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## CHOICE IS A FUNCTION OF ABILITY AND OPPORTUNITY

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### ABSTRACT

Residential setting, adaptive behavior, and a variety of demographic variables were used in an effort to predict scores on an instrument quantifying the exercise of choice. The sample consisted of 141 individuals with intellectual disability who lived in community group homes and 462 individuals with intellectual disability who lived on a campus based program. High adaptive behavior scores and living in a community based setting were predictive of higher exercise of choice. It was suggested that both ability and opportunity were necessary for optimal choice making, and that ability was the primary predictor.

Choice making was assessed among 618 individuals who had intellectual disability. 142 lived in community group homes, while the remaining 462 lived in a campus based program. Multiple regression was used to attempt to predict choice making based on where the individual lived (community versus campus) and scores on the Behavior Development Survey. Stepwise linear regression revealed that the largest predictor of choice was ability, as measured by the Behavior Development Survey, but that the prediction of choice making was maximized by inclusion of whether the individual lived in the community or on a campus.

People with intellectual disability have every right to participate in an integrated community life to the extent possible and to the extent that is consistent with their wishes. This exercise of personal choice is the lynchpin of the disability rights movement, and it is the basis for person centered planning. Choice is recognized as a central component of the United States Developmental Disabilities Assistance and Bill of Rights Act of 2000 . Each individual has the absolute right to direct his/her life to the extent possible. For this reason, person centered planning begins with the individual. The individual, with help as needed from a support team, should direct the services and supports that will be needed to achieve personalized goals. Obviously, the ability to make and communicate these choices about goals and supports/services is essential to the success of person centered planning.

Choice is a relatively broad construct. O'Donovan, Byrne, McCallion, & Carron (2017) used factor analysis to delineate two broad types of choice – everyday decision and key life decisions. These distinctions appeared in the literature predating the factor analysis work. While one might argue that key life decisions constitute the real test of one's ability to make and implement choices, most of our choices would seem to fall in the everyday type of decision making.

Environmental contexts have been explored for their relationship to choice making opportunities. Early research by Burchard, Hasazi, Gordon, & Yoe (1991) reported greater opportunities to exercise choice in small community based homes. Stancliffe (2000) reported that greater choice making opportunities existed in supported living situations than in ICF/MR programs. Similarly, Lakin, Doljanac, Byun, Stancliffe, Taub, & Chiri (2008) found greater levels of choice for individuals living in their own homes, even after controlling for level of intellectual disability, medical needs, behavioral needs, and autism. In a longitudinal study, Wehmeyer and Bolding (2001) reported increased self-determination subsequent to a move from a restrictive work or residential setting to community based options. More recent research by Ticha, Lakin, Larson, Stancliffe, Taub, Engler, Bersadsky, & Mosely (2012) analyzed choice making data collected via the National Core Indicators project. Analyzing data collected across 19 states and involving almost 9000 individuals who have intellectual disability, they reported that people living in larger settings had less choice opportunities than persons living in smaller settings, even after statistically controlling for age, behavioral supports, communication, and physical/sensory impairments. Kahlin, Kjellberg, & Hagberg (2016) were led to conclude that the level of choice and control is influenced by the physical, social, and cultural environments within group homes. The common theme across these studies is that greater opportunities for choice appear to be evident in smaller, community based settings.

In addition to the environmental context referenced above, basic abilities have been found to be associated with choice making opportunities. Greater choice opportunities have been reported for individuals with less degrees of intellectual disability and/or higher levels of adaptive behavior (Heller, et al, 1999; Lakin et al, 2008; Stancliffe, 1997; Stancliffe, Abery, & Smith, 2000; Smith, Morgan, & Davidson, 2009, and Stancliffe, Lakin, Larson, Engler, Taub, & Fortune 2011). Department studies have yielded conflicting results. Stancliffe, Abery, & Smith (2000) reported fewer choice opportunities for individual who had more serious forms of behavioral challenges, however, this correlation was not supported by contemporaneous work by Emerson et al (2000). Lakin et al (2008) did find an association between choice and behavior, but this association became statistically insignificant after factoring in other variables.,

The literature suggests that both individual ability and the environment in which one lives can impact on one's opportunity to make and implement choices. Rather than attempting to statistically neutralize the impact of any one factor, it is perhaps more instructive to simultaneously analyze the key dimensions of ability and environment, along with a number of apparently lesser determinants of choice making. The purpose of this study was to attempt to identify predictors of choice making. This will be done by correlating predictor variables with a measure of choice.

## **Methods**

### **Instrument**

Choice Scale - The Choice scale consists of nine items similar to those in the National Core Indicators (REFERENCE) project but adapted to the programs that participated in this study. The nine items address choice regarding what to eat, what to do in free time, what to wear, when to shower, when to go to bed, when to awaken on weekends, when to go outside, and when to go shopping. A ninth variable, ease of access to money, while not technically a choice item, enhanced the reliability of the scale and was thus retained. Summing the scores on the nine items

yields a metric with higher scores suggesting greater exercise of choice. Cronbach's alpha on this scale was determined to be .822.

Predictors - The choice items were incorporated into an annual program evaluation tool used by the agencies. In addition to assessing choice, the evaluation tool quantified goal attainment, adaptive behavior levels, challenging behavior levels, and a variety of demographic information. Of particular interest for this study was the Current Abilities Scale (Conroy, 1998), which is a 128 point measure of adaptive derived from the AAMD Adaptive Behavior Scale. It provided the measure of an ability factor that could be used as a predictor. Devlin (1989) reported inter-rater reliability of this scale to be .91. Because 141 of the study participants lived in community based homes and 462 lived in campus based settings, we were able to create a predictor variable of whether the individual lived in the community or on the campus. This latter dimension was employed as the environmental predictor of choice making. Other predictors were demographic in nature and collected from case managers working with the individuals. These additional predictors were age, years in residence, presence of an Axis I diagnosis, and gender.

### Study Participants

Participants for this study were drawn from a group home program supporting adults with intellectual disability in SE Pennsylvania, a campus based treatment program for adolescents with intellectual disability/autism concomitant with severe behavior problems, and a campus based residential program for individuals with intellectual disability.

There were 604 participants in this study. There were 141 individuals living in community homes and 462 living in campus based homes. There were 418 males and 185 females. The average age was 32.01 years (median was 24.9 – impact of group of elderly individuals). Approximately 42% (n=251) had diagnoses of autism/PDD, and slightly over 65% (n=394) had Axis I mental health diagnoses. A breakdown by level of intellectual disability revealed the following percentages: without intellectual disability – 9.9%; mild intellectual disability – 26.9%; moderate intellectual disability – 28.3%; severe intellectual disability – 18.6%; and profound intellectual disability – 16.2%.

Because residential placement in the community or on a campus was used as a predictor variable, the above demographic descriptors were compared across the two residential categories. It is noteworthy that the community portion of the sample differed from the campus based portion of the sample on every compared descriptor variable. With regard to metric variables, the community portion of the sample was older, had higher adaptive behavior scores, were in residence longer, and had higher Choice scores than their campus based counterparts. With regard to the categorical variables, the community portion of the sample contained more males, evidenced lesser degrees of intellectual disability, had fewer individuals with Axis I diagnoses, and had fewer individuals with diagnoses of autism/PDD.

	Community	Campus	Findings
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Mean Age	43/8 (SD=15.7)	28.5 (SD=15.6)	F(1,590)=100.1, p<.001
Adaptive Behavior	88.4 (SD=31.6)	66.2 (SD=33.9)	F(1,599)=47.2, p<.001
Admit Year	1996.9 (SD=15.6)	2003.1 (SD=15.6)	F(1,586)=16.5, p<.001
Gender	55% Male	67% Male	ChiSquare (1)=5.0, p=.025
Autism/PDD	24%	67%	ChiSquare(1)=22.3, p<.001
Axis I diagnosis	50%	70%	ChiSquare(1)=19.1, p<.001
Level ID			ChiSquare(4)=35.3, p<.001
Without ID	14	41	
Mild	59	90	
Moderate	41	116	
Severe	14	89	
Profound	9	81	

## Results

Initially, data were treated as a single data set, without regard to the source of the data. The following variables were submitted to stepwise multiple regression in an effort to predict the summed score of the nine choice items : age, gender, adaptive behavior sum score, presence/absence of Axis I ( mental health) diagnosis, and whether the individual's program was in the community or on a campus. A linear combination of adaptive behavior sum score, community vs. campus, age, and presence of an Axis I diagnosis yielded a statistically significant equation for the prediction of choice ( $F[4,570]=89.944, p<.001$ ). The equation was associated with a Multiple R of .622, and an R squared value of .387.

Adaptive behavior sum score was the single largest predictor, explaining 74.4% of the explainable variance. Whether the program was housed in the community or on the campus entered second, contributing an additional 22.2% of the explainable variance. Entering third and fourth were age and presence of an Axis I diagnosis, respectively explaining 2.6 and 0.2 percent of the explainable variance. Note that in a stepwise regression, the greatest predictor of variance enters first, followed sequentially by the lesser predictors. Multicollinearity, or excessive intercorrelation of predictor variables, was not problematic in this analysis. In order of importance, the study revealed that greater exercise of choice was evident for persons with higher adaptive behavior scores, who lived in the community, who did not have an axis I diagnosis, and who were older.

The jackknifing technique described by Eyman, Meyers, and Bendel (1973) was used to cross validate the results obtained from the 16 item analysis. The total sample was divided into four smaller cohorts of 430, 432, 434, and 429 (variation due to missing data), and each cohort was held out in turn while the multiple regression analysis was performed on the group comprised of the remaining three cohorts. Pseudo values were calculated for each analysis using the procedure described by Kier (1997). The resultant four pseudo-values for Multiple R were .616, .626, .640, and .598. These four values were averaged using Fishers Z-score transformation, and a jackknifed Multiple R estimate of .621 was obtained. This less biased estimated compared favorably with the Multiple R value of .622 from the original analysis, and it suggests that sample specific variance did not unduly inflate the results of the original analysis.

To further explore the role of residential placement in the exercise of choice, choice data comparing individuals in the community with individuals living on a campus were submitted to analysis of

covariance, using the Current Abilities Scale score as the covariate. This analysis revealed greater levels of choice in community settings, even after the adjustment for abilities ( $F[1,583] = 80.555, p < .001$ ). Persons living in the community obtained an adjusted mean score of 7.172 (standard error = 1.91) of a possible 9 points, while persons living in campus settings obtained an adjusted mean score of 5.203 (standard error = .102) as noted above, more opportunity to exercise choice was evident in the community based homes.

## Discussion

The data suggest that the exercise of choice is largely a joint function of ability and environmental opportunity, with ability serving as a necessary precursor to the exercise of choice. Adaptive behavior skills, having the greatest correlation with choice, was the primary predictor of the exercise of choice, and perhaps this is reasonable because adaptive behavior seems to set the minimum criteria for the ability to exercise choice. Residence seems to be the opportunistic variable. It entered the prediction equation second because it explained the greatest portion of variance after the variance associated with adaptive behavior was removed. Its inclusion significantly enhanced the ability to predict choice. It would appear that the optimal exercise of choice is evidenced by the individual who has the adaptive/cognitive ability to make and exercise choices, and who lives in a community based residential setting that affords greater opportunities to exercise choice.

It should be noted that the campus based programs in this study rely on a commissary to prepare food according to a menu established six weeks in advance, whereas the community homes can elect to change the menu on a moment's notice. Individuals in campus programs were also affected by health issues necessitating medication delivery early (like 8AM) every day, including weekends. The differing structure in the two living environments contributes to the differentiation on the exercise of choice. It is likely that an individual with relatively high level of adaptive behavior skills would be able to exercise greater levels of choice in the community setting than in the campus setting, but it is clear that a basic level of adaptive skills is necessary to exercise choice in either setting. The data suggest that choice opportunities are greater in community settings, even after adjusting for adaptive behavior levels.

It is noted that both age and the presence of an Axis I (mental health) diagnosis were retained in the original prediction equation, but their contributions, while statistically significant, are relatively small. In our jackknife procedure, the presence of an Axis I diagnosis was dropped from three of the four analyses, and age was dropped from one analysis. Their contributions are minimal and probably not very reliable.

That adaptive behavior skills were the primary predictor of the exercise of choice does suggest some sort of floor effect. That is, an individual must have sufficient skills to be able to make and communicate choices. Not all individuals who have intellectual disability have the abilities to make and communicate their choices. While this statement should not be taken as an effort to impose a limit on potential, it clearly suggests that skills take precedence over environmental opportunity. It is evident that the ability to make and communicate choices varies widely across the spectrum that is intellectual disability. The condition spans an extremely wide range of cognitive abilities, and based on the properties of the normal distribution, it is evident that most persons who have intellectual disability have milder forms of the condition. One must, however, consider the relatively small

percentage of individuals with more severe forms of intellectual disability. These individuals, often as a result of genetic anomalies, may lack the ability to communicate wants and needs in an effective manner, regardless of where they might live. This subgroup of individuals with diminished adaptive behavior capacity need the protection of a person centered individual plan that recognizes their uniqueness.

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