help in session-to-session recall, a more effective and user-friendly set of protocols could accomplish the same purpose in six sessions rather than eight. Other feedback from the expert panel included, but was not limited to, recommendations to remove jargon, clarify questions being asked, establish routines and limit sessions to 30- to 45-minute time frames to aid in optimal recall and avoid cognitive fatigue of program participants. Their feedback was integrated in the revision of protocols. The final set of sessions can be viewed in Table 1. Session protocols are available upon request.

Table 1
Reminiscence Therapy Session Topics

Session Title	Session Description
Going to the Game	Going to the Game centered on the preparation, anticipation and individual and family behaviors that occurred leading up to and during the actual journey to the game itself.
Stadiums	Stadiums reviewed the historical significance of physical space where practices, season games and championships were held.
Tailgating	Tailgating included the pre-, during, and post-game tradition of tailgating and the development of social norms overtime.
Famous Games	Famous games reviewed noteworthy games, both wins and losses, in the history of Clemson football.
Famous People	Famous people combined the noteworthy players and coaches of this cohort time.
Traditions	Traditions reviewed the shared beliefs and behaviors of fans in preparation for, during, and after games.

Participant selection. Participants were residents in a senior living center located within 10 miles of the university's geographic location. The location of the facility was important for the intervention to resound with the university's football fans who reside in the area. The research team worked with the facility's director of activities to identify residents with a past connection or interest in the university's football program or sports generally. Inclusion criteria for the research participants included residents

with a diagnoses of dementia or were exhibiting other types of cognitive decline; had a social history with Clemson University, had knowledge of the university's football history, or was a fan of football generally; able to endure a 30- to 60-minute RemT session; and consented to participate. No exclusion criteria were implemented. Given the applied nature of the study and to promote a naturalistic evaluation of the program, participation was voluntary and additional participants were allowed to join the RemT sessions at their own discretion.

Implementation

Prior to the program start date, researchers arrived at the assisted living and memory care facility to meet one on one with residents to build rapport and complete baseline assessments. All researchers were trained in how to implement the assessments. Two of the researchers, who were internationally certified therapeutic recreation specialists, implemented the program to a relatively consistent group of 12-15 residents over the course of the three weeks with sessions occurring twice per week on Mondays (1-2 p.m.) and Wednesdays (10-11 a.m.) based upon expert panel suggestions, review of the research literature on RemT, availability of residents at the facility, and availability of researchers to implement sessions. One researcher served as the facilitator and monitored the progression of the protocols, prompted discussion and initiated priming questions. During sessions, both the primary facilitator and a secondary facilitator rotated throughout the group of participants to reiterate points of conversation, ask questions, and share artifacts to help prompt the sharing of individual memories. Sessions routinely lasted between 60 to 80 minutes despite protocol plans for 30-45 minute sessions, as residents continued conversation and would build upon memories shared by their peers. Facilitators used the protocols and artifacts as a guide for the sessions; however, they allowed collective or individual memory building. The program was designed for individuals with various levels of dementia; however, the program was inclusive of all residents of the facility if they desired to attend. Researchers were asutely aware of all attending residents to ensure that residents with or without dementia could participate as much as possible.

Evaluation

The evaluation portion of the study used a mixed-methods evaluation design to understand the intentional and unintentional outcomes as well as the program elements that elicited change (Creswell & Plano Clark, 2018; Onwuegbuzie & Hitchcock, 2015). The design consisted of pre and post program outcome measurement, structured observations of RemT sessions (pre-session, session, post-session observations), and post-intervention interviews with participants, family members, and facility staff.

Outcome measurement. Measures of cognition and quality of life were used to evaluate the program. Cognition was assessed using the Montreal Cognitive Assessment (MoCA) to determine baseline information as well as understand any individual adaptations necessary based on cognitive status. The MoCA is a measure used to quickly assess cognitive dysfunction among individuals with dementia and other conditions and exhibits excellent test re-test reliability (.92), internal consistency (.83), construct and face validity (Nasreddine et al., 2005). Scores below 26 (maximum score is 30) indicate a cognitive impairment (Smith, Gildeh, & Holmes, 2007). Quality of life was assessed using the Dementia Quality of Life (DEMQOL) measure, a 28-item client reported outcome measure for individuals with dementia. It has demonstrated

good external validity when compared to other health related quality of life measures and excellent reliability (>.80) (Chua et al., 2016; Smith et al., 2005). Pretesting was completed a week prior to the program's start. Posttesting was completed the day after the final session at a similar time of day as the RemT sessions to account for residents' time-specific functioning and behaviors.

Observations. Two additional researchers, who did not facilitate sessions, completed qualitative observations during each RemT session following Bailey's (2007) methodology for observations regarding spaces, objects, actors, acts, activities, events, times, goals, and feelings. Observation forms also included reflexive thoughts as they occured to the observer in real time. An observation form was developed reflecting Bailey's methodology and was revised specific to the context of this study until all researchers were comfortable with making accurate observations using the form. Upon conclusion of each session, the research team members completed journal entries regarding interpretations of each session and any notable events or emerging themes.

Interviews. Semi-structured interviews elicited information about program components and self-identified outcomes according to participants, facility staff, and family members after the program up to one week after the program ended. Interview questions, tailored to each participant group, elicited responses related to each individual's experience with the program. The questions were developed by the researchers using common qualitative interview practices, such as the use of open-ended questions that were non-leading and elicited their individualized experiences. Participants' questions were modified to accommodate their ability to comprehend questions and abstract thoughts (i.e., How did you like the college football activities? What parts of the program did you like? Why? What parts did you not like? Why? Do you feel the program makes you feel good? In what ways? What was it like to talk about Clemson football with other people? What changes would you suggest to the program? Would you like to do more activities related to Clemson football history? If yes, what topics would you like to focus on? Is there anything else you'd like to tell me about this program or about Clemson football?). Staff and family member interview questions pertained to perceived program effects, changes in resident behavior during the time span of the program, and evaluation of program elements. Staff questions included, How did you like the Clemson football focused reminiscence therapy program? What parts of the program do you think were beneficial to residents? Why? What parts of the program do you think were not beneficial to residents? Why? Did you notice a difference in the residents because of the program? What changes did you notice? Tell us your thoughts on the appropriateness of the program for your residents. What changes would you suggest to the program? Would you like to do more activities related to Clemson football history? If yes, what topics would you like to focus on? Is there anything else you'd like to tell me about this program or about Clemson football? Family member questions included: How did you like the Clemson football focused reminiscence therapy program? What parts of the program do you think were beneficial to your family member? Why? What parts of the program do you think were not beneficial to your family member? Why? Did you notice a difference in your family member because of the program? What changes did you notice?Tell us your thoughts on the appropriateness of the program for your family member.What changes would you suggest to the program?Would you like to do more activities related to Clemson football history? If

yes, what topics would you like to focus on?Is there anything else you'd like to tell me about this program or about Clemson football? Interviews were audio recorded with their verbal consent and assent, when applicable. Audio files were transcribed in preparation for analysis.

Data analysis. The quantitative data captured by the MoCA and DEMQOL were analyzed using a paired-samples *t*-test to determine if a statistically significant change was evident in cognition and quality of life during the program. Percent changes in scores were calculated using the following formula [(final value – baseline value) ÷ baseline value] x 100%.

Qualitative observations and interview data were analyzed using Bailey's guide for coding and thematic analysis (2007), which included observations of both physical surroundings (including the location, size, lighting, smells, sounds, and objects in the program space), and participants (including behaviors, body language, verbal behaviors, and speed patterns). Initial coding was completed to identify tangible meaning units in the data. Observations and interview data were read and coded distinctly in this phase. Next, focused coding was completed for the observations and interview data together to compile similar codes to create coding categories that captured the summative meanings, experiences, and observations associated with the RemT program (i.e., thematic development). When individual analysis was completed, researchers met together to discuss findings, triangulate themes, and come to consensus on the final themes to aide in the consistency and dependability of the results (Long & Johnson, 2000; Merriam, 2009). The quantitative and qualitative results were also triangulated through discussion among researchers to determine how the results of each data strand informed overall results. The qualitative data provided a textural description of the program effects (Creswell & Plano Clark, 2018).

Results

Quantitative data were collected from 16 residents overall with 13 individually paired pre-test and post-test DEMQOL scores and six paired MoCA scores. Some post-test data points were not able to be gathered due to limited availability of the residents on the post-test data collection days. Interview data were collected from 11 RemT participants, two family members who participated in the RemT sessions at some point, and two staff including the activities director and facility administrator. All participants in the RemT sessions were included in the observations completed during each session.

Quantitative Results

Paired samples *t*-tests (N=13) indicated a statistically significant improvement in quality of life from pre to posttest (t=-5.408, p<.000) with a 14.23 point improvement, but no statistical differences were observed in cognition (t=-1.936, p=.111). Average percent improvement across participants was 18.73% for quality of life and 5.31% for cognition.

Qualitative Results

Themes from interviews and observations indicated that the RemT program created 1) opportunities for learning and sharing, 2) group culture and tradition, and 3) positive behavioral change. The following paragraphs describe and contextualize the

themes using representative data extracts (codes) from both the interviews and observations as a merged dataset.

The theme of *opportunities for learning and sharing* indicated that sessions were an opportunity for participants to learn about and share knowledge and experiences associated with college football. Although many of the participants had lived in the Clemson, South Carolina area and had a connection with the football program in various capacities throughout their lives, they relished the opportunity to learn more historical football facts and share their stories and memories about their experiences. This experience was evidenced by statements, such as, "…I grew up in [the university's area] and went to school and used to walk all over that campus, so it's good to hear the memories of other people, too." Other comments were more specific to football memories, "I loved the fact that it reminded me of the days when we used to be active in that [Clemson football]. Throw the ball, you know, all the things that we did there. I could remember it." Participants who were not native to the geographic area knew superficial facts about the Clemson's football program, but stated their benefit from hearing, seeing, and learning from the session materials, session facilitators, and other participants. For example, "I liked that I had learned about the rock [a relevant football tradition at ClemsonUniversity]." These participants were able to learn more about the culture they spent years hearing about and helping them fit within the subculture of fellow university native residents.

Most of the memories shared by participants were reflective of their social experiences and less focused on historical football facts. In some cases, their memories were reflective of campus life when they were students, instead of solely focused on football. For instance, they were not able to recall the score of most notable football games, or who was the opponent; instead, they recalled the people in their lives at that time period and the social context of the experiences,

> We used to go to the Physics building. We would see the Clemson football players going into the building to have their showers, and we used to drop cookies onto the players. Our Home Ec(onomics) teacher wanted to get a husband I think.

This exemplary story was tangential to the topic being discussed, yet these important memories were fostered from initial conversation around the session's football topic of the day. Participants also focused on the social components of attending Clemson football games, including the tradition of "tailgating" when friends and family gather outside the stadium hours before the game to eat, drink, and socialize. Here, participants discussed recipes with one another, as well as sharing happy memories of time spent with loved ones at football games and events.

The theme *group culture and traditions* was witnessed through many of the self-initiated behaviors of the residents. By the second session of the program, residents began arriving 15 to 20 minutes prior to the program start time to secure a seat and begin socializing with program staff and peers. These conversations initially began as small talk about weather, upcoming events, or personal items and progressed more specifically to informal discussion of college football. Participants also began to create and take ownership of within-group traditions such as one resident who played the American national anthem on her harmonica at the beginning of each session.

Another tradition that emerged was saying aloud Clemson University's well-known and practiced "cadence count" cheer at the beginning of the sessions. It was initially demonstrated by a facilitator in a session, but participants requested the facilitator lead them in the cheer every session after the national anthem. These instances of tradition reflective of Clemson's football games were adopted and added by request of participants, which aided in developing an engaged group culture that was upheld throughout the RemT program. Many of these traditions were not pre-planned by the facilitators or in the protocols, but developed authentically within the group. These program elements added to the cohesion of the group, which transcended the allotted program time period. Participants would commonly stay after the session to talk with facilitators and peers about college football and other topics. Other traditions were introduced by the facilitators as "one-off" activities, but grew into regular traditions at the request of participants. Cornhole, a traditional football tailgating game where teams try to throw a beanbag into a hole at a distance of about 35 feet, was introduced by the facilitators at an early session, but became one of the key activities for participants in subsequent sessions. These traditions translated into feeling of belongingness. Researchers, facility staff, and family members witnessed participants developing social bonds that were not present prior to the RemT program. As one family member stated, "Well, his being part of the group at (the care facility). It enlarges your family a little when you're in a group. You're Clemson family. So you felt part of a group, part of a family."

Positive behavioral change was noticed among participants, but to varying degrees. Positive behavioral change was referred to as improved functioning as well as behaviors that were the antithesis of needs-driven compromised behaviors (e.g., physical aggression, passivity, depressed mood), which are often disruptive to resident functioning and programming efforts (Fitzsimmons et al., 2014). Participants demonstrated enjoyment and excitement through smiles, laughs, story-telling, and social connection with facilitators and peers, which were indicators of session success. Many participants who exhibited compromised behaviors prior to the program demonstrated a reduction in these behaviors while showing improvement in positive behaviors during and after the RemT sessions. Although these behaviors were not quantified prior to and post program, observations as well as staff and family comments indicated these behavioral changes. For instance, the activities program director said,

> They were really excited. They were looking forward to it. I would hear in the mornings, when we would write the boards in the morning. Usually it is fairly quiet in the mornings, because I get here fairly early. They would say, "Oh, the Clemson people are coming today; we're going to do that thing in the back." So, I really think that it sparked some excitement here.

In addition, the facility administrator indicated, "Since y'all have been coming here, the moods of the people that have been coming to the program are 100x better, and I'm not exaggerating." Although positive behaviors were witnessed during and after the program, some of the compromised behaviors persisted such as wandering and passivity, albeit seemingly less frequently.

Although statistically significant changes in cognition were not measured, instances of improved verbal communication fluency were witnessed, as the activity director indicated,

> Our building… is about 80% dementia and memory care…I could see it working to build their brains and keep them moving and working. That's what I really liked about it is they could tell stories from that past and actually make sense while telling them.

As an example, the activity director shared a story of a resident who made noticeable changes in his ability to verbalize his thoughts,

> …there was one gentleman there that when he would tell me a story, he would absolutely just make no sense at all. He was in a different time zone and two things that had happened in the past that were jumbled up together. When he would tell you guys a story about tailgating it would make total sense, and I actually believed that it happened and didn't think he was just coming up with it on a whim.

Admittedly, researchers were unable to verify many of these behavioral changes reported by staff since the researchers were not aware of resident behaviors prior to the onset of the study.

Data Comparison and Interpretation

The quantitative data measured statistically significant improvements in quality of life. Meanwhile, the qualitative data further contextualized areas of experience that can be connected with these changes in quality of life (e.g., learning and sharing meaningful information, feeling a part of a group), which build upon the limitations of the DEMQOL measure's scope. In contrast, changes in cognition were not able to be measured; however, the observations and interviews highlighted some key areas where cognition was noticeably different, such as social cognition and verbal communication fluency. While these perceived and observed changes in social and cognitive behavior are exciting and support the promise of the effects of the RemT intervention, these reports are fairly anecdotal due to the varied reports and small sample size in both phases of the mixed methods study. Caution should be exercised when determining the transferability of the results to other similar programs.

Discussion

This study sought to develop a multisensory RemT program focused on sport-related memory retrieval associated with a university's football program, specifically Clemson University's program. Results indicated statistically significant improvements in quality of life, but no quantifiable changes in overall cognition. Qualitative findings provided context to the behavioral changes, social interactions, and overall impacts on participants. The RemT sessions created opportunities for learning and sharing about Clemson University football, particularly the social memories associated with football culture and their memories of their lives that, for many, revolved around the university generally. The participant group also created a unique culture and tradition within the group that mimicked and built upon football culture and traditions. Finally, researchers and facility staff observed positive behavioral change in regard to decreasing need-

driven compromised behaviors and improving other elements of behavior and function such as mood and verbal communication fluency.

This study provides initial support of sport as a viable theme for RemT sessions and can help inform development of other sport-based RemT interventions and programs for individuals with dementia. Using football focused topics for RemT created meaningful engagement for residents within the context of Clemson University's community that has strong ties to its football program. The protocols developed for this study could be used in other care facilities that have Clemson football fans.

With additional study, there is a potential for application of sport-based RemT beyond the relatively specific scope of this study. The protocol themes and artifacts are particularly adaptable to other college football teams, as Clemson's history and heritage, though unique, reflects the traditions and culture of college football more generally. The format employed in this study also has the potential to be a template for other sport-themed RemT programming. Currently, sport-based RemT is being provided in other communities and using different sport-based themes, although the degree to which they are using structured protocols and evaluation techniques varies from program to program (see: Society for American Baseball Research, 2019; Footall Memories Scotland, 2018). This study, therefore, lends further evidence to the effectiveness of sport-based RemT programs (Doeg, 2012; Tolson & Schofield, 2012) and contributes to the literature in heritage-based RemT programming as well (Smiraglia, 2015).

In regard to RT practice, sport-based RemT fits within the Needs-Driven Dementia-Compromised Behavior Model supported by the Dementia Practice Guidelines for RT (Fitzsimmons et al., 2014). This model states that many compromised behaviors of individuals are, in part, the result of the unmet needs of the individual, and not solely the natural progression of the disease (Algase et al., 1996). In this regard, RemT may have prevented or reduced these compromised behaviors by addressing the proximal factors associated with these behaviors. Proximal factors are the social, physical, and personal environments of the individual with dementia (Algase et al., 1996). More specifically the RemT intervention seemed to have met social needs by fostering a sense of connectedness with other residents and staff, physical needs through the kinesthetic aspects of the program (e.g., playing cornhole, shaking pom poms), cognitive needs by stimulating conversation about past recreational and cultural relevance of the university's football program, as well as an intriguing physical space with visually stimulating artifacts and sounds associated with football. It appeared this approach to the RemT program helped maximize functioning by focusing on resident strengths and creating meaningful challenge (Fitzsimmons et al., 2014; Watson et al., 2018).

The process of remembering and reminiscing about past events, even those which are positively associated with sport and sporting events, can also generate negative or unpleasant emotions. Although reflecting on attending exciting matches and witnessing great victories with family and friends can be rewarding, it must be remembered that nostalgia is a bittersweet emotion (Batcho, 2013) which reminds participants that, though the past may have been wonderful, it is also irretrievably gone. The potential for participants to experience a sense of sadness should not be a barrier to creating and incorporating reminiscence programs, as the space and freedom to experience authentic emotions—even bittersweet ones—should be welcomed, and may potentially contribute to participants' sense of dignity and independence.

Implications for Practice

When providing RemT sessions, especially sessions focused on sporting memories, RTs may find better treatment outcomes when conducted around a sport team that fits with that individual's or a group's collective past. Integrating multisensory artifacts of the sport or sport team can be particularly useful for engagement of participants. Many of these types of artifacts used in this program can be found through internet searches, upon request from family members such as an old football from the individual's home, connection with a sport historian, and sport museums. Although not incorporated into this study's sessions, smells and tastes could also be used, such as picnic items associated with tailgating at a sport event and smells of grass that is reminiscent of a sports field. This may further stimulate olfactory-based memories. Despite reductions in olfactory and gustatory ability associated with aging and dementia, pairing visual indicators of the smell with the odor may help with odor identification (i.e., using real grass versus using a grass-scented oil) (Larsson et al., 1999), and may assist with memory retrieval.

Assessment should be used to inform the adaptation of sport-based RemT sessions. Key areas to assess include past and current sport interests, social and community involvement across their lifespan, functional skills and deficits, and an assessment of proximal factors to identify unmet needs that can be manipulated (e.g., an individual's need for social connection). Identifying specific sports teams that are regionally relevant and of interest to residents is important as well. Purposefully grouping individuals for RemT programs based on these assessed commonalities will help with development of a salient and effective RemT program.

Potential barriers and risks were also identified. Some participants expressed that they were initially apprehensive about attending sessions as they felt their knowledge about the university's football program was not adequate enough to participate, although many participants ultimately noted that they were able to negotiate this perceived barrier and participated in the program nevertheless. As such, program coordinators may wish to emphasize that no prior knowledge is required to participate in sport-based RemT programs. Other participants suggested that recalling some memories were bittersweet, which is a common aspect of nostalgic memory (Batcho, 2013). Negative emotions and memories are possible in RemT programming, and negative memories about sporting experiences may be part of these types of RemT programs (Watson et al., 2018). However, the ability for participants to feel a wide variety of emotions, including negative emotions, may also provide a sense of dignity and freedom for participants.

Limitations

Due to the quasi-experimental design of the quantitative phase of this study, changes in behavior cannot completely be attributed to the program since no control measures were used. In addition, demographic data were obtained to fully describe the sample which limits the replication of the study sample in future studies. Although researcher observations and field notes were robust and interviews with key staff were successful, qualitative data gathered from interviews with residents lacked depth. Their ability to verbalize experiences up to one week after the intervention was quite limited. Finally, needs-driven compromised behaviors were not measured prior to, during, or after the RemT program even though some reductions were observed and positive behaviors were exhibited and reported by facility staff, albeit unverified.

Conclusion and Recommendations for Future Research

This manuscript described a sport-based RemT program and the preliminary effects on and experiences of participants with dementia residing in a college town. It is possible for the RemT program and protocols to be reproduced to fit with other football teams or sports. Further research and evaluation will determine if results can be replicated within different geographic and dementia care contexts. Additional research is needed to further understand if and how sport-based RemT impacts individuals with dementia. This study found some evidence showing positive effects and experiences of the program; however, it is unknown if the effects are merely an artifact of the participant's connection with the Clemson University's football history or if the connection with sport on a broader scale could be effective. Given the prevalence of loneliness among this population, measuring sense of connection during RemT programs is an avenue for further research. Future studies should also investigate sport-based RemT's effects on needs-driven compromised behaviors and positive behaviors pre and post sessions/program that may build upon our findings. There is also an avenue for research on sport-based RemT with other older adults who do not have dementia, particularly as an intervention for older adults experiencing loneliness or social isolation.

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