

# Practice Concepts

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## Impact of TimeSlips, a Creative Expression Intervention Program, on Nursing Home Residents With Dementia and their Caregivers

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**Purpose:** Creative expression (CE) programs are emerging interventions to improve the quality of care and life of persons with dementia (PWDs) in long-term care settings. However, limited empirical evidence exists to support the effectiveness of these programs. Here, we report the findings from an assessment of the impact of TimeSlips (TS), a group storytelling program that encourages CE among PWDs and those who care for them. **Design and Methods:** Instruction in TS was provided through a 10-week on-site training. An observational study using an experimental design was conducted in 20 nursing home facilities in 2 states, 10 of which were randomly selected to implement TS. Two weeks after the implementation of TS at the intervention sites, we conducted 4 days of direct observation, using a time-sampling approach, of residents and staff in each facility. Using surveys, we also assessed staff job satisfaction, attitudes toward residents, and burnout. **Results:** Compared with residents in the control facilities, those in the TS facilities were more

engaged and more alert. In TS facilities, there were more frequent staff–resident interactions, social interactions, and social engagement. Also, staff who participated in the TS program had more positive views of residents with dementia and devalued residents less than did the control group staff. There were no differences in staff job satisfaction and burnout among staff in the TS and non-TS facilities. **Implications:** Implementing the TS program in nursing facilities improves the care environment for PWDs. However, additional studies are needed to offer further insights into the mechanisms by which TS improves both staff and resident outcomes.

*Key Words:* Creative expression, Dementia, Long-term care, TimeSlips

Recently, researchers, practitioners, and policy makers have expressed interest in using creative expression (CE) programs to improve the quality of care and life of persons with dementia (PWDs) in long-term care (LTC) settings (Bernfeld & Fritsch, 2006; National Institute on Aging, 2006). In CE programs, groups of residents interact together in a failure-free context to produce something new that is valued by self and others (Cohen, 2001). In an effort to improve outcomes for PWDs in LTC settings, a wide range of CE programs have been introduced. Examples include

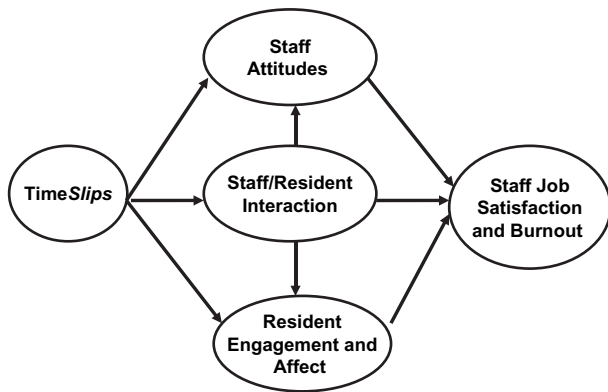
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**Figure 1.** Conceptual framework for creative expression programs.

visual arts-based programs involving painting and drawing; programs to activate and engage the body and mind through movement, dance, or music; group poetry facilitation; and storytelling programs.

Although several intervention studies have provided some empirical support for the efficacy of CE programs in improving quality of life and care, methodological limitations of these studies make it difficult to draw conclusions about their effectiveness (Marshall & Hutchinson, 2001). Many CE studies are case studies or use narrative or qualitative methodologies. Studies are frequently based on small sample sizes, and investigators rarely use experimental designs with a control group. In some studies, outcome measures may have questionable validity because of the difficulties of scale development with demented persons. Further, as noted by Marshall and Hutchinson, the absence of a theoretical framework to organize findings and guide research is a major limitation of CE studies.

Here, we report findings from an assessment of the impact of implementing TimeSlips (TS), a group storytelling CE method targeting PWDs and professional caregivers, on their quality of life and quality of care.

### *The Guiding Framework*

As previously mentioned, the absence of a theoretical framework to organize findings and guide research is a major limitation of CE studies. Our own review has confirmed that a “grand model” of CE in LTC settings has not yet been developed. We have therefore developed a preliminary framework to (a) integrate the claims made about the possible effects of CE in LTC settings, (b) use this information to guide our selection of measures and outcomes, and (c) develop testable hypotheses (see Figure 1).

In the model, it is expected that certain fixed characteristics, such as sociodemographic and clinical characteristics, may influence the magnitude of the effects of CE program on residents. For example, CE programs may not be as effective for residents with severely impaired cognitive or communicative abilities as for residents with cognitive and communication abilities that are relatively more intact.

Next, we suggest that the CE interventions influence proximal and distal outcomes among residents and staff in several ways. As proximal outcomes for residents, the inclusive and failure-free format of CE programs will stimulate participants to become and stay engaged (resident engagement) and increase residents’ positive mood (resident affect). Creative expression programs seek to increase engagement by providing a social network with which to interact (i.e., other participating residents). Increasing levels of engagement and positive mood are considered important indicators of quality of life. Among individuals who are socially passive or disengaged, risk for cognitive decline is increased (Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000). Additionally, 50% of LTC residents have depressive symptoms (Jongenelis et al., 2004) and the negative sequelae associated with depression are well documented. Thus, the capacity for CE programs to decrease depressive syndromes is germane. As residents become engaged, and as staff and family provide positive reinforcement for the residents’ creative work, their mood may improve.

For staff, it is expected that the CE programs will encourage the development of positive attitudes toward PWDs. Creative expression programs are based on the philosophy of “person-centered” care, and serve as a conduit for staff to learn about the inherent value and dignity of the PWD by observing participants’ remaining capacities and their creative potentials. In our model, staff will experience attitude change, gradually viewing residents in more positive terms. With more positive attitudes and by caring for residents who are engaged and less depressed, staff will initiate more and better interactions with residents. Also, as staff observe more resident-initiated interactions, they will become more motivated to initiate their own interactions with residents. The increasingly frequent staff- and resident-initiated interactions will encourage and reinforce more exchanges between both groups over time. Creative expression programs can accomplish these increases because the

programs demand communication between caregivers and residents.

As distal outcomes, it is expected that staff will experience higher staff job satisfaction and less burnout as a result of the TS program being implemented in nursing home (NH) facilities. It has been shown that positive (person-centered) staff attitudes predict total higher job satisfaction (Zimmerman et al., 2005), which in turn predicts less burnout. Thus, the most distal, but still important outcome in our model focuses on staff job satisfaction and burnout. These outcomes are influenced by the improvements in mood and engagement in residents, and the increased interactions between staff and residents. Moreover, as many CE programs are implemented for at least several weeks in each facility, it is possible to see *spillover* effects across residents and staff. That is, as staff members adopt person-centered attitudes, they will serve as models for other staff who did not directly participate in the CE sessions through observational learning.

### *TS: A Group Storytelling Program*

In this study, we evaluated the impact of TS, a simple and inexpensive group storytelling technique, on staff and resident outcomes. A unique feature of TS is that it allows people with Alzheimer's disease and related dementias to express themselves without relying on failing memories (Basting, 2003). TimeSlips is intended for persons with middle- to late-stage dementia, who have, at least, a minimal capacity for communication. TimeSlips is highly innovative in that it taps *preserved abilities* (e.g., residents' creativity), rather than focusing on participants' diminishing capacities, by using creative storytelling to engage residents and help them communicate with each other and their caregivers.

TimeSlips provides resident participants with reinforcement for their creative work, emphasizing a *failure-free* environment, thereby enhancing residents' sense that they can create. Based on the philosophy of person-centered care (Kitwood, 2001), TS underscores the inherent value and dignity of the PWD by drawing on participants' remaining capacities and their creative potentials. Because TS relies on creative/generative processes rather than demanding active use of long- and short-term memory, residents feel more comfortable contributing to activity sessions. Further, the process of implementing TS in each facility occurs

over the course of at least 10 weeks, with an implicit expectation that observational learning by staff occurs. Consequently, the program becomes diffused throughout the facility—across staff and residents—thereby introducing the possibility for grassroots culture change.

This study compared outcomes after TS was implemented in experimental and control group NH facilities. We predicted that, compared with residents in the control facilities, *residents* in the TS facilities would (H1) be more frequently engaged in activities and (H2) experience higher levels of positive mood and affect. We also predicted that *staff* in the TS facilities would (H3) exhibit more frequent interactions with residents, (H4) experience more positive attitudes toward PDWs, and (H5) experience higher job satisfaction and lower burnout than staff in the control facilities.

## **Methods**

### *Overview*

All procedures associated with this study were reviewed and approved by the Institutional Review Board of the University of Wisconsin–Milwaukee (IRB 04-02-185). We used an experimental design and randomly assigned matched pairs of NHs to treatment (TS) or control groups. We assessed the impact of TS on resident and staff outcomes using two methodologies: (a) time-sampling observation and coding of resident engagement and staff–resident interactions and (b) survey of daytime staff who were asked about their attitudes and job satisfaction.

### *Description of the TS Program Intervention*

*TS Program Intervention.*—TimeSlips storytelling groups, involving 10–12 residents, met once a week for 1 hr for 10 weeks. To encourage participation in group storytelling, facilitators handed out a playful theatrical picture to serve as the basis for the story. The facilitators—nurses' aides, social workers, and/or activity directors—asked open-ended questions about the picture and recorded residents' responses on pads of paper, making it clear that there were no incorrect answers. Facilitators then wove the responses into a story, periodically reading it back to the participants as it progressed, to maintain the group's focus and enthusiasm. The story was later transcribed and, together with the picture, displayed in the residents'

unit. Stories were often included in a facility's newsletter or collated into books for families.

*TS Trainings.*—Interested NH staff volunteered to participate in an intensive workshop and a 9-week on-site training conducted by TS-certified trainers. To implement the program in the NHs, TS trainers began with a daylong training, and returned once a week for 8 weeks to model and then observe and comment on the storytelling process. The 10th session was a celebration of the project. The trainer helped the staff arrange the creation and distribution of books of stories and certificates for both the storytellers and the facilitators. Although facilitators varied across sites, the highly structured and manualized training program and certification process ensured that the intervention would be implemented consistently and in a standardized way. A more complete description of the TS program, its history, implementation, usable stimulus materials, and information on how to become certified as a TS trainer through the “train-the-trainer” program can be found at <http://www.timeslips.org/>.

### *Setting, Subjects, and Procedures*

*NH Facilities.*—The NH facilities included in this study comprised a convenience sample of 20 not-for-profit, freestanding NHs that volunteered to participate in the research. In addition, we only included only NH facilities that had dementia special care units (SCUs): 10 in Milwaukee County, Wisconsin, and 10 in Forsyth and Guilford counties, North Carolina. Nursing homes were assigned to 10 pairs by matching each facility with a second facility based on the number of beds, the percentage of Medicaid-funded residents, and the location. One home from each pair was randomly assigned to the intervention group (TS). One dementia SCU in each home was then selected to participate in the study. Using randomization tests (Edgington, 1995), we found that the experimental and control group facilities showed no significant differences in their basic characteristics, with *p* values ranging from .109 to .340.

*Subjects.*—Daytime certified nursing assistants and activity staff members (all paid by facilities) who had daily contact with residents in the SCUs in the 20 facilities served as subjects. Before TS was implemented, a contact person was identified at

each NH who distributed informed consent forms to staff taking the surveys; research assistants met with the staff to answer questions. For behavioral observations, staff who were scheduled to work during the periods of observation provided informed consent 1 week before the observations began. Two weeks after implementation of TS, staff questionnaires were distributed by research assistants and included a \$5 cash incentive (only in Milwaukee). The response rate was nearly 60% in TS facilities and 54% in control facilities. One hundred ninety-two staff members completed the surveys.

All residents of the selected units were contacted through the director of nursing at each respective facility, who helped the research team contact the residents' legal guardians to obtain their consent. The family consent forms were distributed 1 month before the behavioral observations began. If a resident or his or her legal guardian refused to provide consent, the data obtained during the observation periods were destroyed and not used in this study.

*Observation Protocol.*—A time-sampling design was used to generate a total of 2,088 ten-minute observations of staff–resident interactions and resident engagement and affect that occurred in public spaces in the NHs. Eight trained research assistants observed staff–resident interactions on 4 separate days for a period of 2 weeks. Four research assistants in each state underwent 5 days of training, which included multiple techniques to ensure the reliability of the observations and compliance with the protocol. Each day, observations were conducted during four 1-hr observation windows that were selected to ensure observation of different types of activities. Observation windows were divided into four 10-min periods separated by 5-min breaks. The first 10-min observation period began when a staff member initiated interaction that lasted more than 5 s with a resident. During the first 10-min period, both observers recorded information about the type, quantity, and quality of interactions involving the target resident. This dual recording of information for the first 10-min period of every window provided a basis for calculating interrater reliability. To minimize reactivity of staff and residents to being observed, observations were made from unobtrusive locations within the SCUs (e.g., from the corners of the activity rooms).

## Measures

**Resident Engagement.**—We measured resident engagement with four codes: *social engagement* (i.e., engagement in some form of communication with others where there was reciprocity with at least one other person), *nonsocial engagement* (i.e., engagement in purposeful activities that do not involve social interaction with others), *disengaged* (i.e., inactive, sitting passively or sleeping, or involved in unpurposeful activity), and *challenging behavior* (i.e., including solitary, repetitive, non-functional motor activity or aggression toward others; Proctor et al., 1998).

**Resident Affect.**—The Philadelphia Geriatric Center Affect Rating Scale (Lawton, Van Haitsma, & Klapper, 1996) was used to measure resident affect in terms of *pleasure* (e.g., laughing, singing, smiling, gently touching another person), *anger* (e.g., physical aggression, yelling, cursing, berating), *anxiety or fear* (e.g., shrieking, repetitive calling out, restlessness, wincing or grimacing), *sadness* (e.g., crying, frowning, eyes dropping, moaning, sighing), and *general alertness* (e.g., participating in a task, maintaining eye contact, eyes following object or person). An *other* (neutral) category was added for null behavior that did not fit into the existing categories, such as sleeping and being fed. The affect rating scale has been shown to be reliable (kappas ranging from .76 to .89) and valid (highly correlated with other observational measures of affect for PWDs; Lawton et al.).

**Staff-Initiated Interactions With Residents.**—Adopting Proctor and associates' (1998) modified version of the Quality of Interactions Schedule (QUIS), observers recorded the number of staff-initiated interactions and quality of these interactions. The QUIS is a nonparticipant time-sampling observational technique, which was originally developed by Dean, Proudfoot, and Lindsay (1993) and has shown to be reliable (mean kappa across behavioral codes equals .73). From the QUIS, the five staff codes were adapted to include subcategories for more detailed analyses: *social* (i.e., verbal, eye contact, touch, failure-free communication, and nonhierarchical stance), *care* (i.e., verbal, eye contact, touch, and nonhierarchical stance), *neutral*, *protective* (i.e., verbal or nonverbal), and *oppressive* (i.e., verbal or nonverbal). The social codes refer to interactions primarily involving "good, constructive, and beneficial" conversations

and companionship, whereas the care codes pertain to task-limited interactions such as direct care tasks and activities of daily living. Neutral interactions were defined as brief indifferent interactions. Protective codes refer to task-oriented "negative care" for a good purpose but in a restrictive manner without explanation. The oppressive codes were applied to interactions that oppose or resist a resident's freedom of action without good reason or that ignore the resident as a person.

**Attitudes Toward PWDs.**—To measure attitudes toward PWDs, we used an 11-item inventory that assessed two domains of attitudes, *devalue* and *positive views*, with a 4-point response set. Four items were used to measure the tendency to devalue residents with dementia; 7 items were used to construct a measure of positive views of residents with dementia. These 11 items were developed from 21 items that we constructed and tested with 126 staff members from a pilot site not included in this study. Factor analyses conducted with the data revealed two meaningful factors that were measured with the 11 items.

**Job Satisfaction.**—We assessed job satisfaction with five indicators, adapted from seven indicators of job satisfaction used by Montgomery (1993), which drew upon earlier sociological studies of job satisfaction and were developed to assess staff satisfaction in SCUs. The mean internal consistency reliability was  $r = .81$ . In the present study, we asked staff to respond to 37 statements using a 5-point response scale.

**Burnout.**—To measure burnout, we used a 14-item inventory with a 5-point response scale, adapted from the Maslach Burnout Inventory Human Services Survey (Maslach & Jackson, 1981). Maslach and Jackson reported high reliability (Cronbach's alphas ranging from .83 to .84) and high concurrent validity (correlation with outside observers' ratings of burnout ranging from  $r = .41$  to .57).

**Staff Demographic Characteristics.**—Among the staff demographic characteristics we measured were indicators of age, gender, marital status, race or ethnicity, highest level of education completed, and their job title. Staff members were also asked about the type of organizations in which they had previously worked, the number of hours of formal dementia-related training they had received, and the number of hours of work they missed in the past week.

## *Interrater Reliability*

For the direct observation data, interrater reliability was assessed in two ways. First, we identified the number of 10-min observation periods in which two observers agreed upon the number of interactions that were observed for a target resident. Second, we examined the reliability of each code that raters recorded for each interaction or “event” occurring during a 10-min period. Interrater reliabilities for staff–resident interactions and for residents’ levels of engagement and affect were assessed by examining the level of agreement between observers for the 310 periods that were simultaneously observed by two observers. The interrater reliability for each code is shown in the Appendix, which includes the percentage of observations for which there was an agreement. Kappa values ranged from .40 to .67 for the resident engagement codes, from .25 to .81 for the resident affect codes, and from .58 to .92 for the staff codes. The only codes for which the interrater reliability could be considered low were those related to anger and fear or anxiety. However, these values reflect the fact that kappa is influenced by the prevalence of an observed event and tends to be very low for rare events, which was the case for both the observations of anger and fear.

## *Data Analysis*

Ordinary least squares regression analysis and chi-square tests were performed to evaluate the effect of TS on outcomes. We used a two-step analysis procedure to compare workers’ job satisfaction, job burnout, or attitudes toward PWDs between the TS and the control facilities. Initially, zero-order correlations between the outcome indicators and the staff demographic and job characteristics were examined to identify control variables to be included in the regression models. Then, separate regression analyses were conducted for each outcome variable. Independent variables included only those that were significantly correlated with the outcome variables. We also included two variables indicating treatment facility and staff participation in TS training (some of the staff at the TS facilities did *not* participate in the TS training,  $n = 45$ ).

Observational data on staff–resident interactions and resident engagement were analyzed by conducting independent chi-square tests. The analyses included 2,088 ten-minute observation periods that were conducted in 20 NHs.

## **Results**

### *Staff Characteristics*

More than 90% of the NH staff were women, 50% between the ages of 26 and 45 years, 50% Black or African American and 35% Caucasian, and the remainder classified themselves in *other* categories. Sixty-seven percent of staff were nursing assistants, whereas 18% were activity staff. Forty-two percent of staff *never* or *rarely* worked other than daytime shifts and 28% reported *sometimes* working night or evening shifts. Thirty-two percent of workers *usually* floated between units, 26% *sometimes* floated between units, and 40% *rarely* or *never* floated between units.

Sixty-six percent of workers reported being employed by the facility for more than 3 years and 18% for more than 10 years. At the same time, 17% of the workers were new to the facilities, having been employed for 1 year or less. Forty-seven percent of the workers had previously received more than 9 hrs of training in dementia care. Thirty-nine percent of workers had received between 1 and 8 hrs of training. Fewer than 8% reported no training in dementia care. Approximately 34% of staff reported participating in the TS program and 44% did not participate. The remaining 22% of respondents did not answer this question.

### *Resident Engagement and Affect*

Consistent with H1, there were higher levels of engagement in the TS facilities ( $\chi^2 = 9.04, p < .01$ ) and higher levels of disengagement ( $\chi^2 = 24.76, p < .001$ ) in the control facilities (Table 1). However, residents in the TS facilities also exhibited more frequent challenging behaviors ( $\chi^2 = 4.48, p < .05$ ). Additionally, residents in the TS group exhibited more general alertness ( $\chi^2 = 5.54, p < .05$ ), fear or anxiety ( $\chi^2 = 9.20, p < .01$ ), and sadness ( $\chi^2 = 5.30, p < .05$ ), whereas those in the control group exhibited more other or neutral affect ( $\chi^2 = 35.79, p < .001$ ). These latter findings run contrary to predictions of H2; interpretations of these results are given in the Discussion section.

### *Type and Quality of Staff Interaction*

As predicted, TS staff engaged in a greater total number of interactions than did staff in control facilities, and a larger proportion of these interactions were social interactions (Table 2). Staff in the TS group exhibited greater social eye contact

Table 1. Resident Engagement and Affect During Resident–Staff Interactions

Resident codes	TS facilities <sup>a</sup>		Control facilities <sup>b</sup>		$\chi^2$	
	<i>n</i>	Ratio <sup>c</sup>	<i>n</i>	Ratio <sup>c</sup>	Value	<i>p</i>
<b>Engagement</b>						
Disengaged	68	.04	107	.09	24.755	<.001
Nonsocial engagement	174	.11	135	.11	0.051	.822
Engagement	1,400	.85	1,007	.81	9.039	.003
Challenging behavior	9	.01	1	.00	4.475	.034
<b>Affect</b>						
Anger	6	.00	1	.00	2.368	.124
Fear/anxiety	39	.02	11	.01	9.195	.002
General alertness	1,512	.92	1,111	.89	5.535	.019
Other (neutral)	30	.02	75	.06	35.791	.001
Pleasure	54	.03	47	.04	0.518	.472
Sadness	7	.00	0	.00	5.304	.021

Notes: TS = TimeSlips.

<sup>a</sup>The total numbers of engagement and affect events that occurred in the TS facilities were 1,651 and 1,647, respectively.

<sup>b</sup>The total numbers of engagement and affect events that occurred in the control facilities were 1,250 and 1,245, respectively.

<sup>c</sup>The ratios for each subcategory of events (e.g., disengagement) under each major category (i.e., engagement and affect) were calculated by dividing the total number of events by the total number of events across subcategories.

( $\chi^2 = 24.72, p < .001$ ), touch ( $\chi^2 = 8.70, p < .01$ ), and verbal communication ( $\chi^2 = 14.07, p < .001$ ), whereas staff in the control facilities used more care-related touch ( $\chi^2 = 8.53, p < .01$ ) and care-verbal interactions ( $\chi^2 = 13.85, p < .001$ ). Staff in both groups exhibited very few neutral, protective, and oppressive behaviors. Although the ratios for interactions that were coded as “care touch” or “care verbal” were higher in the control homes, this pattern does not reflect more care activity: Instead, it reflects the lower number of total interactions that took place in the control facilities. When all interactions were recoded into three major categories—social interactions, care interactions, or interactions that included both care and social aspects—the latter group accounted for only 3% of the interactions. Also, there were substantially more social interactions between staff and residents in the TS facilities, but minimal differences in the number of care activities. These findings provide support for H3.

#### *Staff Attitudes Toward PWDs, Job Satisfaction, and Burnout*

The regression analyses results showed that staff who participated in the TS training were less likely to devalue residents with dementia ( $\beta = -.198, p = .013$ ), and they also held more positive views of these persons ( $\beta = .343, p < .001$ ), supporting H4. However, staff at the TS facilities who did not participate in TS training did not differ in either of

these two outcomes. No significant differences were observed between the TS facilities and the control facilities for any of the job satisfaction and burnout measures (Table 3), failing to support H5.

#### **Discussion**

A number of CE programs have been developed and offered for PWDs and their caregivers in NHs around the country in recent years. However, few rigorous investigations have been conducted to examine their effectiveness in improving outcomes among PWDs and their caregivers. In our study, after implementing the TS program intervention in nursing facilities for a period of 10 weeks, better outcomes were observed among staff and residents in TS facilities than in the control facilities. This finding suggests that there were spillover effects in the TS facilities from staff who directly participated in the TS program to staff who did not directly participate. These results are encouraging because our study design resulted in an extremely conservative test of whether there would be differences between the groups, and such differences were observed. Further, the results are consistent with the hypothesized pathways by which TS was predicted to influence both the residents and the NH staff.

One of the major findings of this study was the difference between TS and control facilities in the number of interactions between residents and staff and in the amount of resident engagement. Residents in the TS facilities were more engaged in

Table 2. Staff-Initiated Interactions With Residents

Type of interactions	TS facilities <sup>a</sup>		Control facilities <sup>b</sup>		$\chi^2$	
	<i>n</i>	Ratio <sup>c</sup>	<i>n</i>	Ratio <sup>c</sup>	Value	<i>p</i>
Specific types of interactions						
Social						
Social eye contact	779	.50	446	.41	24.72	<.001
Social failure free	33	.02	33	.03	1.541	.214
Social nonhierarchical	173	.11	111	.1	1.55	.213
Social touch	273	.18	154	.13	8.699	.003
Social verbal	984	.64	646	.56	14.07	<.001
Care						
Care eye contact	346	.22	286	.25	2.489	.115
Care nonhierarchical	170	.11	140	.12	0.986	.321
Care touch	251	.16	236	.21	8.526	.004
Care verbal	439	.28	402	.35	13.846	<.001
Neutral	62	.04	49	.04	0.122	.727
Protective						
Protective verbal	8	.01	6	.01	0.001	.979
Protective nonverbal	4	0	3	0	0	.986
Oppressive						
Oppressive verbal	4		5	0	0.626	.429
Oppressive nonverbal	9	.01	8	.01	0.141	.708
Three major categories of interactions						
Social only	996	.64	651	.57		
Care only	520	.33	467	.41		
Both social and care	43	.03	31	.03		
Total	1,559	1	1,149	1	15.336	.001

Notes: TS = TimeSlips.

<sup>a</sup>The total number of events that occurred in the TS facilities was 1,548.

<sup>b</sup>The total number of events that occurred in the control facilities was 1,146.

<sup>c</sup>The ratio for each subcategory of events (e.g., social failure free) under each major category (i.e., social, care, neutral, protective, and oppressive) was calculated by dividing the total number of events by the total number of events across subcategories.

interactions with others, whereas nonsocial engagement was more prevalent in the control facilities. Despite more challenging behaviors, fear or anxiety, and sadness among the TS residents, the magnitude of differences was relatively small, and these residents exhibited higher levels of general alertness when compared with the controls. Also, residents in the control facilities displayed more *other or neutral affect* (e.g., null behavior such as sleeping). These findings suggest that TS may activate residents and encourage them to become more engaged with others. Indeed, TS may induce a wide range of cognitive and emotional responses from residents. In any case, more research should be done to assess the possible negative consequences of TS, especially behavioral symptoms—such as increased challenging behaviors, anxiety, and sadness—to establish whether these findings are replicable. In our extensive anecdotal experience with TS, we have only one report of a participant acting out verbally. However, that behavior occurred even before TS was implemented in the facility.

Another major finding from this study was that the TS intervention program can affect the care that residents receive in NHs in a positive way. Staff members of TS facilities who participated in the TS training reported more positive views of patients with dementia and were less likely to devalue these patients after participation in the program. These enhanced attitudes appear to translate into the type and quality of interactions that staff members have with residents. There were fewer observation periods in which there were no staff–resident interactions in the TS facilities, and overall, staff in TS homes engaged in a greater number of interactions. It was also the case that staff in TS facilities engaged in a greater number of social interactions with residents than did staff in the control facilities. Staff members in TS facilities not only engaged in interactions more frequently with residents but also were more likely to make eye contact when they engaged with residents and more likely to touch residents during their social interactions. Regarding care-related interactions, more care–touch

Table 3. Regression Analyses on Tendency to Devalue Residents With Dementia and Tendency to Hold Positive Views of Residents With Dementia

Variable	Tendency to devalue residents with dementia <sup>a</sup>			Positive views of residents with dementia <sup>b</sup>		
	<i>B</i>	$\beta$	<i>p</i>	<i>B</i>	$\beta$	<i>p</i>
White <sup>c</sup> (vs. other)	-.015	-.003	.971			
Nurse's aide (vs. other)	.192	.041	.703	-.255	-.036	.708
Activity director (vs. other)	-.615	-.108	.265	1.139	.132	.172
Hours of dementia training <sup>c</sup>				.014	.092	.200
Length of employment <sup>c</sup>	.036	.203	.006			
TS training at TS facilities (vs. no training in control facilities)	-.936	-.198	.013	2.467	.343	<.001
No TS training at TS facilities (vs. no training in control facilities)	.253	.050	.528	.539	.170	.365
Adjusted <i>R</i> <sup>2</sup>	.091; <i>F</i> (6, 177) = 3.968			.127; <i>F</i> (5, 177) = 6.157		

Notes: TS = TimeSlips. For hours of dementia training, 1 = none; 2 = 1–8 hr; 3 = 9–16 hr; and 4 = 17 hr or more. For length of employment, 1 = 1 month or less; 2 = 2 months to a year; 3 = 1–2 years; 4 = 3–5 years; 5 = 5–10 years; and 6 = more than 10 years.

<sup>a</sup>Higher scores indicate a greater tendency to devalue residents.

<sup>b</sup>Higher scores indicate a greater tendency to view residents positively.

<sup>c</sup>White, hours of dementia training, and length of employment variables were not included in the models due to nonsignificant zero-order correlations with the respective outcome variables.

interactions (e.g., helping a resident out of a chair) were observed in the control homes. However, this may reflect staff efficiency as opposed to taking the time to communicate with residents using verbal instructions.

Although we found improved staff attitudes toward PWDs in TS facilities among staff who participated in TS training, we did not observe differences in measures of job satisfaction and burnout between the groups. There are several possible reasons for these findings. It is possible that a longer period of exposure to the TS intervention could have resulted in differences in job satisfaction and burnout. Also, more specific measures of job satisfaction (e.g., “intrinsic” vs. “total job satisfaction”) might have yielded differences. Or, it may be that the impact of TS is more localized and is insufficient in magnitude to overcome a myriad of other factors that affect job satisfaction. For example, researchers have found that greater nurse autonomy, more recognition of nurses, routinization, communication with peers and one’s supervisor, fairness, and a having a higher internal locus of control predict higher job satisfaction (Blegen, 1993). Nurse background characteristics, such as having more years of education, and work conditions (facilities with an apparently strong commitment to high-quality care) are also associated with greater job satisfaction (Ingersoll, Olsan, Drew-

Cates, DeVinney, & Davies, 2002). In contrast, exposure to aggressive and disruptive behaviors by residents is a strong negative predictor of job satisfaction (Dougherty, Bolger, Preston, Jones, & Payne, 1992). It is also possible that the impact of TS on job satisfaction may be delayed because job satisfaction is a less proximal outcome.

Although the findings from this study provide important insights into the value of TS and, more generally, CE programs, they are limited in several ways due to the study design. Faced with limited resources, we used a time-sampling method as an efficient mechanism for collecting data to compare staff–resident interactions across TS and non-TS facilities. Unfortunately, however, the method allowed us to neither identify in advance which SCU residents would provide data nor did it allow us to limit our observations to residents who were only exposed to only the TS intervention. With greater resources, future studies would benefit from the use of a randomized control trial design with residents as the unit of analysis.

The findings from this study are also limited by the use of a post-only study design. Because outcome variables were assessed 2 weeks after the intervention, but not prior to the intervention, it was not possible to examine patterns of change over time. Future research is needed to examine how changes in resident outcomes occur over time.

In sum, this study provides some of the first empirical evidence that CE interventions can benefit PWDs residing in NHs. By using an experimental study design and time-sampling procedures, the investigators were able to assess the impact of implementing TS on staff–resident interactions and resident engagement. Although the study was limited to NHs with SCUs, the differences observed between homes in the TS group and the control group in the quantity and type of staff–resident interactions were statistically significant. These findings are particularly notable given the limitations of the study design and the distal outcomes that were observed. The randomized assignment of the participating NHs provided data that afford initial evidence that TS, in particular, and CE programs, in general, can benefit residents by altering staff perceptions and patterns of staff–resident interactions.

TimeSlips is a creative storytelling method that fosters meaningful engagement between PWDs and their caregivers by encouraging storytellers with dementia to turn away from memory and reminiscence and turn toward building a story with their imaginations. Clearly, there is evidence that TS offers staff and residents an opportunity to interact in a manner that can alter staff perceptions of PWDs and encourage more social interaction. The positive findings from this study should encourage both practitioners and researchers to continue to explore the merits of CE programs as useful strategies for enhancing the quality of life for PWDs and important tools for facilitating *culture change* in LTC facilities.

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Appendix  
Interrater Reliability for All Types of Observation Codes

Codes	No. in agreement	Total observations	% in agreement	$\kappa$ value	$p$
Resident engagement codes					
Engaged	823	939	87.65	.626	<.001
Disengaged	889	939	94.68	.670	<.001
Nonsocial engagement	851	939	90.63	.536	<.001
Challenging behavior	933	939	99.36	.397	<.001
Resident affect codes					
Anger	933	939	99.36	.248	<.001
Fear/anxiety	927	939	98.72	.448	<.001
Pleasure	905	939	96.38	.612	<.001
General alertness	869	939	92.55	.677	<.001
Sadness	936	939	99.68	— <sup>a</sup>	— <sup>a</sup>
Other (neutral)	917	939	97.66	.810	<.001
Staff codes					
Social eye contact	319	385	82.86	.654	<.001
Social failure free	377	385	97.92	.626	<.001
Social nonhierarchical	360	385	93.51	.715	<.001
Social touch	356	385	92.47	.776	<.001
Social verbal	338	385	87.79	.753	<.001
Care touch	347	385	90.13	.710	<.001
Care verbal	338	385	87.79	.736	<.001
Care eye contact	340	385	88.31	.701	<.001
Care nonhierarchical	348	385	90.39	.575	<.001
Neutral	376	385	97.66	.698	<.001
Protective verbal	383	385	99.48	.748	<.001
Protective nonverbal	384	385	99.74	— <sup>a</sup>	— <sup>a</sup>
Oppressive verbal	384	385	99.74	.856	<.001
Oppressive nonverbal	384	385	99.74	.922	<.001

Note: <sup>a</sup>Reliability estimates could not be computed for these variables because all responses were in one category only.