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Predictors of Independence for Adults with Intellectual Disability

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Honors Thesis:

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Abstract

As the life expectancy for adults has increased, the number of individuals with intellectual disabilities (ID) entering adulthood has increased, which brings up the question of how to evaluate and provide the care needed for these individuals. An important aspect of adulthood in individuals with ID is independence. Research links independence (specifically living environment and employment) and self-determination to a higher QOL. The purpose of the current study was to examine predictors of independent living and employment for adults with ID. Client records were obtained from an organization for adults with ID. Data retrieved included demographic information, IQ score, living arrangements, employment status, and a standardized assessment of adaptive and maladaptive behavior (Inventory for Client and Agency Planning). Out of approximately 40 clients at the organization, 21 of these participants had at least one ICAP assessment and were included in analyses. Two direct logistic regressions were conducted to assess how well IQ and adaptive and maladaptive behaviors predicted independent living and employment. The logistic regressions revealed adaptive and maladaptive behavior predicted independent living, but only adaptive behavior predicted employment. IQ scores were not predictive of either measure of independence. Implications and limitations of the current study, as well as directions for future studies, are discussed.

Honors Thesis: Predictors of Independence for Adults with Intellectual Disability

Over the years as medicine has advanced, the lifespan of humans has continued to develop, which has led to an increase in the number of adults with intellectual disabilities (ID) that require full-time support and care. The question of how to evaluate the care needed for these individuals has become an important issue in today's society. Clinicians and organizations have begun to adopt the Quality of Life (QOL) model as a way of evaluating the needs and lifestyles of adults with ID (Simões & Santos, 2016). The current study aims to expand the research on the QOL by examining individual predictors of QOL.

Intellectual disability is a difficult term to define. Some define an ID as a developmental disorder that begins in childhood and affects an individual's ability to reason, learn, and/or function in life. Others define traumatic brain injuries that affect cognition as an ID. The way ID is defined depends on how one's culture and society view it. In the U.S., ID is currently defined based on the criteria of the DSM-V. The DSM-V explains that the characteristics of an ID are defined by significant limitations in general mental abilities, such as learning, problem solving, and judgment. These cognitive limitations then diminish adaptive functioning such that the individual fails to meet standards of personal independence and social responsibilities in one or more aspects of daily life, including communication skills, social skills, academic or occupational functioning, and personal independence in all settings, such as home or community. The onset of this disorder appears during the developmental period (American Psychiatric Association, 2013).

Intellectual disabilities have been around since ancient times, though it was not until the late-1900s that the treatment of individuals with ID shifted from institutionalization to deinstitutionalization with the goal of allowing individuals with ID to integrate into society

(Landesman & Butterfield, 1987). Deinstitutionalization is defined as three inter-related processes: (1) prevention of admission into institutions by researching and developing alternative community methods of treatment and education; (2) return of all residents who have been prepared to adequately function in community settings through rehabilitation into the community; and (3) establishment and maintenance of a responsive residential environment which protects human rights and contributes to the return of the individual into normal community living whenever possible (National Association of Superintendents of Public Residential Facilities for the Mentally Retarded, 1974). Normalization is the idea that as an individual's access to culturally normed activities and environments increases, and then so does their quality of life (Landesman & Butterfield, 1987).

A big controversy that exists when debating deinstitutionalization and normalization is figuring out the extent that the environment affects individuals with ID. Advocates of deinstitutionalization and normalization do not deny that community integration has its risks and admit it has many complex questions regarding the promotion of true social integration, but they believe the risks are justified and that community integration enhances individuals with ID's QOL while safeguarding human rights. Antagonists argue that the needs of individuals with ID to have a positive, supportive environment are many and that these individuals need to undergo extensive training and receive health support systems before community integration. Both advocates and antagonists agree that non-restrictive community integration is an important goal for the majority of individuals with ID. When examining the goals of deinstitutionalization and normalization, very few would argue against it. However, the implications of treatments to achieve these goals are where the controversy lies (Landesman & Butterfield, 1987).

The promotion of normalization and deinstitutionalization in the treatment of individuals with ID helped change the way that the world identifies these individuals. The deinstitutionalization movement started the discussion that allowed the shift from labeling these individuals as mentally retarded to diagnosing them as having an intellectual disability (Schalock et al., 2007). Prior to the deinstitutionalization movement, individuals with ID were viewed as feebleminded adults that could not be a functioning and contributing member of society (Berkson, 2004). The transition from labeling individuals with below average intellectual functioning to the diagnosis of an intellectual disability has allowed individuals with ID to begin to be included as functioning members of society through community integration (Schalock et al., 2007). Deinstitutionalization research has identified that living environment and support arrangements affect lifestyle, contentment, and achievement of positive outcomes in individuals with ID, with better outcomes observed in community-based living environments (Emerson & Hatton, 1996; Larson & Lakin, 1989; Young et al., 1998). While community-based living environments are more beneficial to individuals with ID than being institutionalized, the type of community-based living environment can affect the services and outcomes of these individuals.

Prior to the deinstitutionalization movement there was only one type of living environment, which was psychiatric hospitals, or restrictive residential facilities, (Mansell & Ericsson, 1996). The deinstitutionalization movement has led to the establishment of many different residential and community-based facilities. The type of residence that individuals with ID reside in typically falls in one of two categories: residential facility or community-based setting. Residential facilities (i.e. institutions) are typically characterized by large sizes, separation from the community, and restrictive environments. Community-based settings encompass a wide range of living environments, including small and medium-sized group

homes, supported living, independent living, and family-based living. Group homes range from small to large sizes, as well as levels of restrictiveness and amount of community interaction.

Reviews of the literature examining residential facilities versus community-based settings consistently show favoring of community-based settings regarding more positive outcomes in individuals with ID. However, the types of community-based settings vary drastically, making it difficult for researchers to know whether one type of community-based setting is superior, or whether all community-based settings provide the same outcomes (Kozma et al., 2009). The two most mentioned community-based living environments in the literature are group homes and semi-independent living (living with supportive living staff), which suggests that there is an emphasis on examining the variations among individuals with ID who live in group homes compared to individuals with ID who live in a semi-independent residence.

Previous research examining the difference in the outcomes for individuals living in group homes versus semi-independent living support greater outcomes for those living semi-independently in numerous domains, including QOL (Burchard et al., 1991; Schalock et al., 1989), self-esteem and job satisfaction (Griffin et al., 1996), participation in preferred activities (Howe et al., 1998), choice-making (Stancliffe & Keane, 1999), and self-determination (Wehmeyer & Bolding, 1999). When evaluating the different types of community-based living environments, such as comparing group homes and semi-independent living, researchers must consider many different aspects, such as size of the facility. The size of the residential center, group home, or semi-independent apartment, which means the number of residents living there, is an important aspect of community living environments (Kozma et al., 2009). Smaller community-based settings have been found to offer more opportunities for individuals with ID to engage in the community, leading to a stronger integration into the community, as well as a

higher QOL (Ager et al., 2001; Chou et al., 2008). This increase in outcomes was found when small community-based settings were compared to medium sized group homes and large residential facilities (Chou et al., 2008). These findings suggest that greater outcomes for individuals with ID may not necessarily depend on the type of living environment, but rather the size of the living environment. Adults with ID that reside in supportive-living environments typically live with fewer people than adults with ID that reside in group homes, which could account for the variability in outcomes seen between these different community-based settings.

The type of environment that individuals with ID live and work in can significantly impact their QOL (Simões & Santos, 2016). QOL has a range of definitions, but Schalock and Verdugo's (2002) model has generally been the model adopted in the field of ID. In terms of this model, QOL includes both objective and subjective indicators, and contains universal and culture-directed properties (Schalock et al., 2002). QOL is a broad concept that includes individuals' perceptions of their physical and psychological wellbeing, level of independence, relationships with others, personal beliefs, and interactions with their environments (Skevington et al., 2004). The aforementioned model of QOL includes various factors, domains, and culturally driven domain indicators that are observed in the daily lives of individuals (Buntinx & Schalock, 2010). The indicators of QOL include perceptions, behaviors, and circumstances that provide the basis for operational definitions of each domain (Verdugo et al., 2005). The operational definitions of each domain provide the evaluation and improvement of QOL related to personal outcomes among individuals (Schalock et al., 2007). The eight domains included in the QOL model are: (1) Personal development, (2) Self-determination, (3) Interpersonal relations, (4) Social inclusion, (5) Right, (6) Emotional wellbeing, (7) Physical wellbeing, and (8) Material wellbeing (Simões & Santos, 2016). Researchers have adopted QOL as a measure to

help evaluate the lifestyles of individuals with ID. The QOL model extends to cover the main areas of life functions (Schippers, 2010).

Simões and Santos (2016) conducted a study that examined predictors of QOL in adults with and without ID. The purpose of the study was to identify differences in individual and environmental predictors among individuals with ID and the general population with an emphasis on incorporating the QOL concept for all citizens. The researchers found higher QOL scores among the general population, which suggests that the QOL in individuals with ID is an area that needs improvement. The differences in levels of QOL between the general population and individuals with ID may be due to the way that individuals with ID are viewed as clients rather than citizens, which could be one of the factors that affects the community integration and living environments for these individuals. The results did not reveal a significant difference between the general population and individuals with ID in the emotional and physical wellbeing domains, which supports the idea that the lower QOL found in individuals with ID could have more to do with their social interactions and environments than their psychological and physical wellbeing. Two of the strongest predictors of QOL in individuals with ID found in the study were living situation and employment. These findings contribute to the current study and its importance of attempting to further understand predictors of QOL.

While living situation and employment have been shown to be strong predictors of QOL (Simões & Santos, 2016), QOL has also been shown to positively correlate with adaptive behavior scores (Simões et al., 2016), where greater adaptive behaviors correlate with a higher QOL. Adaptive behavior scores have proven to be essential in the field of intellectual disabilities. Adaptive behavior is an essential part of personal competency that is defined throughout the literature as the conceptual, social, and practical skills that individuals have learned and

successfully incorporate into their daily lives (Tassé et al., 2012). Adaptive behaviors are the skills demanded of individuals to function in everyday life. One of the main reasons adaptive behavior scores have been such an important part of ID research is because of the relationship between support needs and adaptive behaviors (Simões et al., 2016). Individuals with greater adaptive skills tend to have less support needs, and those with fewer adaptive skills tend to require more support needs (Thompson et al., 2009).

Given the influence adaptive behaviors have on personal competence, it is not surprising that levels of adaptive skills have been linked to varying levels of independence in individuals. This relationship between adaptive behaviors and levels of independence is a big factor in why researchers have explored the relationship between adaptive behaviors and QOL (Simões et al., 2016). Independence is one of the domains evaluated in QOL, so it makes sense that influences of personal competence would be examined in relation to QOL. Previous studies have shown that individuals with lower scores on a range of measurements of personal competence have been found to have lower QOL scores (Nota et al., 2007; Rey et al., 2013). Personal competence measurements include adaptive behaviors, emotional competence, and IQ.

IQ has long been thought of as indicator of one's ability to maintain employment and live independently (Nota et al., 2007). Research has shown that higher IQ scores correlate with higher self-determination and higher QOL (Nota et al., 2007), as well as provide support that IQ does not predict self-determination and QOL (Wehmeyer & Garner, 2003). The discrepancies between IQ and whether it is predictive of QOL calls to question how much value society places on intelligence. Intelligence may not be predictive of living situation, employment, QOL, etcetera, but rather environment and other individual characteristics may be more predictive of QOL in adults with ID (Simões & Santos, 2016).

Simões et al. (2016) conducted a study to further examine the understanding of the relationships between support needs, adaptive behaviors, and QOL. The results supported a negative relationship between support needs and adaptive behaviors, which is important because support needs determine the services required by individuals with ID. Individuals with higher levels of adaptive skills were not only found to have less support needs, but also have higher scores of QOL. A possible explanation for lower adaptive skills and more support needs being related to lower scores of QOL is because individuals that require more support needs typically have less independence and opportunities to interact with peers and their environment. Adaptive behavior scores were found to be a stronger predictor of personal outcomes than support needs scores, suggesting that levels of adaptive skills may be significant predictors of independence. These findings contribute to the current study and its focus on adaptive behaviors as a possible predictor of independence.

Another important consideration that is consistently measured with adaptive behaviors is maladaptive behaviors, also known as challenging behaviors. Challenging behaviors are more consistently found in literature on social skills in individuals with ID compared to literature on QOL in individuals with ID. However, maladaptive behaviors have been included in some QOL research as well. Consistent with adaptive and maladaptive behavior scores being negatively correlated, maladaptive behavior scores are, also, negatively correlated with QOL (Allen, 2008), meaning greater maladaptive behavior scores correlate with a lower QOL. Maladaptive behaviors are defined as unusual or unacceptable behaviors in comparison to cultural norms. Maladaptive behaviors include behaviors, such as aggressive or self-harm behaviors, that call into question the safety of the individual and others or are likely to cause exclusion of the individual from the community (Emerson & Hatton, 1994). With the emphasis of community

integration as an important goal for individuals with ID, it makes sense that researchers have begun to examine maladaptive behaviors in relation to QOL.

The relationship between adaptive and maladaptive behaviors have been important measurements used by agencies and organizations to evaluate support needs of individuals with ID (Stancliffe & Keane, 2000). While both adaptive and maladaptive behaviors have been shown to be determinants of QOL, they have differing effects on the levels of independence in individuals with ID (Kozma et al., 2009). Maladaptive behaviors have been shown to not vary much across different living environments (Hundert et al., 2003). A rationale for the lack of variation in maladaptive behaviors may be due more to lack of attention from staff and peers than living environment (Kozma et al., 2009). Despite the difference in levels of maladaptive behaviors across living environments, maladaptive behaviors have been found to decrease in community-settings compared to residential facilities (Young, 2006), supporting the belief that community-settings lead to more positive personal outcomes, such as fewer challenging behaviors, for individuals with ID.

The majority of studies have focused on the level of adaptive skills and cognitive functioning as major influences of QOL, but environmental factors, such as the level of personalization in living environments, opportunities for social interactions and inclusion in social activities, and the amount of attention received from the staff, have been found to be important influences on QOL (Felce & Perry, 2007). These environmental factors are influenced by maladaptive behaviors because individuals with more challenging behaviors are less likely to be included in the community and have been found to have lower activity levels (Totsika, 2010). While no study has directly examined whether maladaptive behaviors are predictive of independence, such as independent living and employment, results from previous studies suggest

that higher levels of maladaptive behaviors may be predictive of less independent living environment and no employment. The current study aims to address this issue of examining whether maladaptive behaviors are predictive of independent living and employment.

While the deinstitutionalization movement has led to an increase in research on types of living environments and QOL, the literature does not include too many studies on the employment of individuals with ID. Employment has been found to be a significant predictor of QOL in individuals with ID (Simões & Santos, 2016), but not much research has been done to examine the relationship of employment and other predictors of QOL. Current research suggests that adaptive behaviors may be predictive of employment (Woolf et al., 2010), where higher levels of adaptive behaviors predicted employment and independent living. Other studies support this positive relationship between adaptive behaviors and employment (Stephens et al., 2005). Individuals with ID with higher levels of maladaptive behaviors were less likely to gain employment, as well as maintain employment, due to the obstacles that more challenging behaviors present (McConkey & Mezza, 2001).

With the significance of adaptive and maladaptive behaviors in individuals with ID, the current study aims to examine possible indicators of independent living and employment in adults with ID. An individual's ability to live independently and maintain employment is a crucial part of an adult in society life (Simões & Santos, 2016). It is predicted that examining predictors of independent living and employment will help institutions and organizations identify problem areas and develop more individualized care that lead to a better community integration of individuals with ID. The current study aims to examine whether IQ and adaptive and maladaptive behaviors are predictive of two significant predictors of QOL: living situation and employment. The researchers hypothesize that all three independent variables (adaptive and

maladaptive behaviors and IQ) will be predictors of both independent living and employment in adults with ID.

Methods

Participants

Participants were recruited from clients from an organization for adults with ID that provides supportive living assistance, case management, adult day programs, and/or employment. Out of approximately 50 clients at the organization, a total of 26 clients granted researchers access to their files. Twenty-one of these participants had the necessary assessments for the current analyses on file and were included in the study. The twenty-one participants included in the study were case-management clients, which means clients who have a Medicaid waiver, at the organization (Male = 12, Female = 9; Mean Age = 50.21, SD = 13.84, Range = 20.17 – 78.17). A Medicaid waiver provides services for individuals with ID that allow for provisions of home and community-based services, such as supported living, day services, behavior supports, supported employment, and job discovery, as an alternative to residential facilities (Mississippi Division of Medicaid, 2016).

Measures

Adaptive Behavior Scores. Adaptive scores were recorded from the Inventory for Client and Agency Planning (ICAP). Broad independence scores were used as an index of adaptive behavior. Broad independence scores range from 270 to 569, with higher scores associated with higher level of adaptive behaviors. The broad independence score is a composite scale score for each of the four subtypes of adaptive behavior. Adaptive behavior is divided into four subtypes: Motor Skills (18 items), Social and Communication Skills (19 items), Personal Living Skills (21 items), and Community Living Skills (19 items). Bruininks et al. (1986) explained that the ICAP

has quality psychometric characteristics. Split-half reliabilities for Broad Independence were .97,

or .98, for each level of ID, test-retest reliability was .91, and interrater reliability was .94

(Bruininks et al., 1986). Criterion-related validity was found through comparisons of ICAP to

Scales of Independent Behaviour (Bruininks et al., 1984) and the Adaptive Behaviour Score,

Second Edition (Lambert, 1981).

Maladaptive Behavior Scores. Maladaptive behavior scores were recorded from the

ICAP, as well. The General Maladaptive Index (GMI) was used to measure maladaptive

behaviors. Maladaptive behaviors are examined along three subtypes: Self-

injury/Stereotyped/Withdrawn, Offensive/Uncooperative, Disruptive/Destructive/Hurts others.

The subtypes are rated on the frequency and severity of each problem behavior. The GMI is an

overall maladaptive behavior score that is a composite score of the three subtypes. The GMI has

a mean of 0 with a standard deviation of 10, where the mean corresponds to the average level of

problem behaviors in the general population at any given age. The more problem behaviors

present, the more negative the GMI. Bruininks et al. (1986) explained that the GMI's test-retest

reliability was .85 and interrater reliability was .80. Criterion-related validity was found through

comparison of ICAP GMI with the Quay-Peterson Revised Problem Behaviour Checklist (Quay

& Peterson, 1983).

IQ Scores. IQ scores were recorded from the participant's most recent psychological

evaluation on file. Most of the IQ scores were recorded using the Wechsler Abbreviated Scale of

Intelligence (WASI), while the other IQ scores were recorded using the Stanford-Binet (SB).

Full scale IQ scores were used for the IQ scores in the current study. Significant correlations

between WASI and SB have been found and support strong validity between the two tests

(Carvajal et al., 1993). The Psychological Cooperation (1999) released the WASI, which is a test

examined along four subtests (two verbal and two performance) that are shown to correlate

strongly with general intellectual functioning. Full scale IQ scores are composite scores of the

four subtests. Criterion-related validity was found through comparison of Wechsler Adult

Intelligence Scale-Third Edition (Wechsler, 1997). The SB is examined along five subtests (fluid

reasoning, knowledge, quantitative reasoning, visual-spatial processing, and working memory)

that are shown to correlate strongly with general intellectual functioning. Full scale IQ scores are

composite scores of the five subtests. Criterion-validity was found through comparison of Form

L-M design II.A.1 (Angoff, 1984).

Employment Status and Living Status. Employment status and living status were recorded

using the participant's 2016 Quarterly reports. Every three months, the case-manager, supervisor,

employment/program supervisor, and residential director meet to discuss the changes in the

client and events experienced by the client during that quarter. The current living situation, as

well as the current employment/program conditions, of each client are discussed and updated in

the report. The researcher recorded the overall living situation and employment/program

documented across the Quarterly reports, which allowed for an accurate living situation and

employment/program to be measured for each participant.

Procedures

Researchers obtained consent to gather data from clients' files at the organization through

the assistance of the supervisors at the organization. Clients that were their own guardian signed

the consent form themselves. Clients that are not their own guardian had consent provided by

their legal guardian. Researchers had no direct contact with participants. Data from the clients'

files were gathered and recorded anonymously. Data collected included demographic

information, IQ score, living arrangements, age of admission, type of programming, employment

status, and a standardized assessment of adaptive and maladaptive behavior (i.e., the Inventory

for Client and Agency Planning).

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Results

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Preliminary Results

In the preliminary analyses, the researcher tested to make sure all the assumptions for a

logistic regression, appropriate sample size regarding predictors, multicollinearity, and outliers,

were met. Descriptive statistics can be found in Table 1. The sample size in the current study

was smaller than ideal. Possible limitations of the small sample size are discussed below in the

discussions section. Aside from the two participants that did not fall into either of the two

independent living groups, no outliers were found. Multicollinearity was tested by running

Pearson correlations on the predictor variables. Looking at the correlations, researchers

confirmed that multicollinearity was not an issue among the predictor variables. See Table 2 for

correlations coefficients.

Regarding the first logistic regression, three participants were excluded from the

analyses. Two of the participants were excluded because they lived with parents and due to the

small sample of participants who lived with parents the independent living groups were cut down

from three groups (independent home, independent living with supportive living staff, and living

with parents) to two groups (independent home and independent living with supportive living

staff). The third participant was excluded from both logistic regressions because no IQ score

could be obtained for that client. This resulted in a sample size of 18 for the first logistic

regression.

Regarding the second logistic regression, two participants were excluded from the

analyses. One of the participants was excluded because of missing IQ score and the other

participant was excluded because the employment status could not be determined from the case file. This resulted in a sample size of 19 for the second logistic regression. The two groups for employment were no job and job with the organization that the client data was collected from.

Main Analyses

Two direct logistic regressions were conducted to assess how well three different factors predicted employment and independent living. Both models contained three independent variables (adaptive behaviors, maladaptive behaviors, and IQ). The first logistic regression examined how well the predictor variables predicted independent living. The full model containing all predictors was statistically significant, $X^2 = 7.96$, $p = .047$, indicating the model was able to predict clients who lived independently and who lived with supportive living staff. The model as a whole explained between 35.7% (Cox and Snell R^2) and 48.5% (Nagelkerke R^2) of the variance in independent living, and correctly classified 77.8% of cases. When considering predictor variables independently, only adaptive behaviors ($p = .093$) and maladaptive behaviors ($p = .059$) were marginally significant and IQ ($p = .574$) was not significant. The strongest predictor of reporting independent living was maladaptive behaviors, recording an odds ratio of 1.32. This indicated that individuals with fewer maladaptive behaviors were 1.32 times more likely to live independently than those with more maladaptive behaviors, controlling for all other factors in the model. The odds ratio of .94 for adaptive behaviors was less than 1, indicating that for every additional unit of adaptive behavior participants were .94 times more likely to live independently, controlling for other factors in the model.

The second logistic regression examined how well the same three predictor variables predicted employment. The full model containing all predictors was statistically marginally significant, $X^2 = 6.80$, $p = .078$, indicating the model was able to predict whether clients were

employed or not. The model as a whole explained between 30.1% (Cox and Snell R^2) and 41.1% (Nagelkerke R^2) of the variance in employment, and correctly classified 68.4% of cases. When considering predictor variables independently, only adaptive behaviors ($p = .062$) was marginally significant and maladaptive behaviors ($p = .374$) and IQ ($p = .232$) were not significant. The strongest predictor of employment was adaptive behaviors, recording an odds ratio of .903. This indicated that individuals with greater adaptive behaviors were more likely to be employed.

Discussion

Results from the first logistic regression revealed that both adaptive and maladaptive behaviors were predictive of independent living, while IQ was not a significant predictor of independent living. The finding that higher adaptive behavior scores and lower maladaptive behaviors marginally predicted whether an individual with ID lived independently, or with assisted living services is consistent with previous research (Allen, 2008; Simões & Santos; 2016, Simões et. al., 2016), while the finding that IQ is not predictive of independent living is contrary to previous research (Nota et al., 2007).

These findings suggest that adaptive and maladaptive behaviors do play an important role in whether an individual with ID lives independently or with supportive living staff. Adaptive and maladaptive behaviors have been shown to improve or remain consistent in community-based environments (Young, 2000; Nøttestad & Linaker, 2002), which could be a possible reason that adaptive and maladaptive behaviors were predictive of independent living. However, it is possible that adaptive and maladaptive behaviors being predictive of independent living could provide a way to increase the number of adults with ID that live independently. If organizations and clinicians can find ways to increase adaptive behaviors and decrease maladaptive behaviors in adults with ID, then it is possible these individuals could reduce the

amount of support needed and move into a more independent living environment. Research has

shown that living in a more independent community-based environment can improve self-

determination and QOL in adults with ID (Nota et al., 2007), so increasing an individual with

ID's chances of living independently could improve the lives of these individuals.

Results from the second logistic regression revealed that only adaptive behaviors were

predictive of employment, while neither maladaptive behaviors and IQ were predictive of

employment. The finding that higher adaptive behavior scores marginally predicted whether

individuals with ID had a job or were part of the day program is consistent with previous

research (Simões & Santos, 2016, Simões et. al., 2016), while the finding that maladaptive

behaviors (Allen, 2008; Simões et. al., 2016) and IQ (Nota et al., 2007) are not predictive of

employment is contrary to previous research.

These findings suggest that adaptive functioning may be the best predictor of

independence in adults with ID. Therefore, it is possible that increasing adaptive skills may have

more impact on whether an individual with ID is employed or not than focusing on trying to

decrease problem behaviors. Problem behaviors have been thought to be predictive of adults with

ID's ability to work or not (Totsika, 2010). However, the results of the current study suggest that

adaptive behaviors may be more influential on employment than maladaptive behaviors.

Now as IQ is concerned, the results suggest that IQ may not actually be predictive of

independent living or employment. These finding question how much emphasis society puts on

intellectual functioning and whether that emphasis on IQ is valid or not. It is possible that IQ

could affect adaptive and maladaptive behaviors but may not be important in predicting whether

an adult with ID can live independently or not, or whether an adult ID has a job or is part of a

day program. These findings on IQ suggest that intellectual functioning may not be an important

factor in independence in adults with ID. Therefore, it is possible that intellectual functioning may not be predictive of QOL and the independence domain of QOL may have more to do with adaptive functioning and environment than intelligence.

The findings from both logistic regressions suggest that increasing adaptive skills in adults with ID may be the way to improve these individuals level of independence. Improving the independence in adults with ID can lead to a higher QOL in these individuals. The current study supports the idea that adaptive behaviors are a crucial factor in the QOL of adults with ID (Simões et al., 2016).

As far as the researcher's knowledge, there has been no study done like this previously. Previous studies have examined QOL and found that living situation and employment are significant predictors of QOL (Simões & Santos, 2016), as well as examined adaptive behaviors in comparison to QOL (Simões et al., 2016) and maladaptive behaviors in comparison to QOL (Allen, 2008), but no study has examined the relationship between adaptive and maladaptive behaviors and whether they significantly predict living situation and employment. This was the first study to begin to examine that relationship.

Limitations

One main limitation of the study was the small sample size. The organization used for recruitment was smaller, but the small sample size produced marginally significant results for adaptive behaviors and both living situation and employment and marginally significant results for maladaptive behaviors and living situation, so it is possible that with larger sample sizes researchers may see more significant results. Small sample size is a possible reason for the marginally significant results due to smaller sample sizes having less power to detect an effect, so future studies should address this possible limitation by using larger sample sizes.

Another limitation was that the researchers used the data on file from the participants' charts and did not do the assessments themselves, which led to some data missing, as well as some patients having more assessments on file than others. In future research, researchers should aim to assess the participants themselves, so that the difference in time of assessments would be eliminated. The researchers, also, did not have the same format used for all participants' IQ scores. Although the differences in IQ assessments used should not have affected the results, future researchers should aim to use consistent IQ assessments throughout all participants.

Finally, participants were recruited from only one organization, which limited the sample size and the extent that the results can be applied to individuals with ID. All the participants either lived independently or with assisted living and either worked for the organization or participated in their day program. The type of organization used in the current study varies from group homes and institutions and could have different results than what would be found in other types of programs.

Future Directions

Since this study has not been done before, researchers first need to try to replicate the results correcting for the limitations mentioned above. Some organizations have begun to adopt the Vineland and other measurements of adaptive and maladaptive behaviors rather than the ICAP, therefore researchers should examine the validity of the Vineland and other measurements of adaptive and maladaptive behaviors in comparison to the ICAP in future studies to ensure the consistency of adaptive and maladaptive behavior measurements across different organizations. While the ICAP has been tested and proven reliable and valid, the Vineland and other measurements of adaptive and maladaptive behaviors should be used in future studies since those

are the assessments that organizations have begun to adopt, and research should represent the changes of organizations.

Along with considering multiple of programs, future studies should add in the QOL assessment (Schalock & Verdugo, 2002). Previous studies have mainly used adaptive and maladaptive behavior scores to match participants from different programs to examine their QOL but failed to consider QOL alongside adaptive and maladaptive behaviors and their relationship to the predictors of QOL, so including QOL alongside adaptive and maladaptive behaviors would allow researchers to see the bigger picture and how the predictors correlate with QOL.

Conclusions

The current study helped shed light on an area of QOL research in individuals with ID that is currently not being examined. The hope is that future studies can further explore this area and increase the understanding of QOL, as well as help develop new interventions, in individuals with ID. While adaptive behaviors have been examined in QOL and support needs research, the focus is still on other predictors. The results of the current study suggest that more attention should be given to adaptive behaviors and how it affects QOL in adults with ID. Gaining an in-depth understanding of the relationship between QOL and adaptive behaviors in adults with ID could possibly reduce the amount of support needs needed by these individuals and increase their level of independence, which would in turn reduce the costs required to support this population.

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Table 1

Descriptive Statistics for Predictor Variables

	M	SD	N
IQ Score	51.95	11.821	20
Maladaptive Behavior Score	-7.38	5.705	21
Adaptive Behavior Score	467.05	20.168	21

Table 2

Pearson Correlations Between Predictor Variables

Variable	1	2	3
1. IQ	-	.047	.433
2. Maladaptive Behavior Score	-	-	.041
3. Adaptive Behavior Score	-	-	-