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**Development of a Reinforcer Assessment: A Measure of Potential Reinforcers in the Lives
of Older Adults**

By

Nicole A. Praska

A Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of

Master of Arts

In

Clinical Psychology

Minnesota State University, Mankato

Mankato, Minnesota

May 2022

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Development of a Reinforcer Assessment: A Measure of Potential Reinforcers in the Lives of

Older Adults

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Abstract

The aim of this study was to create a new measure that assesses potential reinforcers in the lives of older adults residing in assisted living facilities. It is important to assess what an individual finds rewarding since individuals have a greater quality of life if they are doing activities that they enjoy. The study involved a two-step process. First, a list of potential reinforcers was created and evaluated by professionals in the field. Then this list was formatted into a survey and presented to 612 older adults. Participants rated these potential reinforcers on a Likert scale. Results were then evaluated using a *principal components analysis* resulting in the survey being consolidated into a 28 item survey with items fitting into four categories. This survey can function as a measure to identify what an individual finds rewarding which is useful information in an assisted living facility. Staff can use this tool to increase opportunities for positive reinforcement and overall increase pleasant activities in general.

Keywords: preference assessment, older adults, reinforcer, institutions, programming, life satisfaction.

Introduction

The number of individuals over the age of 65 has been increasing since the 1990s. By 2030, Americans over the age of 65 will make up 21% of the population (Vespa, 2019). In addition, it is estimated that by 2034, older adults will be more prevalent than children and by 2060, one in four Americans will be 65 years and older (Vespa, 2019). This leads to a growing concern of how to properly care for these older adults. With the number of older adults increasing, it can be assumed that more individuals will utilize assisted living facilities.

Long-Term Care Facility Options

With these projected increases, the country will see greater demands for long-term care. This includes a wide variety of services. Although, a majority (75%) of individuals are cared for by family, many older adults are transitioned into a long-term care facility (Favrault & Dey, 2015). From 2015 to 2019, it was projected that 52.3% of adults turning 65 will live in an assisted living facility at some point of their lives (Favrault & Dey, 2015). Specifically, 33.4% will live in a facility for 1 year or longer. As the baby-boomer generation ages, this demand for assisted living facilities (ALFs) and nursing homes will increase significantly (Vespa, 2019). ALFs offer limited services and have more privacy compared to nursing homes. The cost of living at an ALF is on average half the price of living in a nursing home (Minnesota Department of Human Services, n.d.). ALFs are designed for individuals with mild to moderate physical or cognitive impairment. Since ALFs offer limited services, those who reside there must not require full-time nursing services (Hawes et al., 2003). ALFs allow individuals to maintain independence while having low levels of services available.

Challenges Within Long-term Care Facilities.

Transitioning from independence or family caregiving to an assisted living facility can be challenging. While the care that family provides is generally flexible and revolves around the individual's needs, long-term care facilities are structured and have formal rules (Russell & Foreman, 2002). This loss of freedom can make it more difficult for residents to access pleasant, engaging activities. With this loss of access to pleasant events can come boredom, depression, and deterioration in cognitive abilities.

As cognitive and physical abilities deteriorate, the prevalence of behavioral and emotional disturbances increases. This is particularly true for individuals with cognitive impairments, who comprise up to 50% of individuals living in ALFs (Smith et al., 2008). Within long-term care facilities, there is a documented high prevalence of behavioral problems such as resistance to care wandering, verbal aggression, physical aggression, and psychiatric/emotional problems (Schonfeld, 2003). Also, many of these behaviors occur in the context of activities of daily living (ADLs) thereby placing a demand on staff, particularly certified nursing assistants (CNAs) who do the majority of hands-on caregiving tasks with residents. These demands result in high injury rates, with more than half of CNAs being injured at work. These demands also increase burnout and job turnover, with national retention rates for nurses being estimate between 62.5% and 67.3% (Donoghue, 2009; Squillace et al., 2009). Therefore, it is important to consider how assessing preferences among older adults could alleviate some of these challenges.

The Role of Reinforcers

When considering preferences amongst a population, it is important to look at the role of reinforcers. A reinforcer is a stimulus that produces a concomitant increase in a behavior when it

occurs contingent with a response (American Psychological Association, n.d). An example of a reinforcer in an assisted living setting is receiving a complement. The complement gives the individual attention and increases the likelihood of the behavior that resulted in the compliment. Partaking in preferred relations and activities can improve quality of life and decreases social isolation (Winstead et al., 2014) as well as reduce depression (Zhang et al., 2019), and reduce behavioral problems (Tak et al., 2015). Many “challenging” behaviors displayed by residents, particularly those with cognitive impairment, can be attributed to an individual’s loss of access to previously preferred activities or reinforcers made available through social contact. In a sense, these behaviors communicate needs or displeasure when language abilities begin to deteriorate due to age and or diseases that cause cognitive impairment such as Alzheimer’s disease. Individuals have a greater quality of life if they are doing activities that they enjoy. These preferred activities may act as reinforcers.

Reinforcing Dependent Behaviors

It is also common for assisted living homes to decrease personal control and increase reinforcement for dependency. This has been found in research related to what is called the “dependence-support script” and the “independent-ignore script” (Baltes & Wahl, 1996). This occurs when dependent behaviors of residents are attended to by staff and independent behaviors are ignored by staff. An example of this would be staff assisting someone with their morning routine. The individual may be able to get ready for the day independently, however they are reinforced to obtain help by the attention given by staff. Then when they get ready independently, they do not receive attention (i.e., reinforcement). This dynamic results in a pattern where residents learn to engage in dependent behaviors, resulting in more personal contact with staff, which often serves as a powerful reinforcer within the context of long-term

care facilities that are relatively devoid of personal contact. These scripts can be successfully changed by altering response contingencies (Baltes & Wahl, 1996). Staff can instead give positive attention to an individual after they performed their routine independently. The staff could complement their outfit or talk with them during breakfast. The reinforcing attention would no longer require an individual to lose independence, but instead it reinforces independence. However, staffing shortages and quick turnover rates within assisted living facilities make it difficult to notice incorrect uses of reinforcement and maintain gains (Meeks et al., 2006).

This dependency can be divided into learned helplessness, learned dependency, and behavioral dependency (Baltes, 1995). When an individual enters an assisted living environment, they lose the ability to control many aspects of their daily life. An example of this loss of control is an individual no longer having access to a car. They may have to depend on the assisted living facility for transportation. This lack of control can turn into learned helplessness (Baltes, 1995). With understanding that attention is rewarding, dependent behaviors become rewarding leading to learned dependency and the increase of dependent behaviors. This is like the dependence-support script (Baltes, 1995; Baltes & Wahl, 1996). The example of attention from earlier helps explain this dependency. It is important to know what individuals enjoy to prevent reinforcing dependent behaviors. To prevent this and increase engagement in reinforcing activities, there needs to be an assessment of events. One way of knowing what someone enjoys and is rewarding to them is by using a preference assessment

Preference Assessments

The identification of reinforcers can be assessed through multiple methods, the simplest being a preference survey (King & Houlihan, 2018). Preference assessments are convenient and

have been used by therapists, teachers, and assisted living facilities. By Minnesota law, nursing homes, assisted living facilities, and similar facilities must do a preference assessment with individuals during the intake process (Minnesota Long-Term Care Consultation Services Practice, Minn. Stat. §§ 256B.0911, 2022). The use of preference assessments is to identify reinforcing events and activities. It is a person-centered approach at ensuring that preferred activities are available since partaking in preferred activities promotes the wellbeing and longevity of residents while decreasing depression (Goldfarb, 1969). Preference assessments, pleasant event schedules, reinforcer surveys, and other similar tools are meant to gather information on what an individual finds fun, enjoyable, and/or meaningful. The use of preference assessments can increase activity engagement, while decreasing behaviors and psychological symptoms (Wagner et al., 2020). Therefore, staff can use these tools to increase opportunities for positive reinforcement and overall increase pleasant activities in general.

Existing Preference and Reward Surveys

Reinforcer surveys have been developed for a variety of populations, such as adolescents and persons with developmental disabilities (King & Houlihan, 2018; Pace et al., 1985). In addition, some efforts have been made to develop instruments designed to identify pleasant activities for older adults. For example, the Pleasant Events Schedule (PES) was designed to identify preferred activities. There are many versions of the PES and in 2009, Meeks and colleagues created a specific version to be used in nursing home settings. This 30-item inventory covers available activities and was found to be reliable in assessing pleasurable events. This specific PES has primarily been used to identify activities as a means for treating depression, which is a common symptom of those living in assisted living facilities. Another PES is The Pleasant Event Schedule – Alzheimer’s Disease (PES-AD). The PES-AD is a measure for use

with individuals with Alzheimer's Disease (Silva de Souza Saviotti & Pires Camargo Novelli, 2017).

The Reinforcement Survey Schedule (RSS) is a tool that can be used in therapy, training, and research (Cautela & Kastenbaum, 1967). The RSS is not specifically designed for use with older adults. This survey provided evidence suggesting individual differences associated with reinforcer use and indicated that the effectiveness of potential reinforcers varies amongst individuals. In 1990, Houlihan et al. expanded on the RSS and created a survey specifically targeting the geriatric population and most specifically those entering assisted living facilities. This study specifically looked at test-retest reliability and rank order of self-reported survey data and surveys taken by loved ones. Overall, the survey had good reliability. This survey acted as a guide for developing the current survey in this study.

The Current Study

The purpose of this study was to develop a comprehensive instrument that accurately identifies potential reinforcers in older adults. Reinforcing items and activities are those which bring an individual joy and increase behaviors that improve the quality of life. This questionnaire is designed for the general older adult population entering assisted living facilities. This survey was designed to address these limitations in existing surveys. One of these limitations is that many of the current and previous surveys were designed specifically for individuals with cognitive impairments or mental health diagnosis (Meeks et al., 2009; Pace et al., 1985; Silva de Souza Saviotti & Pires Camargo Novelli, 2017). There has also been a lack of potential social reinforcers included in surveys for older adults (Meeks et al., 2009 ; Houlihan et al., 1990). Finally, there is a need for an up-to-date survey specifically for the older adult population. This

survey is designed for a less impaired population, it includes potential social reinforcers, and the items are potential reinforcers that reflect today's day and age (i.e., technology and culture).

The questionnaire developed is a rapid survey for older adults to fill out independently or with guidance from a companion or guardian. This will allow assisted living facility staff to gather personal preference information on specific items or activities that may be useful to include as part of routines as well as behavior programs. Gathering this information may provide utility in structuring activities and interactions in a person-centered manner. This study aims to investigate 1) what older adults find rewarding, 2) what older adults do not find rewarding, and 3) how a structured preference assessment can improve quality of life in residential settings. A secondary goal of this study is to validate this tool to be used in a variety of assisted living settings.

Method- Part 1

Design

Researchers divided the experiment into two parts. The first part involved creating a list of potential reinforcers and then performing a subject matter expert analysis (SME). The second part consisted of distributing a condensed version of the survey to older adults. The Methods and Results sections of this article have been separated into two parts due to the nature of the design.

Participants

The initial potential reinforcer list was created by three researchers with experience working in clinical settings with older adults and/or conducting research with this population. This list was distributed to 10 professionals in the field who served as subject matter experts. These professionals included assisted living staff, CNAs, program directors at an assisted living

establishment, and fellow geropsychology researchers. These professionals added other potential reinforcers to the list. The final list comprised of 126 potential reinforcers.

Procedure

This final list was uploaded onto Qualtrics and presented to the 10 subject matter experts to determine how clear and appropriate each survey item was and to which items should be retained on the survey. These subject matter experts rated each item on the following scale, “definitely should be included in the measure,” “probably should be included in the measure,” “could consider if space allows,” or “definitely should be omitted and not included in the measure.”

Results-Part 1

Based on this subject matter review, the survey was shortened to include the top 59 items that were judged to be clearest and most relevant (see Appendix B). Figure 1 includes all potential reinforcers and the SME results. Items were included in the survey if six out of the ten experts rated the item as “definitely should be included in the final measure.” In addition to this, the questions, “how rewarding would you find going to a fair” and question “how rewarding would you find going to a festival” were combined resulting in “how rewarding would you find going to a fair or festival.” Item “how rewarding would you find playing card games” and item “how rewarding would you find playing board games” were also combined into “how rewarding would you find playing card games or board games.”

Figure 1
SME Results







Methods-Part 2

Design

A survey was created with 59 of the most recommended potential reinforcers from the previous SME. The survey began with an informed consent form (see Appendix A). If consent was obtained, participants were presented with a series of demographic questions inquiring about age, gender, ethnicity, level of education, current living situation, state of residence, if the participant has concerns or a diagnosis related to memory, and whether the participant have ever lived in an assisted living facility or nursing home. If individuals reported being less than 65 years of age or indicated a diagnosed memory impairment, they were directed to the end of the survey. Participants were then presented with the survey, which included instructions on how to complete the survey (see Appendix B). The survey consisted of seven sections corresponding to seven different categories of potential reinforcers: 1) family related reinforcers, 2) social reinforcers (not family related), 3) staff-specific reinforcers, 4) general social reinforcers, games, hobbies, leisure activities or general areas of interest reinforcers, 5) religious reinforcers, 6) consumables (food and beverage) reinforcers, and 7) outing related reinforcers. Using a Likert-type scale, participants were asked to rate each potential reinforcer as “not at all rewarding”, “mildly rewarding”, “neutral”, “moderately rewarding”, or “extremely rewarding.”

Participant recruitment was conducted in a variety of ways. For example, a paper-pencil version of the survey was delivered and administered to nearby assisted living and nursing home facilities. In addition, an online version of the survey was posted on social media. Finally, participants were also gathered via Prolific, a service that helps researchers recruit participants by connecting them with people around the world, while offering an ethical way to pay participants. These participants were given a small stipend for their time.

Participants

Participants ($n = 612$) were required to be 65 years of age or older and have no known diagnosis of a memory or cognitive disorder. The sample ranged in age from 65 to 93 with the mean being 70. Most participants were of binary gender categorizations identifying as female ($n = 364$), and male ($n=245$). Regarding ethnicity, 89.38% of participants reported being white ($n = 547$). Other ethnicities represented in the sample include Asian ($n = 7$), Black or African American ($n = 36$), Hispanic or Latino ($n = 8$), Indian or Alaska native ($n = 2$), Native Hawaiian or Other Pacific Islander ($n = 8$), and other ($n = 4$). Most of the participants were married ($n = 295$), with the remaining participants reported being divorced ($n = 146$), never married ($n = 77$), separated ($n = 13$), and widowed ($n = 81$). The most frequently reported educational attainment was a 4-year bachelor's degree ($n = 184$), master's degree ($n = 133$), and some college but no degree ($n = 119$). Other participants had a 2-year associate degree ($n = 66$), doctoral degree ($n = 23$), high school diploma or equivalent including GED ($n = 59$), less than a high school degree ($n = 2$), or professional degree (JD, MD; $n = 23$). A total of 207 participants identified living alone in their own dwelling. Most participants lived in a household with other people ($n = 355$). Forty participants live in a facility such as a nursing home and eight participants lived in other types of residential facilities. Participants lived in 46 of the 50 states with the highest percentage living in Florida ($n = 70$). The next most participant populated states are Minnesota ($n = 54$), California ($n = 52$), and Texas ($n = 31$).

Results-Part 2

The 59-item survey was subjected to a *principal component analysis* (PCA) with orthogonal rotation, using RStudio version 4.2.3. The PCA was used to reduce the size of the

survey while still providing adequate information about a broad set of preferences. In essence, a PCA takes large data sets and simplifies them, keeping the most pertinent information. The PCA identifies underlying components that best summarize patterns of response (King & Houlihan, 2018). PCA results can be found in figure 3. For this study, data was included if it had the majority of questions answered. Questions with skipped questions were included as “NA” and R-Studio was instructed to run statistics regardless of the “NAs.” Components with eigenvalues greater than or equal to one were considered significant. A cutoff point of 0.55 was used for factor loading. The factors were named based off the items within the factor that loaded heavy on each. Four subscales were found, 1) interactions, 2) food/entertainment, 3) family/friends, and 4) faith (see table 1). The subscale “interactions” consists of 10 items ($\alpha = 0.90$); “food/entertainment” consists of 8 items ($\alpha = 0.82$); “family/friends” consists of 4 items ($\alpha = 0.85$); and “faith” consists of 4 items ($\alpha = 0.94$). The item content and factor loading for the subscale is presented in table 2.

Table 1

Factor Loadings and Themes

Factor Titles			
Factor 1 (Interactions)	Factor 2 (Food/Entertainment)	Factor 3 (Family/Friends)	Factor 4 (Faith)
8	40	1	3
9	41	4	32
10	42	5	33
11	51	6	34
12	52		
13	54		
14	58		
15	59		
16			
17			
18			
20			

Figure 2

How participants responded to each factor

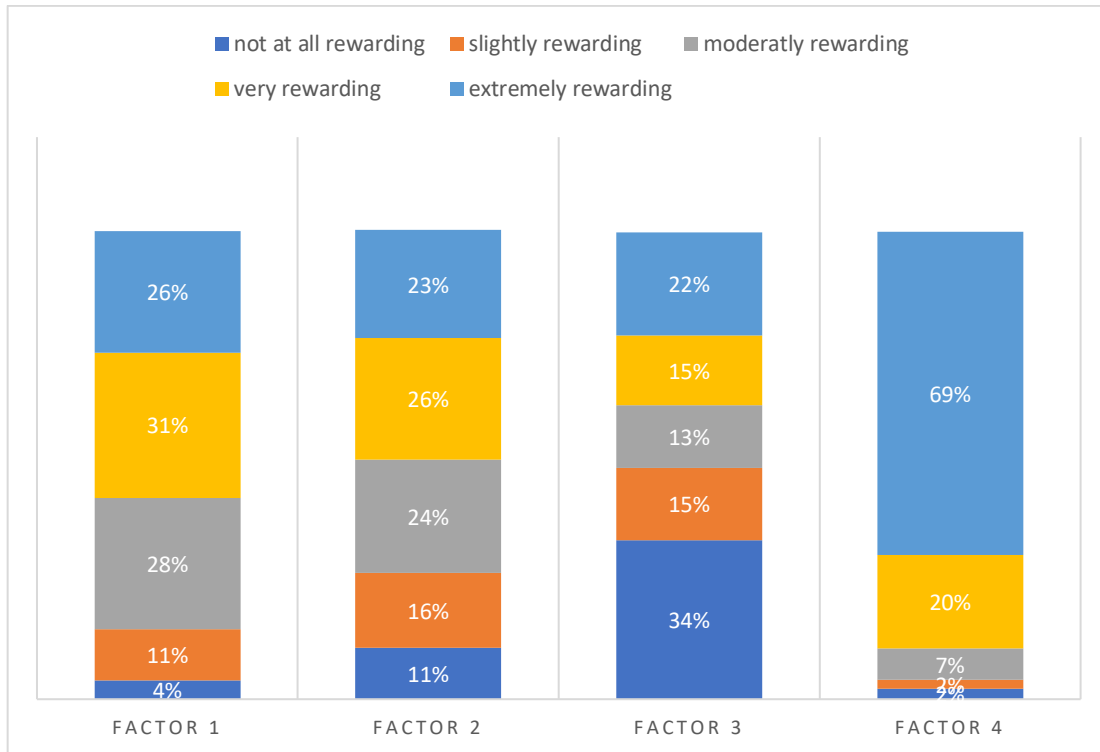


Table 2
Principle Component Analysis Structure

Structure	Loadings
<i>Factor 1: Interactions</i>	
How rewarding would you find talking with other residents where you live?	0.636
How rewarding would you find group exercise?	0.553
How rewarding would you find having volunteer programs visit?	0.585
How rewarding would you find talking with your favorite staff/nurse?	0.737
How rewarding would you find playing a game with your favorite staff/nurse?	0.676
How rewarding would you find having your favorite staff help you get ready for the day?	0.680
How rewarding would you find going on a walk with your favorite staff/nurse?	0.684
How rewarding would you find someone giving you a complement?	0.655
How rewarding would you find having someone listening to your problems or concerns?	0.670
How rewarding would you find getting a hug?	0.608
How rewarding would you find being asked questions about yourself (e.g., your job, family, hobbies, achievements)?	0.606
How rewarding would you find interacting with someone from your own culture?	0.574
<i>Factor 2: Food/ Entertainment</i>	
How rewarding would you find eating chips or crackers?	0.606
How rewarding would you find eating sweets (candy, pie, cakes, pudding, ice cream)?	0.589
How rewarding would you find eating takeout or fast food?	0.628
How rewarding would you find going to the mall?	0.565
How rewarding would you find going out to eat?	0.643
How rewarding would you find going to a movie?	0.599
How rewarding would you find going to a fair or festival?	0.558
How rewarding would you find going to a casino?	0.549
<i>Factor 3: Family/ Friends</i>	
How rewarding would you find it to visit your family in person?	0.664
How rewarding would you find it to go to family events?	0.723
How rewarding would you find it to go on a family outing to a destination (e.g., coffee shop, park, or museum)	0.712
How rewarding would you find it to see friends in person?	0.549
<i>Factor 4: Faith</i>	
How rewarding would you find it to participate in religious based activities with family (going to church/praying)?	0.812
How rewarding would you find praying?	0.826
How rewarding would you find attending services or watching services on TV?	0.848
How rewarding would you find having a religious figure such as a minister or priest visit?	0.831

Figure 3

PCA Results



Discussion

The purpose of this study was to develop a measure that could be used in long-term care facilities to gauge to level of interest individuals had regarding potential reinforcers. This involved implementing a two-stage process to which a list of potential reinforcers was first developed by collaborating with long term care employees and experts. This list of 126 items was then evaluated by different long-term care employees and professionals to create a survey. This survey contained 59 items and was then validated by distributing it to facility members and older adults in the community.

The *principal components analysis* ran on these results found 28 items fitting into four factors with eigenvalues greater than 1. These factors were labeled: interactions, food/entertainment, family/friends, and faith. All four factors had high levels of internal consistency. This reduction in survey items makes the survey reasonable for individuals to complete. The initial survey took individuals approximately 10-15 minutes to take, and the estimated time to complete the revised survey is 5-7min. Thus, the survey can be a simple addition to the admission processes when someone is admitted to a long-term care facility. This revised survey can be found in Appendix C.

Frequency data (as shown in Figure 3) was especially interesting because it indicated which potential reinforcers individuals found rewarding, and items they would not find rewarding. The highest rated item was seeing family in person. Seeing family in person was suspected to be a highly rated item. However, surprisingly attending religious services and watching services virtually was not highly rated and had the most “not rewarding” responses. This is surprising, especially since many assisted living facilities offer church services within the establishment, virtual options, or options to attend services outside of facility. Knowing how

these items were rated might prove useful to both researchers and facility administrators who wish to structure activities that are rated as rewarding.

Compared to previous surveys, this survey includes more communication or interaction items. Specifically, prior to revising the survey, the initial list included a variety of social potential reinforcers, and items depicting social interactions that promote dependent behaviors. Although many of these did not make it to the final rendition of the survey, many staff specific social reinforcers did. This showcases how important socialization is in assisted living facilities. Noticing this can help assisted living facilities integrate socialization activities and other opportunities to socialize with residents and staff.

Limitations and Future Directions

While this measure is more comprehensive than current measures of potential reinforcers, it is possible that it may not encompass all potential reinforcers. However, the current study suggests that the reinforcer survey is expansive enough to give assisted living administrators and staff an idea of preferred activities.

Another limitation of the study is that the participants were gathered from both assisted living facilities as well as the community. Due to the Covid-19 pandemic, there was less access to residents of long-term care facilities. Therefore, the majority of data was collected via Prolific with community-dwelling older adults as opposed to those living in long-term care facilities. It was anticipated that community dwelling older adults would adequately represent individuals who lived in long-term care facilities; however, it is unknown if the results would be different if the sample were exclusively individuals residing in long-term care facilities. Nevertheless, it is recommended that a preference survey is used at intake and yearly to ensure that preferred activities and interests stay up to date.

Likewise, participants who have a diagnosis of a memory impairment were excluded from the study. This study aimed to meet the needs of the general assisted living population. However, since there is a high percentage of individuals who have memory concerns in these facilities, it is suggested that future studies look at how this survey could be adapted to meet the needs of all residents. Finally, the sample collected has a low amount of ethnicity. The results may not be representative to all individuals. Future studies should aim for a more diverse sample to ensure all individuals are represented.

One possible direction for future research could be the development of a method to assess potential reinforcers that enables more detailed data collection. Although Likert scales worked well for this project, it came with some drawbacks. A participant may have a difficult time assessing how rewarding they would find a situation or object. This would be especially difficult for someone with a memory impairment. Though this study did not include data from individuals with memory impairment diagnosis, future research may look at ways to assess potential reinforcers for those with memory impairments.

Implications for Practice

Facilities can utilize this survey and gather information regarding individual interest and which items are reinforcing to someone. This would give the facility and staff insight on personal interests allowing them to create activities and conversation around these interests.

The findings of this study can serve as a valuable resource for future researchers seeking to enhance the quality of life for residents in assisted living facilities. By examining the potential reinforcers, further research could explore the accessibility of these reinforcers at varying levels of assisted living. Additionally, this study opens the door on possible training opportunities on how to assess for reinforcers.

Future research may look at gender differences within the sample collected. Another study may also look at changes in response to the survey from intake to 1 year in an assisted living facility to assess if interests change. It is also recommended that this survey be given to individuals only located in assisted living facilities to ensure that the survey adequately represents this population while also trying to gather participants from more diverse backgrounds.

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Appendix A

Informed Consent for Participation in the Research

Title: The title of this research study is, “Validation of a Reinforcer Survey for Use with Institutionalized Older Adults.”

Investigators: This study is being conducted by Nicole Praska, a graduate student in clinical psychology, under the guidance of Dr. Jeffrey Buchanan and Dr. Daniel Houlihan in the Department of Psychology at Minnesota State University, Mankato.

Purpose: The purpose of this research study is to develop a survey to assess the types of activities that older adults find enjoyable.

Participants: Participants must be 65 years of age or older.

Procedure: You are being asked to complete a survey that asks you to rate how enjoyable you would find a variety of different activities. It is estimated that your participation will take about 30 minutes. The study will end when all the questions are answered, and you may close your browser.

Risks: The risks associated with this study are no more than experienced in normal daily life. You may choose not to answer any of the questions and you have the option to end your participation at any time. The researchers encourage you to use a secure location, and to participate in the study where you would have privacy where only you can view your survey.

Benefits: Results of the study will provide information about activities that can be made available to older adults residing in assisted living facilities or nursing homes.

Confidentiality: Confidentiality of the information gathered for this study will be protected in that your name will not be included on any records. All information collected during this study will be used for research purposes only and will only be accessible to the principal investigators, Dr. Jeffrey Buchanan and Dr. Daniel Houlihan, and the student investigator, Nicole Praska. If you would like more information about the specific privacy and anonymity risks posed by online surveys, please contact the Minnesota State University, Mankato IT Solutions Center (507-389-6654) and ask to speak to the Information Security Manager.

Right to Refuse or Withdraw: Participation in this study is voluntary. You may choose not to answer any of the survey questions or you may end your participation at any time by closing the web browser. Your decision whether or not to participate will not affect your relationship with Minnesota State University, Mankato and refusal to participate will involve no penalty or loss of benefits.

Questions: If you have any questions, you are free to ask them. If you have any additional

questions, you may contact the office of the principal investigator, Jeffrey Buchanan, Ph.D. at (507) 389-5824. If you have questions about participants' rights and for research-related injuries, please contact the Director of the Institutional Review Board at (507) 389-1242.

Closing Statement: Submitting the completed survey will indicate your informed consent to participate and indicate your assurance that you are at least 18 years of age. You may print a copy of this consent form for your records if you wish.

IRB #: 1878862

Appendix B

Initial Potential Reinforcer Survey

Do you consent to be a participant in this study?

yes

no

1, What is your current age? _____

1. In which state do you currently reside? _____

2. To which gender do you most identify?

Male

Female

Transgender Female

Transgender Male

Gender Variant/ Non-conforming

Not Listed _____

Prefer Not to Answer

4. Are you now married, widowed, divorced, separated or never married?

- Married
- Widowed
- Divorced
- Separated
- Never Married

5. What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school graduate (high school diploma or equivalent including GED)
- Some college but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)

6. What is your current living situation?

- Live alone in my own home (house, apartment, condo, trailer, etc.); may have a pet
- Live in a household with other people
- Live in a residential facility where meals and household help are routinely provided by paid staff (or could be if requested)
- Live in a facility such as a nursing home which provides meals and 24-hour nursing care
- Temporarily staying with a relative or friend
- Temporarily staying in a shelter or homeless
- Other _____

7. Have you ever lived in an assisted living or nursing home?

- Yes, I live in one currently
- No, I have never lived in one
- Yes, I have lived in one in the past, but no longer do

8. Do you have concerns with your memory?

- Yes
- No

9. Have you been diagnosed with memory impairment?

- Yes
- No

Instructions: We are interested in creating a comprehensive list of potential reinforcers that older adults residing in assisted living facilities might enjoy having access to.

Firstly, read through the questions and answer them as you see fit. These questions are in regards to potential reinforcers and how enjoyable they would be.

If a question does not directly relate to you, think of yourself in that situation and select the best choice.

Example: You do not use a wheelchair and the survey question refers to wheelchair usage. For this question you would imagine you use a wheelchair.

The following questions are family-related reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find it to visit your family in person?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find it to have a virtual or computer visit with family?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find it to participate in religious based activities with family (going to church/praying)?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find it to go to family events?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find it to go on a family outing to a destination (e.g., coffee shop, park, or museum)

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

The following questions are social reinforcers (not family related). Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find it to see friends in person?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find it to talk with a friend or past colleague on the phone?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find talking with other residents where you live?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find group exercise?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find having volunteer programs visit?

- not at all rewarding
 - mildly rewarding
 - neutral
 - moderately rewarding
 - extremely rewarding
-

The following questions are staff-specific reinforcers. If you do not reside in an assisted living or nursing home, imagine you do and answer the questions in that mindset. Indicate your choice by filling in or circling ONE of the answer options.

1. How rewarding would you find talking with your favorite staff/nurse?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find playing a game with your favorite staff/nurse?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find having your favorite staff help you get ready for the day?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find going on a walk with your favorite staff/nurse?

- not at all rewarding
 - mildly rewarding
 - neutral
 - moderately rewarding
 - extremely rewarding
-

The following questions are general social reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find someone giving you a complement?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find having someone listening to your problems or concerns?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find having someone play a musical instrument to you?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find getting a hug?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find being asked questions about yourself (e.g., your job, family, hobbies, achievements)?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

6. How rewarding would you find someone giving you a gift?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

7. How rewarding would you find interacting with someone from your own culture?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

The following questions are games, hobbies, leisure activities or general areas of interest reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find playing card games or board games?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find playing BINGO?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find going for a walk outside?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find decorating your living space for a holiday?

- not at all rewarding
- mildly rewarding
- neutral

moderately rewarding

extremely rewarding

5. How rewarding would you find taking a shower or bath?

not at all rewarding

mildly rewarding

neutral

moderately rewarding

extremely rewarding

6. How rewarding would you find music (any genre of your choice)?

not at all rewarding

mildly rewarding

neutral

moderately rewarding

extremely rewarding

7. How rewarding would you find crafts (knitting, needlepoint, making cards)?

not at all rewarding

mildly rewarding

neutral

moderately rewarding

extremely rewarding

8. How rewarding would you find reading books or magazines?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

9. How rewarding would you find watching TV?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

10. How rewarding would you find baking?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

11. How rewarding would you find getting "dressed up" with your hair/makeup done and putting on nicer clothes?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

The following questions are religious reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find praying?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find attending services or watching services on TV?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find having a religious figure such as a minister or priest visit?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

The following questions are pet/animal reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find petting a cat?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find petting a dog?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find watching birds?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find going to a zoo?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find visiting a petting zoo or farm?

- not at all rewarding
 - mildly rewarding
 - neutral
 - moderately rewarding
 - extremely rewarding
-

The following questions are consumables (food and beverage) reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find eating chips or crackers?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find eating sweets (candy, pie, cakes, pudding, ice cream)?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find eating takeout or fast food?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find drinking coffee or tea?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find drinking alcoholic beverages?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

6. How rewarding would you find drinking pop/soda?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

7. How rewarding would you find eating meat/grilled foods?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

8. How rewarding would you find eating religious/traditional food?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

The following questions are outing related reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find getting a haircut?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find going on a drive?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find going to a garage sale?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find going to the mall?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find going out to eat?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

6. How rewarding would you find going to a sporting event?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

7. How rewarding would you find going to a movie?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

8. How rewarding would you find going to a play?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

9. How rewarding would you find going to a concert?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

10. How rewarding would you find going to a park?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

11. How rewarding would you find going to a fair or festival?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

12. How rewarding would you find going to a casino?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

End of survey.

Appendix C

Revised Survey

The following questions are potential reinforcers. Indicate your choice by filling in or circling ONE of the answer options. Answer these as you see fit.

1. How rewarding would you find it to visit your family in person?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

2. How rewarding would you find it to participate in religious based activities with family (going to church/praying)?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

3. How rewarding would you find it to go to family events?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

4. How rewarding would you find it to go on a family outing to a destination (e.g., coffee shop, park, or museum)

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

5. How rewarding would you find it to see friends in person?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

6. How rewarding would you find talking with other residents where you live?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

7. How rewarding would you find group exercise?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

8. How rewarding would you find having volunteer programs visit?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

9. How rewarding would you find talking with your favorite staff/nurse?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

10. How rewarding would you find playing a game with your favorite staff/nurse?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

11. How rewarding would you find having your favorite staff help you get ready for the day?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

12. How rewarding would you find going on a walk with your favorite staff/nurse?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

13. How rewarding would you find someone giving you a complement?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

14. How rewarding would you find having someone listening to your problems or concerns?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

15. How rewarding would you find getting a hug?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

16. How rewarding would you find being asked questions about yourself (e.g., your job, family, hobbies, achievements)?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

17. How rewarding would you find interacting with someone from your own culture?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

18. How rewarding would you find praying?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

19. How rewarding would you find attending services or watching services on TV?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

20. How rewarding would you find having a religious figure such as a minister or priest visit?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

21. How rewarding would you find eating chips or crackers?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

22. How rewarding would you find eating sweets (candy, pie, cakes, pudding, ice cream)?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

23. How rewarding would you find eating takeout or fast food?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

24. How rewarding would you find going to the mall?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

25. How rewarding would you find going out to eat?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

26. How rewarding would you find going to a movie?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

27. How rewarding would you find going to a fair or festival?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

28. How rewarding would you find going to a casino?

- not at all rewarding
- mildly rewarding
- neutral
- moderately rewarding
- extremely rewarding

End of survey.