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THE EFFECT OF GAMBLING ACTIVITIES ON HAPPINESS LEVELS OF NURSING HOME RESIDENTS

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The current study evaluated the effect of participating in simulated gambling activities on happiness levels of 3 nursing home residents. A 4-component analysis was used to measure objective responses associated with happiness during baseline, varying durations of engagement in simulated gambling activities, and 2 follow-up periods. Results indicated that all residents exhibited a higher percentage of happiness levels while engaged in simulated gambling activities compared with baseline. Follow-up assessment took place 10 min and 30 min following the intervention; no lasting effects were observed.

Key words: elderly, engagement, gambling, happiness

Engaging the elderly in preferred activities and thus improving their quality of life has the potential to produce positive health benefits (Wang, Karp, Winblad, & Fratiglioni, 2002). One such activity is recreational gambling. Recent research suggests that positive health benefits from gambling can occur in the elderly (Vander Bilt, Dodge, Pandav, Shaffer, & Ganguli, 2004). In this study, a large group of rural community-dwelling elderly was assessed across a number of factors including the predictability of regular gambling. Those individuals who frequently gambled had higher self-reported health, lower rates of depression, and a greater social support network than nongambling peers. Other researchers have noted that gambling is beneficial to the mental health of the elderly because it not only provides a social activity but also involves using problem-solving skills, concentration, and memory (Christensen & Patsdaughter, 2004).

Constructs such as depression, social support, and concentration often prevent behavioral researchers from conducting controlled examinations, because the dependent variable of interest is difficult to define operationally. One exception is the behavior-analytic research on happiness (Green & Reid, 1996). Although predominantly examined in individuals with developmental disabilities, recently the research has been extended to the elderly population (Moore, Delaney, & Dixon, 2007). Given the potential physical and psychological health benefits of gambling for the elderly, we should explore the option of allowing such an opportunity in long-term care facilities. However, before instating such gambling activities on a wide scale, preference for and reaction to the opportunity to gamble should be assessed in this population. Therefore, the purpose of the present study was to examine whether elderly nursing home residents would prefer to interact with gambling stimuli and display the emotional affect of happiness while engaged in simulated gambling or nongambling activities.

METHOD

Setting and Participants

The study was conducted in a 159-bed nursing facility. Three residents who had a prior history of gambling (as reported by caregivers) served as participants in the study. Donna, Lily, and Fred had resided in the nursing home for at least 4 years, were over the age of 80, and had no diagnoses of dementia or other cognitive disabilities, as evidenced by medical files provided by the nursing home.

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Response Measurement, Interobserver Agreement, and Experimental Design

Happiness, as described by Green and Reid (1996), was defined as any vocalization or facial expression that could be considered typical of happiness, which includes smiling and laughing. Residents were scored as *unhappy* if yelling, frowning, or crying was observed, and *no affect* if neither condition was observed (Moore et al., 2007). The effects of gambling on these happiness measures were evaluated under four conditions each day: baseline, simulated gambling, 10 min after gambling, and 30 min after gambling. Levels of happiness during simulated gambling and 10 min and 30 min after gambling were compared to baseline in a four-component analysis (see Rapp, 2006). Each participant was engaged in the simulated gambling activity for 5-min, 10-min, and 20-min intervals. Observers used 10-s partial-interval recording to collect data.

Two independent observers recorded data for 33% of the sessions. Interobserver agreement for happiness measures was determined by dividing the number of agreements of emotional affect by the number of agreements plus disagreements and converting the ratio to a percentage. Mean interobserver agreement was 99% (range, 96% to 100%).

Procedure

Preference assessment. We conducted a two-phase preference assessment using the paired-choice method. During the first preference assessment, the experimenter presented five categories (animals, food, letters, people, and casino games) of visual stimuli (11 cm by 15 cm) to the resident in pairs of two. Any participant who selected gambling less than second most frequently was excluded from the study. This did not occur for any of the participants. During the second preference assessment, stimuli were limited to pictures of gambling and people (the top two chosen sets from Phase 1 for all participants). Participants who chose the gambling stimuli more often continued on to the next condition of the experiment.

Simulated gambling activity. All residents were exposed to a simulated gambling game of their choice on a laptop computer for two sessions of each duration of engagement (i.e., 5, 10, and 20 min). Data on happiness levels were collected during a 10-min baseline prior to the implementation of the gambling activity when the experimenter first entered the facility and located the resident in the nursing home. No controls for preexperimental observation settings were made; thus, the resident could have been in various settings (e.g., room, dining hall) or with various people (family members, staff, other residents).

After the 10-min baseline observation, the experimenter directed the resident to play the simulated gambling game (Hoyle Casino Games). The experimenter asked the participant to choose among playing slot machines, standard video poker, roulette, blackjack, or craps. No actual money was exchanged during the course of the experiment. Thus, the gambling activity was an analogue to actual gambling. All bets and winnings were purely hypothetical. When the participant was seated at a table with the laptop in front of him or her, the experimenter started the computer, loaded the software, and oriented the participant to the computer mouse and screen with prompts such as pointing or gesturing. However, during the simulated gambling activity, the experimenter attempted to minimize social interactions with the participant to evaluate the isolated effects of the simulated gambling task. For example, if the resident attempted to interact, the experimenter directed him or her back to the game.

After the resident played the simulated gambling game for one of the three potential engagement durations, the individual returned to his or her previous activity. The duration of engagement on a particular day was determined randomly for each participant. Follow-up data were collected on happiness levels at 10-min

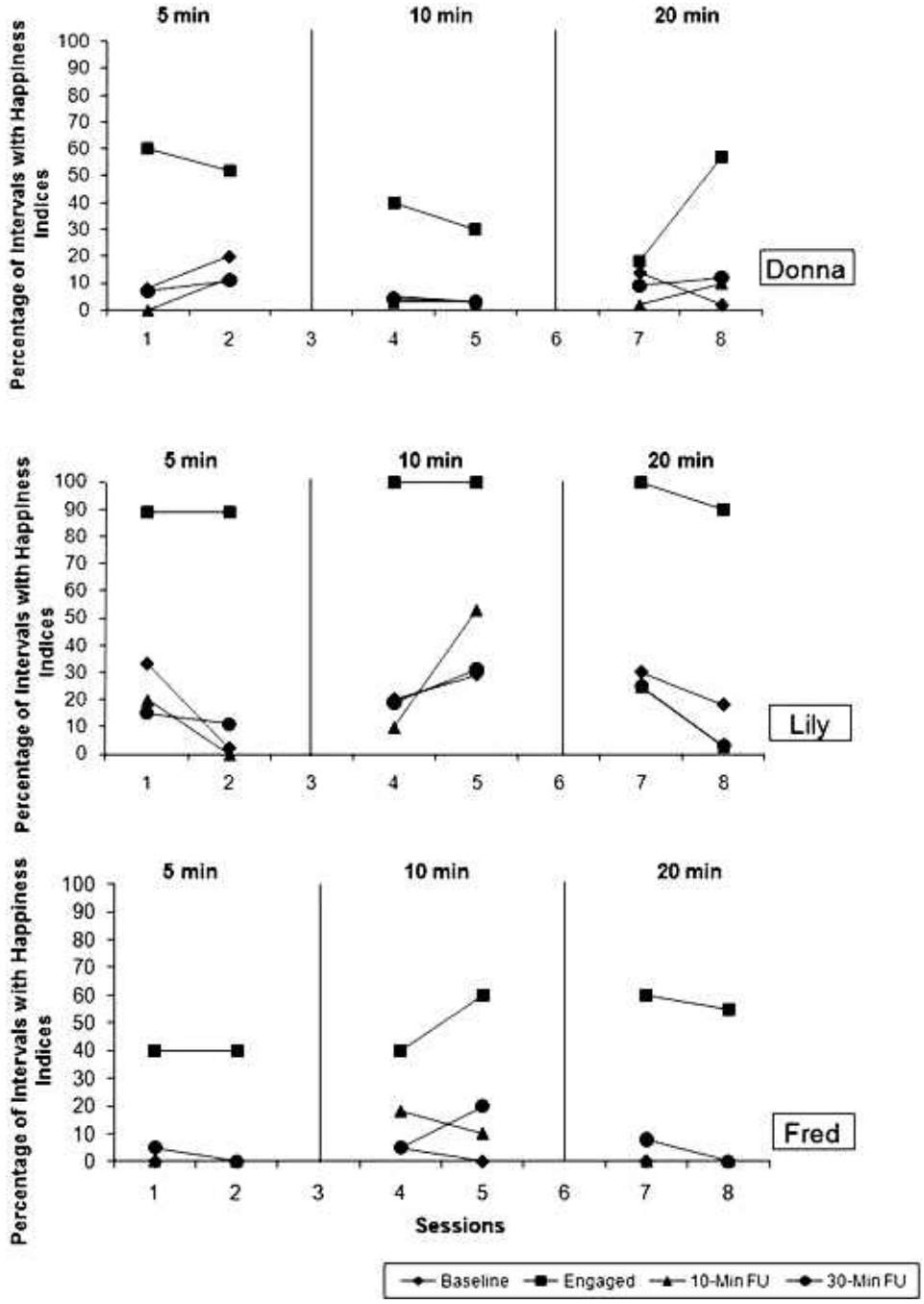

Figure 1. Percentage of intervals with happiness measures at each duration of engagement for all three residents.

and 30-min intervals following the simulated gambling activity. This phase was repeated until each resident had two exposures to each engagement duration.

RESULTS AND DISCUSSION

During the initial phase of the paired-choice preference assessment, Donna, Lily, and Fred

chose gambling stimuli 81%, 76%, and 100% of the time, respectively. During the phase of the assessment that was limited to selection of gambling or people stimuli, all three individuals chose gambling stimuli on 75% of the trials and people stimuli on only 25% of the trials. These results indicated that these residents showed a preference for gambling activities.

Figure 1 shows the percentage of happiness measures during baseline, engagement, and follow-up periods for Donna, Lily, and Fred. The data are grouped by the duration of simulated gambling and are not displayed in the actual order in which the sessions were conducted. During the course of this study, none of the participants demonstrated unhappiness (e.g., crying). As found by Moore et al. (2007), baseline levels of happiness were near zero. Residents were frequently observed watching television, smoking cigarettes, or sitting alone with no interaction. When engaging in the simulated gambling activities, Donna and Lily most often chose to play blackjack, and Fred chose to play five-card poker. All three residents showed an increase in happiness from baseline to the engagement period during all durations in the study. However, none of the observations at follow-up indicated that levels of happiness were maintained after engagement ended.

This study extends the behavioral literature in several ways. First, happiness measures (Green & Reid, 1996) were used, which provide additional support for the objective measure of emotional affect in an elderly population (Moore et al., 2007). Second, a simulated gambling activity that did not result in monetary winnings increased happiness levels in elderly individuals during game-interaction intervals. However, because all participants in the current study had a history of and preference for gambling activities, it is unknown whether these effects would generalize to an elderly population that does not have experience with gambling.

Future studies on gambling in the elderly should compare the effects of activities that require assistance with those that do not to evaluate whether social assistance or interactions with young nonstaff members contribute to levels of happiness. In addition, studies involving gambling and residents of nursing homes could incorporate other types of games and measures to further evaluate a potential beneficial relation between the two variables. For example, a casino night could be implemented in the nursing home, and happiness levels as well as positive social interactions could be measured. Lastly, because the current data showed that various durations of the simulated gambling activity did not differentially affect levels of happiness, future studies could examine other parameters of the gaming task such as type, frequency, or manner of presentation.

In conclusion, we have reached a point in our society when medical advances are making it possible for people to live much longer than they did even a few decades ago (Baltes & Smith, 2003). However, additional research is needed to identify factors that promote mental and emotional well-being during these later years of life.

REFERENCES

Baltes, P. B., & Smith, J. (2003). New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age. *Gerontology, 49*, 123–135.

Christensen, M. H., & Patsdaughter, C. A. (2004). Gambling behaviors in black older adults: Perceived effects on health. *Journal of Gerontological Nursing, 4*, 34–39.

Green, C. W., & Reid, D. H. (1996). Defining, validating, and increasing indices of happiness among people with profound multiple disabilities. *Journal of Applied Behavior Analysis, 29*, 67–78.

Moore, K., Delaney, J. A., & Dixon, M. R. (2007). Using indices of happiness to examine the influence of environmental enhancements for nursing home residents with Alzheimer's disease. *Journal of Applied Behavior Analysis, 40*, 541–544.

Rapp, J. T. (2006). Toward an empirical method for identifying matched stimulation for automatically reinforced behavior: A preliminary investigation. *Journal of Applied Behavior Analysis, 39*, 137–140.

Vander Bilt, J., Dodge, H. H., Pandav, R., Shaffer, H. J., & Ganguli, M. (2004). Gambling participation and social support among older adults: A longitudinal community study. *Journal of Gambling Studies*, *20*, 373–389.

Wang, H., Karp, A., Winblad, B., & Fratiglioni, L. (2002). Late-life engagement in social and leisure activities is associated with a decreased risk of dementia: A longitudinal study from the Kungsholmen project. *American Journal of Epidemiology*, *155*, 1081–1087.

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