Choice, Degree of Preference, and Happiness Indices with Persons with Intellectual Disabilities: A Surprising Finding

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Abstract: Two persons with severe intellectual disabilities and two persons with profound intellectual disabilities were repeatedly presented with five different pairs of food items. The five pairs of items represented different degrees of preference, from highest to lowest. Happiness indices were monitored from the time that a pair of items was presented until a choice was made. Surprisingly, participants showed very few happiness indices throughout the study, and degree of preference had very little effect on frequency of happiness indices. Questions are raised regarding choice opportunities and indices of happiness as indicators of quality of life.

The degree to which individuals experience happiness is considered an important indicator of their quality of life (Felce & Perry, 1995). In an attempt to develop a valid measure of happiness for individuals with profound mental retardation, Green and Reid (1996) defined happiness as “any facial expression or vocalization typically considered to be an indicator of happiness among people without disabilities, including smiling, laughing, and yelling while smiling.” In a subsequent study Green, Gardner, and Reid (1997) demonstrated that presentation of preferred stimuli (based on prior preference assessments) were consistently accompanied by increased happiness indicators in three persons with profound mental retardation. Choice-making opportunities are also considered an important dimension of quality of life for persons with intellectual disabilities (Lindsey, 1996; Wehmeyer & Schwartz, 1998). Based on the findings of Green et al., we predicted that the provision of highly preferred food items would result in increased happiness in a choice situation with persons with severe and profound intellectual disabilities. We also explored the relationship between frequency of happiness indicators and the degree of preference for one alternative over a second alternative in a two-choice situation.

First, a preference assessment was conducted to rank order each participant’s preference for 12 food items. Next, five pairs of items, representing different degrees of preference, were selected for each participant and presented in a multi-element design. On each trial, happiness indicators were measured from the time that a pair of items was presented until a choice was made.

Method

Participants and Setting

Participants were individuals from the St. Amant Centre, a residential and community training facility for persons with intellectual disabilities. Participant 1 was a 34-year-old female diagnosed with profound intellectual disabilities. Participant 2 was a 31-year-old male diagnosed with severe intellectual disabilities. Participant 3 was a 45-year-old male diagnosed with severe intellectual disabilities. Participant 4 was a 37-year-old male diagnosed with profound intellectual disabilities. All par-
Participants had extremely limited communication ability. Participants were tested in an assessment room at the St. Amant Centre. During testing a participant sat across a table from the experimenter. An additional observer was present during most sessions to conduct reliability assessments.

Preference Assessment

Prior to choice-making assessments, a preference assessment was conducted with each participant using a protocol adapted from research by Mithaug and Hanawalt (1978). Edibles selected for inclusion in the preference assessment were based on: (a) recommendations from caregivers, (b) availability and ease of presentation, and (c) an attempt to include stimuli representing most and least preferred food items. The preference assessment contained 12 different edibles and consisted of 660 trials, which were presented within 20 sessions. Each edible was paired with every other edible 10 times, and participants were given the opportunity to choose one item from every pair. This assessment enabled us to rank order the edibles in terms of their preference level. This information was used to select six food items, namely, the items chosen approximately 95%, 90%, 65%, 35%, 10%, and 5% of the time. These items will be referred to as the highest, high, moderate 1, moderate 2, low, and lowest items respectively. These items were used to form five pairs that would represent five different degrees of preference of one item over another item for a participant. The highest-lowest pair included the food item chosen 95% of the time and the item chosen 5% of the time on the preference assessment. The highest-moderate 1 pair consisted of the item chosen 95% of the time and the item chosen 65% of the time. The highest-high pair consisted of the item chosen 95% of the time and the item chosen 90% of the time. The low-lowest pair consisted of the item chosen 10% of the time and the item chosen 5% of the time. The moderate 2-lowest pair consisted of the item chosen 35% of the time and the item chosen 5% of the time. These five pairs of food items were then presented in subsequent sessions, as described below.

Design

A multi-element design was used. The five pairs of items were presented in counterbalanced order within each session and happiness indicators were measured on each trial. Each session consisted of 20 trials (four trials for each pair of edibles) and 30 sessions were conducted.

Assessment of Choice and Happiness

A session began with the participant seated across a table from the experimenter. A session consisted of 20 trials and required approximately 25 min to complete. The participant was first prompted to sample each member of all five pairs in order to re-familiarize him or her with the food items. All five pairs of edibles were tested within a session, so that each pair of edibles was presented 4 times in one session. During each trial, the tester placed two edibles from one pair in front of a participant and said, “pick one.” The participant then had 10 s to make a choice. If no choice was made within the 10 s, the participant was verbally prompted again to, “pick one.” When an item was chosen, the participant was given praise (e.g., “thanks for picking,” or “good work”). The participant was allowed to consume the chosen item and the non-chosen item was removed.

During the first session, the order of presentation of the pairs was randomly determined with the provision that no pair be presented for more than two consecutive trials. That order was repeated in subsequent sessions. The right-left position of each pair of edibles was counterbalanced across trials.

Happiness was defined as any facial expres-

Figure 1. Total number of happiness indices across preference conditions. The highest-lowest condition consisted of food items chosen 95% and 5% on the preference assessment; the highest-moderate 1 condition, 95% and 65%; the highest-high condition, 95% and 90%; the low-lowest condition, 10% and 5%; and the moderate 2-lowest condition, 35% and 5%.
sion or vocalization that is typically considered an indication of happiness (i.e., smiling, laughing, clapping, Green & Reid, 1996). On every trial in a session, recording of happiness indicators began when the edibles were placed in front of the participant and continued until a choice was made or until 10 s elapsed. During an interval, the occurrence or non-occurrence of a happiness indicator was recorded regardless of the duration or frequency of happiness indicators.

Reliability

Percentage of sessions with reliability checks ranged from 40% to 63% across participants. Reliability observations were conducted by the experimenter and an observer who independently recorded choices made by a participant, and happiness indicators that occurred. Regarding happiness indicators, an agreement was recorded if the tester and the observer both recorded an instance of the same happiness indicator (e.g., both the tester and the observer recorded an instance of smiling) during a trial. Conversely, a disagreement was scored if either the experimenter or the observer recorded a happiness indicator as being exhibited and the other recorded that a different or no happiness indicator was exhibited. An interobserver agreement score was calculated by dividing the number of agreements by the number of agreements plus disagreements during that session, and multiplying by 100% (Martin & Pear, 2003). Agreement was 100% across participants for happiness indicators and ranged from 95% to 100% for choices.

In addition, procedural reliability was assessed using a procedural checklist (e.g., presentation of the correct stimulus pair at eye level, edibles in the correct position, examiner said, “pick one,” participant was given 10 s to respond, selected item was given, and the non-chosen item was removed). The experimenter and the observer independently recorded whether each trial was carried out correctly. A trial was defined as an agreement if the tester and the observer both recorded that all the procedural components were delivered correctly; otherwise, it was a disagreement. Procedural reliability agreement was calculated by dividing the number of agreements by the total number of trials (agreements plus disagreements) during that session and multiplying by 100% (Martin & Pear, 2003). Agreements ranged from 95% to 100%.

Results

Participant 3 failed to show any happiness indicators throughout the study. Three participants occasionally showed some happiness indicators such as smiling, laughing and clapping (see Figure 1). Participant 1 exhibited happiness in 22 of the 600 (3.7%) opportunities. Participant 2 exhibited happiness in eight of the 600 (1.3%) opportunities. Participant 4 exhibited happiness in 25 of the 600 (4.2%) opportunities. Happiness indicators were low, even with items with the highest degree of preference (see highest-lowest pairs in Figure 1), during which the most preferred item was chosen an average of 89% of the trials by participants (range of 82% to 96%). Moreover, stimulus pairs that included the most preferred item (i.e., highest-lowest, highest-moderate 1, and highest-high) did not consistently engender the most happiness indices relative to the stimulus pairs with the least preferred item (i.e., low-lowest and moderate 2-lowest pairs). Therefore, happiness indicators did not appear to be related to choice-making consistency nor with any specific stimulus pair.

Discussion

We had anticipated that the provision of a choice between a high-preferred food item and a low preferred food item would be correlated with observable happiness indicators. Surprisingly, that occurred neither in an absolute sense nor in comparison to the findings of Green et al. (1997). When the three participants in the study by Green et al. were presented with preferred items based on a preference test, observed happiness indices to the preferred stimuli averaged 79%, 57%, and 56% of the trials respectively. In the present study, on all trials involving the highest preferred food item, Participants 1 through 4 showed happiness indicators on 4%, 2%, 0%, and 4% of the trials respectively. The second finding was that degree of preference between the items on a trial had only a small effect on
frequency of happiness indicators. Participants averaged .03 happiness indicators per trial when presented with a choice between the highest and lowest preferred food items, and .02 happiness indicators per trial when presented with a choice between the low and the lowest preferred food items.

Another finding was that the participants showed slightly more happiness in a previous study (Yu et al., 2002) when presented with a leisure activity (i.e., watching television, listening to music, etc.) chosen by staff with no regard to the preference of the clients, than to the highly preferred food items in the present study. In the previous study, the same participants showed happiness indicators during the leisure activities during 5.1%, 5.2%, 5.3%, and 4.8% of the observed intervals respectively (compared to 4%, 2%, 0%, and 4% in the current study).

Why did the participants in the Green et al. (1997) study show much more happiness than participants in this study? One reason may be that the Green et al. study involved mostly leisure activities and sensory stimulation whereas this study involved edibles. A second possibility is that Green et al. measured happiness when participants were given preferred stimuli whereas this study measured happiness when choices of stimuli were presented. Finally, it is possible that the observation interval in the present study was too brief. Green et al. used 10 s observation intervals, while observation intervals in the current study averaged approximately 5 s because participants generally made a choice quickly following presentation of the stimuli.

The present study suggests that additional research is needed to determine how happiness indices are related to the provision of choices. For example, under what conditions is the provision of choice opportunities reliably correlated with occurrence of happiness indicators? Is the occurrence of happiness indicators at the time that a choice is presented correlated with the occurrence of happiness indicators at a later time when only the preferred item is presented? Are some types of preferred stimuli (e.g., leisure activities) more highly correlated with happiness indicators than other types of preferred stimuli (e.g., food items)?

References

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