

A Validation Study of the Korean Version of the Minnesota Self-Determination Scales
(K-MSDS) for Adults with Intellectual Disabilities

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Dedication

This dissertation is dedicated to my mother, Sung-ja Kim, my wife, Heejeong, and my kids, Anna and Eugene Cho.

They are all the reasons why I live, study and love.

Abstract

It has been reported that self-determination is closely associated with desirable transition outcomes of an individual. There are, however, few Korean self-determination measures reporting the technical characteristics and merits of the measures. The purpose of this study is to examine the reliability and validity of a Korean version of the Minnesota Self-Determination Scales (Abery, Smith, Stancliffe, & Elkin 2000). Participants were forty adults with intellectual disabilities who resided in the three group homes and one residential institution in a city of South Korea. A Korean version of the Minnesota Self-Determination Scales (K-MSDS) was translated and back-translated by the investigator and associated research team members for the study. The K-MSDS was administered to the participants in an interview format. Nine culturally inappropriate items were identified and modified by the investigator. Investigation of the test-retest reliability, internal consistency reliability, and criterion-related concurrent validity were the focus of this study.

The test-retest reliability results indicated that the K-MSDS had strong correlations ranging from .842 to .943 (Pearson's r). The K-MSDS had strong internal consistency ranging from .967 to .993 (Cronbach's α). Correlations for the criterion-related concurrent validity were computed between the K-MSDS and a Korean version of Arc's Self-Determination Scale (K-SDS). The results indicated that there were acceptable correlations between the K-SDS and the K-MSDS ranging from .509 to .514 (Pearson's r). However, the test-retest reliability and criterion-related concurrent validity within a few domains of the K-MSDS were low.

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CHAPTER ONE: INTRODUCTION

Traditionally, individuals with intellectual disabilities have been viewed as unable to exercise self-determination in their lives because they have lived and worked in very structured environment. Recently, however, two studies (Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997) reported that the severity of the disability or the intellectual level of people with disabilities were not major barriers to the acquisition of self-determined behaviors. Instead, having opportunities to make choices within one's environment was the only significant contributor to obtaining self-determination. Self-determination is closely related to successful adult outcomes (Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997) enhanced communication skills and work-related behaviors in the community (Algozzine et al., 2001; Wood, Fowler, & Uphold, 2005) and higher level of self-esteem (Abery & Eggebeen, 1993).

Statement of the Problem

Significant efforts have been made in South Korea towards the development of self-determination skills with individuals who have disabilities. These efforts include exploring theoretical constructs of self-determination models (Cho, 2006; Kim & Kim, 2001), developing interventional programs (Bang, 2000; Park, 2006; Rhyou, 2003), and examining the relationships between the degree of self-determination of an individual and the transition outcomes (Kim & Kim 2005, 2006; Park & Kim 2004). Shogren et al. (2008) emphasized that self-determination measures are useful for developing, implementing and evaluating the effect of self-determination interventions with individuals with disabilities. There are many studies examining these outcomes related to an individual's level of self-determination in South Korea (Kim & Kim 2005, 2006; Park

& Kim 2004). However, there is limited evidence determining whether measures used in these studies have good psychometrical indicators to develop, implement and evaluate self-determination interventions. The findings of the literature review show a need for self-determination measures with good psychometric properties in South Korea.

Another problem is that there are no existing self-determination measures invented for adults in South Korea. Most measures focused on measuring self-determination of secondary students with intellectual disabilities. Considering that self-determination is a developmental process to learn controlling over the one's life throughout the one's whole life (Abery & Stancliffe 2003; Wehmeyer, 1998), it is assumed that the individual's level of self-determination will vary as one matures. Equal emphasis must be placed on self-determination assessment tools for adults as well as secondary students.

The last problem is that existing measures are based on limited perspectives of self-determination theory. For example, the Korean version of the Arc's Self-Determination Scale (K-Arc SDS; Kim, Cho, Moon and Kim, 2000) is based on a functional theory of self-determination (Wehmeyer, 1996b), while the Korean version of the AIR Self-Determination Scale (K-AIR; Rhyou, 2003) is based on self-determined learning theory (Mithaug et al., 2003). There are currently no self-determination measures representing the ecological theory (Abery & Stancliffe, 1996). The role of environments in enhancing self-determination has been most extensively examined in the construct of an ecological theory of self-determination. An alternative measure that incorporates an ecological perspective may provide more information that can be used for

the development of intervention programs specific to the needs of adult individuals with intellectual disabilities.

Purpose and Research Questions of the Study

The purpose of this study is to examine the reliability and validity of a Korean version of the Minnesota Self-Determination Scales (Abery, Smith, Stancliffe, & Elkin 2000) for adults with intellectual disabilities. The Minnesota Self-Determination Scales (MSDS) were developed using the construct of an ecological model of self-determination (Abery & Stancliffe, 2003). This study intends to validate the technical characteristics of a Korean translated set of the Minnesota Self-Determination Scales (K-MSDS) with a sample of adults with intellectual disabilities residing in three group homes and one residential institutional setting in South Korea.

Research Questions

Research question 1: Does the K-MSDS yield adequate test-retest reliability correlations when administered to a selected sample of adults in three Korean group homes and a residential institution at two different points in time?

Research question 2: Does the K-MSDS yield acceptable internal consistency coefficients when administered to a selected sample of adults in three Korean group homes and a residential institution?

Research question 3: As a means of establishing criterion-related validity of the K-MSDS,

- a. do the total scores on the three scales of the K-MSDS yield adequate correlations with the total scores on the K-Arc's SDS (K-SDS) with a sample of adults in three Korean group homes and a residential institution?

- b. do scores on the eight domains of the K-MSDS yield adequate correlations with scores on the four domains of the K-SDS with a sample of adults in three Korean group homes and a residential institution?
- c. do the Index scores from the K-MSDS yield adequate correlations with the total scores on the K-SDS with a sample of adults in three Korean group homes and a residential institution?

Definitions of Terms

Intellectual disability: Significant limitations both in intellectual functioning and in adaptive behaviors (e.g. 2 Standard Deviations below the mean on a standardized test of intelligence and on an adaptive behavioral measure. This disability originates before age 18 (American Association on Intellectual and Developmental Disabilities, 2002).

Technical adequacy: The psychometric property of a measurement that includes both test validity and test reliability.

Test reliability: the accuracy and consistency of a measurement in assessing whatever it measures (Maruyama, 1992). In this study, the test-retest and internal reliability are investigated.

Test validity: the extent to which a measure actually assesses what it intends to measure (Maruyama, 1992). In this study, the content and concurrent criterion-related validity is examined.

Additional terms (e.g., the test-retest, internal consistency reliability, concurrent criterion-related validity) regarding the reliability and validity for this study are

defined and explained in the 'reliability and validity' part of Chapter III:

Methods in this paper.

CHAPTER TWO: REVIEW OF THE LITERATURE

Scope of the Literature Review

This literature review focuses primarily on three self-determination theories: 1) a functional theory of self-determination (Wehmeyer, 1996a), 2) an ecological theory of self-determination (Abery & Stancliffe, 1996), and 3) a self-determined learning theory (Mitahug et al, 2003). The purpose of this review is to understand the relevance among these three self-determination theories and to seek the implications for individuals with intellectual disabilities in the development of intervention programs. A theoretical exploration of self-determination theories will be sought in relation to its background, definition and theoretical structure relating to intrinsic motivation. The psychometric characteristics of self-determination measures based on the theoretical constructs within each of the three theories will be examined.

Conceptualizations of Self-Determination

The construct of self-determination in special education arose from intrinsic motivation (Eisenmann, 2001). Intrinsic motivation is defined as “the doing of an activity for its inherent satisfaction rather than some separable consequences” (Ryan & Deci, 2000, p56). For example, intrinsic motivation seeks satisfaction from curiosity, the desire for challenge or the feeling of competence. In contrast, extrinsic motivation is referred to as “the doing of an activity for obtaining a separate outcome” (Ryan & Deci, 2000, p60). Extrinsic motivation includes seeking a reward or approval, or avoiding pressure. Intrinsic motivation is the primary source for developing self-determination. Spontaneous behaviors driven by intrinsic motivation are a critical element for the cognitive, social, and physical development of the individual (Ryan & Deci, 2000). Intrinsic motivation is

also closely associated with a long-term sustained performance, and learning efficiency (Switzky, 2006). Switzky found that when students with intellectual disabilities learn from intrinsic motivation (e.g. curiosity, the desire for challenge, or the feeling to be competent), those students can integrate the materials more efficiently into their cognitive schemas (Switzky and Schultz , 1988). Haywood and Switzky had applied these findings, to the work environment with individuals who have intellectual disabilities (Switzky & Haywood 1985, 1991). They found that the adults can set their work-related goals, control their behaviors and work harder when the individuals were intrinsically motivated.

Unfortunately, individuals with intellectual disabilities tend to have much lower levels of intrinsic motivation than their peers without disabilities. In contrast, they tend to have higher levels of extrinsic motivation than their peers without disabilities (Wehmeyer Kelchner, & Richards, 1996). Thus the behaviors of individuals with intellectual disabilities are likely to depend on external reinforcement, external approval, and extrinsic motivational incentives controlled by others in their environment (Schultz & Switzky, 1990). The cause of these extrinsic motivations for individuals with intellectual disabilities is generally attributed to socially deprived life histories, greater cognitive deficiency, and fear of repeated experiences (Switzky, 1997). Intrinsic motivation should be considered an educational concern for individuals with intellectual disabilities in improving self-determination.

Definitions of Self-Determination

There is no consistent definition of self-determination due to various theoretical perspectives. This section examined the definitions that the three different perspectives

provide: 1) a functional theory of self-determination proposed by Wehmeyer (1996a), 2) an ecological theory of self-determination proposed by Abery and Stancliffe (1996), and 3) a self-determined learning theory proposed by Mithaug et al. (2003).

Wehmeyer (1996a) defined self-determination as the attitudes and the abilities of the individual to act as the primary causal agent in one's life, and to make choices and decisions regarding one's quality of life free from undue external influence or interference (See Table 1). The construct of the causal agent is central to his definition of self-determination. Within this construct, a primary causal agent is a person or thing whose power is exerted to make events happen in his or her own life (Wehmeyer & Bolding, 2001). Thus, a causal agent's action is purposeful and planned (Wehmeyer, 2004).

Using Wehmeyer's construct (1996a), being a causal agent does not require becoming the absolute controller over all one's life, but having the opportunity to exercise one's influence as a causal agent in choice and decision-making (Wehmeyer & Metzler, 1995). The construct of a causal agent is closer to a shared control, which shares the responsibility for making difficult decisions both with persons having disabilities and with their supporters. The shared control is beneficial to a person with a significant intellectual disability who may not be able to independently make complex decisions (Wehmeyer, 1998).

Wehmeyer acknowledged the importance of environments in enhancing self-determination (Wehmeyer & Bolding, 1999; Wehmeyer, Kelchner & Richards, 1995). Wehmeyer's (1996a) theory, however, places greater emphasis on the personal characteristics of individuals, such as developing and enhancing skills and changing

attitudes, rather than on changes of the environment surrounding the individuals. Thus his theory was understood as a psycho-educational perspective (Stancliffe, 2001).

Abery and Stancliffe (1996) defined self-determination as the degree of personal control which one wishes to exercise over those areas he or she considers important (See Table 1). Personal control refers to the absolute control levels over what happens in one's life (Stancliffe, Abery, & Smith 2000). Personal control varies according to the individual. However, self-determination can be understood as a broader concept encompassing 'personal control', 'self-determination competencies' and 'environmental influences' (Stancliffe et al., 2000). Abery and Stancliffe's (1996) theory places greater emphasis on influences of the environment on the individual than on the individual's knowledge, attitudes, and skills of self-determination the individual has. Thus Abery and Stancliffe's theory is understood as an ecological perspective (Stancliffe, 2001).

Mithaug (1998) defined self-determination as having the opportunity and capacity to pursue the goals in life that are (1) consistent with one's needs and interests and (2) expressed in a community that promises to respect those pursuits (p 41) (See Table 1). In this definition, "the greater an individual's capacity and opportunity to be self-determined are, the greater would be one's prospectus for self-determination" (Mithaug et al., 2003. p63).

Self-determined leaning theory focuses on clarifying how individuals interact with opportunities to obtain what they want and need. This theory places greater emphasis on the process through which an individual becomes a self-determined learner than outcome of self-determination (Shogren et al., 2008). A self-determined learner is an individual who learns to change expectations, to make choices and to regulate his or her behavior in order to get what the one wants. These types of learning (e.g., changing

expectation, making choice and regulating behavior) occur most efficiently through ‘optimal opportunity’. Optimal opportunity is a customized circumstance through which an individual learns problem solving strategies (Mithaug et al., 2003). An individual experiences his or her controls through optimal opportunity. Mithaug (1998) acknowledged the environmental effects on an individual’s self-determination.

Table 1 Definitions of Self-Determination

Theorist	Definition	Primary driving force
Wehmeyer (1996)	acting as the primary causal agent in one’s life and making choices and decisions regarding one’s quality of life free from undue external influence or interference (p351)	Individual characteristic
Abery (1996, 2003)	individual’s exercising the degree of control they desire over those areas in life they consider important (p 44)	Individual-environmental interaction
Mithaug (1998)	the freedom (opportunity) to use one’s resources (capacity) to pursue those goals in life that are (1) consistent with one’s needs and interests and (2) expressed in a community that promises to respect those pursuits (p41)	Individual-environmental interaction

Structure of Self-Determination

Wehmeyer, Kelchner and Richards (1996) proposed a functional model of self-determination. In the model, the primary causal agency is based on four functional characters of behavior: 1) autonomy, 2) self-regulation, 3) self-realization, and 4) psychological empowerment. Wehmeyer et al. (1996) understood these four traits as the essential characteristics that support self-determined behaviors. The construct of autonomy is defined in two interwoven constructs, (a) as acting as independently and (b)

as acting according to the preferences or interests of the individual. The construct of ‘acting as independently’ includes the interdependence of family, friends, and service providers as well as acting alone (Wehmeyer et al., 1996). Self-regulation includes two constructs: (a) interpersonal cognitive problem solving, and (b) goal setting. The interpersonal cognitive problem solving is to examine environments in which the person is placed, and his or her responses for coping with those environments. The goal setting is to identify goals in three major transition areas: living, work, and transportation (Wehmeyer & Schwartz, 1997). Self-realization is defined as having comprehensive and accurate knowledge of his or her capabilities as well as limitations (Palmer & Wehmeyer, 1998). The construct of psychological empowerment is explained in the related constructs: (a) locus of control, (b) self-efficacy and (c) outcome-expectancy (Wehmeyer & Schwartz, 1997). The construct of psychological empowerment is explained in having a belief that an individual (a) ‘controls over circumstances’, (b) ‘possess the requisite skills to achieve desired outcomes’, and (c) ‘the identified outcomes will result

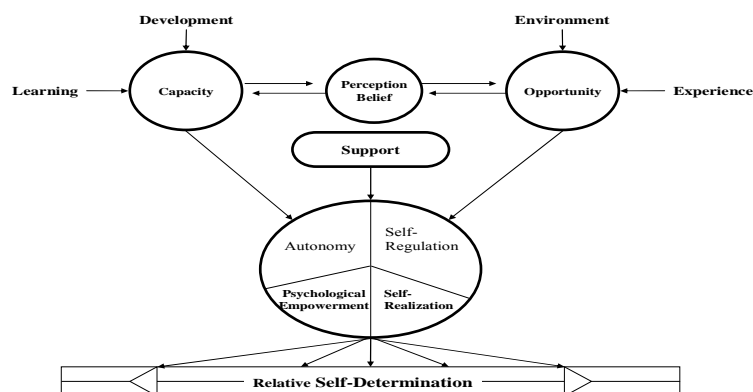


Figure 1. A functional model of self-determination (Wehmeyer, 1996b)

Wehmeyer (1998) identified 12 component elements of self-determined behavior. Wehmeyer's position was that the 12 component elements were not all the possible behaviors of self-determination, but instead, were predictive of behaviors that most self-determined persons use. Wehmeyer et al. (1996) postulated that these four characteristics emerge as the 12 element skills are developed. See Table 2.

Table 2 Component Elements of Self-Determined Behavior (Wehmeyer, 2003)

Components
<ul style="list-style-type: none"> ▪ Choice-Making Skills ▪ Decision-Making Skills ▪ Problem-Solving Skills ▪ Goal-Setting and Attainment Skills ▪ Independence, Risk-Taking and Safety Skills ▪ Self-Observation, Evaluation and Reinforcement Skills ▪ Self-Instruction Skills ▪ Self-Advocacy and Leadership skills ▪ Positive Attainment of Efficacy and Outcome Expectancy ▪ Self-Awareness ▪ Internal Locus of Control ▪ Self-Knowledge

Abery and Stancliffe (2003) proposed an ecological model of self-determination based on Bronfenbrenner's (1977) work and Garbarino's (1982) notion of a reciprocal determinism. The ecological model includes theoretical constructs on both personal competencies and environmental effects. Within this construct, the personal competencies are influenced by the environmental effects, and in turn, they influence the environment creating an interactive effect.

Abery stated that an individual's self-determination depends on the degree of concordance between the three levels of personal control: 1) desired degree of personal control (*desired control*), 2) degree of personal control exercised (*exercised control*), and 3) importance (*importance*). See Figure 2.

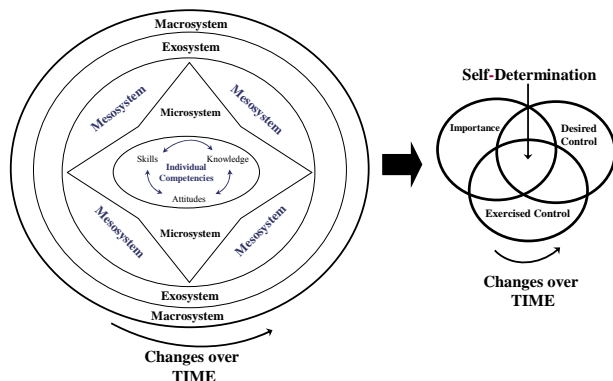


Figure 2. An Ecological Model of Self-Determination and Ecological Process (Abery & Stancliffe, 2003)

Desired control is the extent to which an individual wants to exercise control over one's life. For example, asking a response for "Do you really want you to bring it or some one to bring it for you" is relevant to the desired control. Exercised control is the extent to which an individual actually takes control over his or her life. For example, asking a response for "Who brought the i-pod on the desk to you?" is relevant to the desired control. Importance is the extent to which an individual personally views a certain event occurring as being important (Abery & Stancliffe , 2003). For example, asking a response for "How meaningful is it for you to have the i-pod" is relevant to the desired control. Within the construct, a person who has a low exercised control due to a significant disability can obtain a high level of self-determination when there is a close match between the individual's desired control and the importance of a desired outcome. For example, both the shared control and voluntarily relinquished control are respected within the ecological theory. Shared control is to share the responsibility for making difficult decisions with trusted persons. Voluntarily relinquished control is to willingly

forfeit a great deal of control of making decisions to the trusted persons (Elkin, 2007).

A consideration for exercising the shared and voluntarily relinquished control is to acknowledge one's limited abilities and to expect better benefits from collaboration with others.

Self-determination is a by product of the interaction between personal competences and environments. Personal competency is based on three categories: 1) self-determination skills, 2) knowledge, and 3) attitudes. An individual's ability to exert personal control would be enhanced as he or she acquires the eight self-determination skills (Abery, 1994). However, self-determination of the individual is influenced by the knowledge and attitude domain (See Table 3). The knowledge domain is the extent to which an individual understands his or her own competencies and the environment surrounding the individual. The attitude domain is the feelings and perceptions of an individual of persons, events, and objects (e.g., locus of control, self-efficacy) (Abery & Stancliffe, 2003).

Table 3 Personal Competency Factors (Abery & Stancliffe, 2003)

Skills	Attitudes/ Beliefs	Knowledge
▪ Goal Setting	▪ Internal locus of control	▪ Knowledge Available Options
▪ Decision-making	▪ Self-Confidence/Efficacy	▪ Understanding of one's Rights
▪ Self-Regulation	▪ Self-Esteem/Concept	▪ Knowledge of Available resources
▪ Problem Solving	▪ A sense of Determination	▪ Self-Awareness
▪ Personal Advocacy	▪ Feeling Valued by Others	▪ Personal Finances
▪ Communication		▪ Declarative and Procedural Knowledge
▪ Social Skills		
▪ Independent Living		

Personal control has been examined at four ecological levels: 1) the micro-system, 2) the meso-system, 3) the exo-system, and 4) the macro-system. These ecological levels are the situations in which the personal competencies (i.e. skills, knowledge, and attitudes) are obtained, practiced, or enhanced (Abery, 1994). The micro-system is the closest environment in which the individual lives (e.g. family and school). The meso-system is an interrelationship between two or more micro-systems (e.g. a collaborative effort of school and family for supporting their children). The exo-system is the external influence on an individual in which the individual does not directly participate (e.g. unemployment of a parent, economic depression of a society). The macro-system involves cultural and ideological patterns of a society such as its laws or customs (e.g. the revised IDEA 2000).

Mithaug et al. (2003) proposed a self-determined learning model. In the model, self-determination is largely influenced by two domains: capacity and opportunity. Capacity includes three sections: knowledge, ability, and perceptions. Opportunity includes home and school environments. Knowledge is defined as “understanding of an individual’s self-determination and the behavior it requires” (Wolman et al., 1994, p11). Knowledge is referred as ability to examine needs, interests, abilities and limitations for exercising self-determination. Ability is referred as the practical skills to exercise self-determination. Ability is expressed through making choices, decisions, and setting goals. Perception is an individual’s feeling to be confident with the one’s knowledge and ability. Perception includes motivation, confidence, self-esteem, and a sense of freedom to meet one’s interests and needs. Opportunity is where an individual’s self-determination is exercised. Opportunity is considered beyond simple physical environments at school and

home. For example, school includes teacher's encourage and positive feedback that enable a student to identify the one's interests and abilities in the school activities. Home includes parental encourage and expectations that assist his or her children to make choices in family chores or leisure activities and to take responsibility for school assignments (Wolman et al., 1994).

Summary

There are common characteristics in definitions and theoretical constructions across the models reviewed. All the definitions of self-determination contain taking responsibility for one's own life. The meaning of 'taking responsibility' includes both direct and indirect controls over one's life. The indirect controls are greatly emphasized across the definitions examined. Indirect control is an effort to actively seek higher satisfaction through collaborations with other persons through supportive environments.

Another primary component is to acknowledge the environmental effects in improving self-determination of an individual. It is a commonly accepted perspective that self-determination of an individual is influenced in part by the environments surrounding the individual. It is also commonly accepted a view that low self-determination for individuals with disabilities is ascribed to the lack of opportunity to learn, to refine, and to exercise self-determination in their daily lives.

The last component is choice-making. The concept of 'choice-making' is considered beyond 'simply selecting an option'. Choice-making is viewed as a reflection of a set of requisite skills in exercising self-determination (Bambara, Cole & Koger, 1998). In contrast, there are differences among the three theories reviewed. The functional theory of self-determination focuses on personal characteristics. The self-

determined learning theory emphasized the process through which an individual becomes self-determined. In contrast, the ecological theory of self-determination emphasizes the role of the environment on an individual's self-determination.

Self-Determination Measures

Self-determination measures are useful for evaluating the impact of self-determination intervention, examining environmental characteristics that promote self-determined behavior of an individual and measuring the combined effect of self-determination and other transition outcomes (Shogren et al., 2008). Three instruments have been developed for use in South Korea: 1) a Korean version of the AIR Self-Determination Scale (K-AIR; Rhyou, 2003), 2) a Korean version of the Arc's Self-Determination Scale (K-SDS; Kim, Cho, Moon and Kim, 2000) and Program based the Self-determination Skill Scale (PSSS; Bang, 2006).

The American Institute for Research Self-determination scale (AIR; Wolman et al., 1994) is a measure for all school age students from Kindergarten to 12th grade. The AIR focuses on the constructs of capacity and opportunity of school-aged children. The scale has four measures for different informants: 1) a student (AIR-S), 2) an educator (AIR-E), 3) a parent (AIR-P) and 4) a researcher (AIR-R). Among these four measures, the educator measure will be reviewed in the paper. The educator measure (AIR-E) requests a teacher's observations of a student's behaviors. The AIR-E uses a 5 point rating scale. This 30 item measure includes two parts: capacity and opportunity clustered into five domains (knowledge, ability, perception, opportunity -school and opportunity -home). The capacity subscale rates knowledge, abilities, and perceptions of self-determination. The opportunity subscale rates the student's chances to exercise his or her

knowledge and abilities at school and home. Test-retest reliability (.74), split-half reliability (.91), and alternate-form reliability (.91 to .98) were reported by Wolman et al., (1994). The internal consistency coefficient varied from .40 to .82 across the five domains. Construct validity was established through a confirmatory factor analytic study to identify consistent factors with theoretical domains on the test (Wolman et al., 1994).

A Korean version of the AIR (K-AIR) was developed using the AIR-E only by Rhyou (2001). The internal consistency coefficients ranged from .87 to .95 for the five domains. Test-retest reliability was .74 and split-half reliability was .95 (Rhyou, 2001). Construct validity was established through a confirmatory factor analysis (Rhyou, 2003). The psychometric properties were established by administering the K-AIR to various samples including mostly secondary students with intellectual disabilities. A summary is provided in Table 4.

The Arc's Self-Determination Scale (SDS; Wehmeyer & Kelchner, 1995) was developed to measure self-determination with both secondary students and adults. This measure has two forms: an adult and an adolescent form, which share the same content. The adolescent form was developed with a sample of 500 adolescents with and without disabilities (Wehmeyer, 1996b). The adult form was adapted from the adolescent form by the author of the adolescent form. For example, terms such as "school" on the adolescent form were replaced with "work" in the test items on adult form. Considerable factor similarities between the adult and adolescent forms were found (Wehmeyer & Bolding, 1999; Wehmeyer & Garner, 2003). The SDS measure is divided into four domains: (a) autonomy, (b) self-regulation, (c) psychological empowerment and (d) self-realization. The internal consistency coefficient was .90. However, the self-regulation was not

included in calculating the internal consistency of the SDS, because it used open-ended response items (Wehmeyer, 1996b). Other reliability coefficients were not reported for the adult form. Criterion related-validity was established between the Arc's SDS and other construct related measures such as Internal-External Scale ($r=.46$), the Intellectual Achievement Responsibility Scale ($r=.46$) and the Psychological Empowerment Scale ($r=.48$) $p<.001$ (Wehmeyer, 1996b).

The Korean version of Arc's Self-Determination Adolescent Scale (K-SDS) was developed by Kim, Cho, Moon and Kim (2000). The K-SDS was normed on 710 Korean adolescents with and without disabilities. The K- SDS used a standardized sample that matches a South Korea census in terms of age, region and gender. The internal consistency was .95 (Kim et al., 2000). Other reliability coefficients were not reported. Construct validity was established through a confirmatory factor analysis which identified the consistent factors between K-SDS (Kim et al., 2000) and the SDS measure (Wehmeyer & Kelchner, 1995). The psychometric properties of the measure were established by administering this measure with secondary students with intellectual disabilities. The sample sizes ranged from thirty to 157. A summary of studies related to the technical characteristics of the K-SDS may be reviewed in Table 5.

The Program-based Self-determination Skill Scale (PSSS) was developed by Bang (2006). This scale is used to evaluate the effect of self-determination instructions with young students at Kindergarten and through elementary levels. The measure includes 180 items divided into the eight domains (e.g., self-awareness, self-management). One of the shortcomings with the PSSS is an undefined theoretical background for the development of items. Internal consistency was reported at .94 (Bang

& Jeon, 2007). Other reliability and validity estimates were not reported. A summary is provided in Table 6.

Summary

Three Korean self-determination measures were reviewed; the K-AIR, the K-SDS and the PSSS. These measures were developed based on different theoretical perspectives. The K-AIR was based on the Self-determined learning theory (Mithaug et al., 2003), while the K-SDS adheres to the functional theory of self-determination (Wehmeyer, 1996b). These measures were designed for use with different age group; with the K-SDS, K-AIR and PSSS focusing on 10- 12th graders, K- 12th graders and K-6th graders respectively. Among these measures, K-SDS had strong reliability and validity coefficients. However, both the K-AIR and the PSSS did not provide reliability and validity evidence. The K-SDS was the only norm-referenced measure. In contrast, the K-AIR and the PSSS used a small sample with an N=30 in each study which did not include a normative base. Three problems were found through the literature review of the Korean self-determination measures. The first problem is a lack of self-determination measures reporting both the reliability and validity. The second problem is that there are no self-determination measures developed to assess self-determination of adults in South Korea. The third problem is that the Korean measures were developed based on a limited perspective of self-determination.

Table 4 Results of a Literature Review on A Korean Version of AIR Self-Determination Scale (K-AIR)

Researcher(s)	Disability Type	Age	N	Cronbach's alpha	Measures & Design	Related outcomes
Rhyou (2003)	Intellectual	16-18	30	.87-.95	K-AIR (2003) Pre-post control group design	High school students who received the Self-Determination Activity program earned higher self-determination scores on the K-AIR than those who received the traditional instructions.
Park & Shin (2003)	Intellectual	16-18	48	.79	K-AIR (2001) Quality of Life Measure Indicator (Park, 2002) Two-Way ANOVA	High school graduates who were employed and lived in the community-integrated housings earned higher scores on both K-AIR and QLMI than those who were employed in the community-segregated residential institutions.
Park & Kim (2004)	Various	16-18	120	.83	K-AIR (2001) Quality of Life Measure Indicator (Park, 2002) Two-Way ANOVA	High school graduates who had physical disabilities earned high scores on the K-AIR than those who had intellectual disabilities . Those scores on K-AIR positively related to scores on QLMI across all disability groups.
Park & Kim (2005)	Intellectual	16-18	40	.92	K-AIR (2001) Step to Step Self-Determination (Filed & Hoffman, 1996) Pre-post control group design	High school students who received the Step to Step instruction earned higher scores on the K-AIR than those who received the traditional instructions.
Kim et al., (2007)	Intellectual	16	68	.83	K-AIR SDS (2003) Quality of Life Measure Indicator (Park, 2002) Two-Way ANOVA	High school students who were placed in inclusive classroom earned higher scores on the K-AIR than those who were placed in segregated-classroom. Those scores on the K-AIR positively related to those on the QLMI.

Table 5 Results of a Literature Review on A Korean Version of Arc's Self-Determination Scale (K-SDS)

Researcher(s)	Disability Type	Age	N	Cronbach's alpha	Measures & Design	Related outcomes
Kim (2003)	Intellectual	16-18	157	.95	K-Arc SDS (2001) Step to Step Self-Determination (Filed & Hoffman, 1996) Three-Way ANOVA design	High school students who received the Self-determination instruction earned higher self-regulation scores on the K-SDS than those who received the traditional instructions.
Kim & Kim (2005)	Intellectual	16-18	93	.94	K-Arc SDS (2001) Adult outcome Survey (2005) Logistic Regression design	High school graduates who earned high scores on the K-SDS had higher college accept rates than those who earned low scores five month after their high school graduations.
Kim & Kim (2006)	Intellectual	16-18	93	.94	K-Arc SDS (2001) Adult outcome Survey (2005) Classroom Environment Scale (Trickett & Moos, 1973) Career Decision Diagnostic Assessment (Barnsberg & Sklare, 1986) Logistic Regression design	High school graduates who earned high scores on the K-SDS had higher employment rates than those who earned low scores eight months after their high school graduations.
Park (2006)	Intellectual	10-11	30	.92	K-Arc SDS (2001) Assertiveness Scale (Kim, 1990) Pre-post control group design	Elementary students who received a decision making instruction program earned higher self-regulation scores on K-SDS than those who received the traditional instruction.

Table 6 Results of a Literature Review on Korean Program-based Self-determination Skill Scale (PSSS)

Researcher(s)	Disability Type	Age	N	Cronbach's alpha	Measures & Design	Related outcomes
Bang (2006)	Intellectual	16-18	10	.99	PSSS (2006) Adaptive Behavior scale (Wessermen et al., 1979) Pre-post group design	High school students who received the Role Play Centered Self-determination Activity Program earned higher scores on the PSSS and Adaptive behavior scale than when they didn't receive the program.
Bang & Jeon (2007)	Intellectual	10-11	21	.94	PSSS (2006) Emotional Intelligence Test (Moon, 1999) Pre-post group design	Elementary school students who received the Role Play Centered Self-determination Activity Program earned higher scores on the Assertive, Social and Cooperative skill domains on the PSSS than when they didn't receive the program.

CHAPETR THREE: METHODS

The purpose of this study was to examine the technical adequacy (i.e., the reliability and validity evidence) of scores on a Korean version of the Minnesota Self-Determination Scales (Abery et al., 2000) with 40 adults who have been identified as having intellectual disabilities. Three research questions were investigated in this study.

Research Questions

Research question 1: Does the K-MSDS yield adequate test-retest reliability correlations when administered to a selected sample of adults in three Korean group homes and a residential institution at two different points in time?

Research question 2: Does the K-MSDS yield acceptable internal consistency coefficients when administered to a selected sample of adults in three Korean group homes and a residential institution?

Research question 3: As a means of establishing criterion-related validity of the K-MSDS,

- a. do the total scores on the three scales of the K-MSDS yield adequate correlations with the total scores on the K-Arc's SDS (K-SDS) with a sample of adults in three Korean group homes and a residential institution?
- b. do scores on the eight domains of the K-MSDS yield adequate correlations with scores on the four domains of the K-SDS with a sample of adults in three Korean group homes and a residential institution?
- c. do the Index scores from the K-MSDS yield adequate correlations with the

total scores on the K-SDS with a sample of adults in three Korean group homes and a residential institution?

Reliability and Validity

Reliability refers to the accuracy and consistency of a measurement in assessing whatever it measures (Maruyama, 1992). The use of reliability assessment is to identify random errors in the administration of a measurement. There are commonly three types of reliability: internal, test-retest, and alternate-form reliability. In this study, the internal consistency and test-retest reliability were investigated. Internal consistency reliability refers to the degree of interrelatedness among a set of items (Netemeyer, Bearden, & Sharma, 2003). Test-Retest refers to the consistency of test results between two different assessment occasions. Alternate form reliability refers to the consistency of test results between two different test forms to measure the same trait (Salvia & Ysseldyke, 2001). Alternate form reliability was not used for the study due to the practical difficulty in designing alternate forms. It was difficult to construct the 270 items of the K-MSDS to be equivalent with individuals who have intellectual disabilities.

Validity is defined as the extent to which a measure actually assesses what it intends to measure (Maruyama, 1992). There are generally three types of validity: content, criterion and construct. In this study, criterion validity was examined. Criterion-related validity refers to the extent to which “the degree of person’s knowledge about the domains can be estimated from the person’s test scores” (Carmines & Zeller, 1979).

Criterion is a theoretically derived hypothesis concerning the concept. It is divided into two types: concurrent and predictive validity. In this study, the K-SDS was used as the criterion for measuring the concurrent validity with the K-MSDS.

Method

Participants

Participants were 40 adults with intellectual disabilities who resided in three group homes and one residential institution. Of the participants, 28 individuals were recruited from a residential institution and 12 were recruited from three group homes in a southern city of South Korea whose directors agreed to participate in the study. The participant's guardians were directors of the residential institution and group homes following the practices within the Korean Department of Social Services. The participants included 24 males (60%) and 16 females (40%). All the participants were adults (i.e., over 20 years of age as a legal adult in South Korea). They ranged in age from 20 to 42 years (average = 31.5, standard deviation [SD] = 6.36). Adaptive behavior scores were measured using the Korean Social Maturity Scores (Kim & Kim, 1998). Averaged 35.7 ([SD] = 15.2.). Thirty individuals (75%) were married and ten individuals (25%) were unmarried. All the participants were employed (e.g., including both paid and unpaid jobs). 23 individuals (57.5%) held paid jobs and 17 individuals (42.5%) held unpaid jobs. See Table 7.

The primary disability of the participants was an intellectual disability (Mental Retardation). Twenty five (N=25) individuals had intellectual disabilities and fifteen (N=15) individuals had multiple disabilities. Within the multiple disabilities categories,

seven (N=7) individuals had language disabilities. Four (N=4) individuals had cerebral palsies. Four (N=4) individuals had epilepsy. Twelve (N=12) individuals received limited support. Eighteen (N=18) individuals received intermediate leveled support. Ten (N=10) individuals received pervasive leveled support (Wehmeyer, 2003). Demographic information of the participants is listed in Table 7.

Table 7 Participant Information

Biographic Variables	N	Percentage
<i>Gender</i>		
Male	24	60%
Female	16	40%
<i>Disability</i>		
Significant Intellectual disability (Mental Retardation only)	27	62.5%
Multiple Disability	15	37.5%
<i>Within Multiple Disability</i>		
Language disorder	7	17.5%
Cerebral palsy	4	10%
Epilepsy	4	10%
<i>Employment/Day Program</i>		
Competitive employment	2	5%
Supported-employed	21	52.5%
Sheltered workshop	17	42.5%
<i>Level of support</i>		
Pervasive	0	0%
Extensive	10	25%
Limited	18	45%
Intermittent	12	30%
<i>Type of residence</i>		
Residential institution	20	50%
Group home	12	30%
Pre-group home	8	20%

Site

Twelve (N=12) participants resided in three group homes that provided semi-independent living services located in integrated community settings. The unmarried participants shared their room with two to three other residents. The married participants lived with their family members. They received regular assistance from supportive staff who visited their apartments for 6 to 8 hours on a daily basis. The supportive services included supervising public transportation or raising children, and providing safety training in the community. Even though they received support services regularly, the intensity of the service was minimal and focused on the prevention of emergent crisis.

Twelve (N=12) participants lived in a 'pre-group home' building located in a residential institution in a segregated community setting. The 'pre-group home' is designed to prepare individuals for semi-independent living in integrated-community settings. The participants lived with two to three residents in a room. These individuals received assistances from supportive staff who visited their building for 6 to 8 hours on a daily basis. The support services focused on preparation for their future lives in group home life. The supportive services provided practical assistance in laundry, dining, public transportation, and managing money.

Sixteen (N=16) participants were served in a residential institution which provides 24 hour supervision and supportive services. These individuals resided in four-person rooms within the residential institution located in a segregated-community setting. These individuals received extensive staff support and supervision. The services included assistance with mobility, dining, bathing and dressing. All group homes and the

residential institution were non-profit agencies operated with governmental funds and managed by certified directors.

Ethical considerations

This study was approved by the Institutional Review Board (IRB) of the University of Minnesota (IRB #0804P31081). The investigator received written authorization letter from the University of Minnesota Human Subject Research Committee. All adult residents with intellectual disabilities residing in a residential institution or group homes in South Korea were potential participants for this study. The investigator explained the purpose of the research, protections to possible risks and concerns to directors of the potential participating institutions and perspective participants. The investigator received written permissions from directors of the residential institution and three group homes in a city of South Korea. Oral consent was obtained from participants (e.g. residents with intellectual disabilities). According to 45 CFR 46.117 (c) described by the IRB, written consent was waived for the participants with significant intellectual disabilities. The consent document was communicated orally by a member of the research team. The participant's opinion whether to participate in the study was marked on the consent form without the participant's signature. Each participant was informed that participation in the study was voluntary and able to stop at any time (See Appendix C, D, E and F for the consent forms).

Instrumentation

Instrument 1: Measuring Self-Determination

The Minnesota Self-Determination Scale (MSDS) (Abery et al., 2000) consists of three scales designed to measure self-determination of an individual and environmental features in which the individual lives. The three scales include: (1) Exercise of Control Scale, (2) Decision-Maker Preference Scale, and (3) Importance of Control Scale. These scales were developed to assess: (1) the levels of exercising personal control of the individual (Exercise of Control Scale), (2) desired levels of decision-making of the individual (Decision-Making Preference Scale), (3) the degree to which individuals are actually making decisions in their lives (Importance of Control Scale). There are no specific directions to specify the order of three scales in administering these scales with the interviewees. The three scale interviews were administered in the following order: the Decision-Making Preference Scale, the Importance of Control Scale and the Exercise of Control Scale. The MSDS was developed to include both a Residential Staff version and an Adult Self-Report version. The Residential Staff version was designed to be completed by an informant who knows the individual well. In contrast, the Adult Self-Report version was designed to be completed through direct interviews with the participants. In this study, the Adult Self-Report version was used.

All three scales included interview booklets that explained the administration procedures and included the interview questionnaires and a picture book with corresponding illustrations to the item questionnaires. Each scale includes 90 items.

The 90 items are grouped into eight domains: (1) At Home, (2) Leisure, (3) Friend, (4) Health, (5) At Work, (6) Plans, (7) Support Money, and (8) Support Staff.

This scale uses a 3-point scale to evaluate the levels of exercising personal control of the individual.

Item questionnaires in the three scales share the same content. Only the beginning statements vary like as “How much do you care about ~” on the Important Scale, “Who decides ~” on the Exercise Control Scale, and “Who do you want to decide ~” on the Decision-Preference Scale

The Exercise of Control Scale (Personal Control Scale): Adult Self-Report Edition. This 90 item scale assesses the amount of control an individual exercises over his or her life. The items were developed from the Institute on Community Integration Self-Determination Opportunities and Exercise Scale (ICI- SDOES) (Abery, B., McGrew, K., & Smith, J., 1994 as cited Abery & Stancliffe, 2003). The items are grouped into eight domains. A 3-point scale is used to evaluate the individual’s levels of exercising control. Scale points are: 1 (Someone else decides), 2 (We decide together), and 3 (I decide). Sample questions are “Who decides how you spend your money?” and “Who chooses what food you eat for supper?” Total scores on the scale range from a low of 90 to a high of 270 points.

The Decision-Making Preference Scale (Preference Scale): Adult Self-Report Edition. This 90 item scale assesses how an individual would like to make decisions over his or her life. The number of items and domains correspond to those in the Exercise of Control Scale and decision-making of the individual. Scale points are: 1 (Someone else), 2 (Me and Someone Else), and 3 (Me). Total scores for the scale range from a low of 90 to a high of 270 points. Sample questions are, “Who do you want to decide how you

spend your money?” and “Who do you want to decide what food you eat for supper?” (Abery et al., 2000).

Importance of Control Scale (Importance Scale): Adult Self-Report Edition.

This scale assesses how importantly an individual views a certain event occurring in his or her life (Abery & Stancliffe, 2003). The number of items and domains on this scale are identical to those in the Exercise of Control Scale and the Decision-Making Preference Scale. A 3-point scale is used: 1 (Not Very Much), 2 (Medium), and 3 (Very Much) point. Total scores range from the same low of 90 to a high of 270 points as the two scales described above (Abery et al., 2000).

Instrument 2: Measuring Self-Determination

The Arc’s Self-Determination Scale Adult Self-Report form (Wehmeyer & Kelchner, 1995). This 72- item scale assesses global self-determination of an individual. This scale is grouped into four domains: (a) autonomy, (b) self-regulation, (c) psychological empowerment and (d) self-realization. This scale uses varying point system of response. A 2-point scale (0-1) is used for the self-realization domain. A 4-point scale (0-3) is used for the autonomy and psychological empowerment domains. Simple sentences are used for self-regulation domain. Total scores range from a low of 0 to a high of 148 points.

Obtaining Adaptive Behavior Score as the Existing Data

The Korean version Social Maturity Scale was published by Kim & Kim (1998). The K- Social Maturity Scale is based on the original measure of the Vineland Social

Maturity Scale 5th (Doll, 1965). The K- Social Maturity Scale was normed with children and adults with and without disabilities (N=1.980) ranging in age from 0 to 30 years.

Back Translation

To establish translation accuracy of the MSDS into Korean, this study used the back translation technique (Brislin 1972, 1986). The purpose of this technique was to ensure equivalence on the scale between different cultures. The investigator of this study, who is fluent in both Korean and English, translated the MSDS into Korean. The first Korean translated version of the MSDS was reviewed by two translation checkers, doctoral students in English literature programs at the University of Minnesota, who are also fluent in both Korean and English. These checkers were asked to rate how well the items on the Korean version of the MSDS aligned to the criteria: (a) word- to- word correspondence between English and Korean, and (b) agreement of the content delivery from English to Korean. Reviewers rated the Korean translated items using a five point Likert scale: 100%=Very Well, 80%=Well, 60%=Good, 40%=Poor and 20%=Very Poor. The Korean translated items that received ratings equal or greater than 80% on both criteria were retained. However, those items that received ratings equal or lower than 60% on both criteria were discarded for later retranslations. The second Korean translated version was translated back into English by another doctoral student who is majoring in English Literature at the University of Minnesota. A comparison between the back translated and the original English translated versions was made. The comparison is listed in Appendix A. Disagreements in the comparison came from difference in syntax in both Korean and English measures.

Face validity of the second Korean version of the MSDS was rated by a Korean panel of three residential staff members serving individuals with intellectual disabilities. The panel members were asked to rate how well the translated Korean items correspond to institutional practices in group homes for adults with intellectual disabilities in South Korea. Nine culturally inappropriate items were identified by the panel and replaced with modified items applicable to Korean institutions serving individuals with intellectual disabilities.

These nine items were modified by the investigator with advice from a Korean professor with expertise in self-determination for individuals with disabilities. Modifications included replaced words without radical changes in the content. For example, a term of 'transition planning meeting' used in # 1,2,7,8, and 9 on the Plan domain of the MSDS was replaced with 'a personal discussion with peer or family member', because there is no transition planning meeting in South Korea. Terms of 'hiring the service staff' or 'paying the service staff' used in #7 and #8 on the Money domain of the MSDS were replaced with 'saving money for necessity and with 'buying something for the necessity' in the K-MSDS, because individuals who reside in the group homes and residential institution cannot hire or pay the service staff. Modifications in the second Korean translated version are provided in Appendix B. The second Korean translated version was pretested with five individuals with intellectual disabilities. Finally, the third Korean translated version was completed and used for this study. The translated items are comparable in Appendix A.

Procedures

The interviewers were recruited through the faculty at the college leveled-special education program. Interviews were conducted by six volunteer interviewers who attended an undergraduate special education program in South Korea. The interviewers were given a one-day training workshop to provide specific information and procedures regarding privacy, practices, and procedures for administering the measures used in the study. Each of the interviewers had an opportunity to practice the interviewing process through role playing and case studies. The interviewers had two discussion sessions with the investigator to check the process of data collecting activities.

The interviews were conducted in counseling rooms in the administration buildings of the group homes and at the residential institution that were easily accessible to the participants and interviewers. The identified settings were semi-private places, where each interview was conducted without interruption, with privacy and within visual supervisory range.

The interview schedules included three sessions on different days with agreement of the participants. The first session was scheduled for administering the K-SDS. Second and third sessions were scheduled for administering a test and re-test of K-MSDS. All participants, except one, attended all three sessions. Fidelity for administering measurement procedures was examined through the use of an interview checklist.

The MSDS and the K-SDS were completed through interviews with the adults. These interviews took approximately 2-3 hours to complete for the K-MSDS and 20 to 40

minutes for the K-SDS. In administering the K-MSDS, the participants were asked to respond to the questions either verbally or by pointing to the corresponding pictures. In administering the K-SDS, the participants were asked to respond to the question verbally. The participants' responses were recorded using a paper-pencil format. When the interviewer did not understand spoken language of the participants, the responses were recorded on the tape recorder and later were interpreted in assistance of a residential staff who knows spoken language of the participants well.

Individual's scores on the K- SMS (Kim & Kim, 1998) were recorded by the investigator from the existing data on file for each participant. These data are maintained in the offices of the group homes and of the residential institution.

DESIGN AND ANALYSIS

Design

This study used descriptive and correlation data. Descriptive data were obtained through review of the participants' files at the offices of the three group homes and the residential institution.

Research Question One, Test-retest reliability

Pearson's product- moment coefficients (Pearson's r) were computed between scores on the Preference, Importance, and Personal scales of the K-MSD at the first and second administrations. The time interval between those two administrations was approximately two weeks (Mean=14 days, SD=2 days). This analysis was conducted to investigate the degree to which the items on the three scales of K-MSDS show the stability between two different occasions.

Research Question Two, Internal consistency

Two types of psychometric estimates, Cronbach's coefficient α and item statistics (e.g., an item total correlation) were obtained for all items on the Preference, Importance, and Personal Control Scales. This analysis was conducted to examine the degree to which the items are homogeneous under the single domain construct.

Research Question Three, Concurrent criterion related validity

Pearson's product-moment coefficients (Pearson's r) were computed between scores on the three scales of K-MSDS and those on K-SDS. This analysis was conducted to explore the degree to which the two constructs are related.

Self-Determination Index Score

The Minnesota Self-Determination Index (S-D index) was developed based on the tripartite ecological model, which was expanded from an ecological model of self-determination (Abery & Stancliffe, 2003). In the construct, self-determination is measured as concordance between the three aspects of the model: 1) desired control, 2) exercised control, and 3) importance. The three scales of the MSDS, Preference, Importance, and Personal Control Scales scores were combined to yield single scores of the S-D index. The S-D index scores were calculated by the formula used in a thesis by Elkin (2007).

CHAPTER FOUR: RESULTS

Research Question One, Test-Retest Reliability

Test-retest reliability was determined by computing Pearson correlation coefficients (r) for the K-MSDS: Preference, Importance, and Personal Control. Test-retest intervals ranged from 12 days to 16 days (Mean=14 days, SD=2 days). Forty individual agreed to participate in the test-retest administrations. One participant was absent his retest administration due to illness. Data for the thirty nine individuals were analyzed for the test-retest administrations. Data for the forty individuals, including the one who missed his retest administration, were analyzed for the internal consistency and concurrent criterion-related validity.

The results showed a strong correlation between the two administrations for each of the three scales. Test-retest reliability coefficients were ($r=.943$) for the Preference, ($r=.899$) for the Importance and ($r=.842$) for the Personal Control Scales. All scale scores on the three scales were significant at the $p < .001$ levels (two tailed). Test-retest reliability analyses were also conducted for the domain scores. The results indicated that there were significant correlations between domain scores at the two administration points at the $p < .001$ levels (two tailed), except for two domains, Work domain, $r=.318$, and Staff domain, $r=.341$ on the Personal Control Scale. The correlation coefficient for the At Work domain was not significant at the $p < .001$ levels (two tailed). (See Table 8)

Table 8 Test-Retest Correlations of K-MSDS

Domain	Scales		
	Preference	Importance	Personal
	Pearson's <i>r</i>		
Home	.976**	.968**	.954**
Leisure	.845**	.617**	.784**
Friends	.618**	.597**	.684**
Health	.913**	.687**	.872**
At Work	.888**	.856**	.316
Plan	.847**	.879**	.773**
Money	.910**	.932**	.722**
Staff	.808**	.838**	.341
Total	.943**	.899**	.842**

** . Correlation is significant at the 0.01 level (2-tailed).

Note: Preference=Decision-Making Preference Scale; Importance=Importance of Control Scale;
Personal= Exercise of Control Scale as consisted of the K-MSDS.

Research Question Two, Internal Consistency Reliability

Table 9 Internal Consistency of K-MSDS

Domain	Scales		
	Preference	Importance	Personal
	Cronbach's α		
Home	.972	.955	.955
Leisure	.896	.858	.881
Friends	.898	.863	.891
Health	.975	.960	.926
At Work	.956	.948	.726
Plan	.960	.966	.878
Money	.975	.973	.724
Staff	.969	.968	.660
Total	.993	.991	.967

Note: Preference=Decision-Making Preference Scale; Importance=Importance of Control Scale; Personal=Exercise of Control Scale as consisted of the K-MSDS.

Internal consistency was analyzed for each of the Preference, Importance and Personal Scales using Cronbach's α (Cronbach, 1951). Coefficient alphas were strong for each of the three scales ranging from .967 to .993. Internal consistency was also analyzed for the domains within the three scales. Cronbach's α for each of the three scales and for the domains are provided in Table 9.

Table 10 contains both the item-total correlations and the internal consistencies of the nine modified items on each of the three scales. The nine culturally inappropriate items were identified by the panel and replaced with modified items applicable to Korean

institutions serving individuals with intellectual disabilities as stated in the Chapter Two, pages 32-33. Cronbach's α s for the domain within the three scales were stronger after replacing the nine unfit items with the modified items.

Research Question Three, Criterion-Related Concurrent Validity

Criterion-related concurrent validity of the K-MSDS was examined using K-SDS (Kim et al. 2003) as a criterion measure. Pearson correlations (Pearson's r) were computed between scores on the K-MSDS and on the K-SDS. (See Table 11)

Results indicated that scores on Preference, Importance, and Personal Control Scales (K-MSDS) were significantly correlated with scores on the K-SDS ($p < .001$, two-tailed). Preference Scale ($r=.509$), Importance Scale ($r=.514$) and Personal Control Scale ($r=.507$) were correlated with the K-SDS.

Scores on the K-MSDS were also significantly correlated with scores on the K-SDS (Kim & Kim 1998), an adaptive behavior scale ($p < .001$, two tailed). Preference ($r=.533$), Importance ($r=.518$) and Personal Control ($r=.528$) Scales were correlated with the K-SMS.

Table 10 Item –Statistics Original Items and Modified Items of K-MSDS

Domain	Item #	Scales (original items)			Scales (modified items)		
		Preference	Personal	Importance	Preference	Personal	Importance
				Corrected Item Total Correlations			
Plan	01	.242	.098	.054	.937	.714	.964
	02	.388	.385	.326	.945	.788	.971
	07	.594	.394	.859	.793	.624	.933
	08	.644	.627	.858	.779	.693	.851
	09	.678	.325	.782	.879	.235	.833
	α	.890	.810	.908	.960	.878	.966
Money	07	.376	.220	.345	.973	-.082	.977
	08	-.008	-.035	.054	.942	.443	.962
	α	.911	.671	.934	.975	.724	.973
Staff	01	-.232	-.045	-.146	.732	.724	.751
	02	.131	.149	.092	.822	.211	.814
	α	.899	.642	.767	.969	.660	.968

Note: Preference=Decision-Making Preference Scale; Importance=Importance of Control Scale;
 Personal= Exercise of Control Scale as consisted of the K-MSDS.

Table 11 Descriptive Statistics and Correlation Matrix for K-SDS and K-MSDS

Scales	Mean	SD	Preference	Importance	Personal	Index	SQ
K-Arc's SDS	82.125	14.96	.509**	.514**	.507**	.350	.683**
Preference	188.72	39.09	-	.979**	.921**	.772**	.533**
Importance	190.32	37.77		-	.920**	.775**	.518**
Personal	182.37	22.37			-	.769**	.528**
Index	326.12	43.86				-	.473**
SQ	41.18	21.40					

** . Correlation is significant at the 0.01 level (2-tailed).

Note: Preference=Decision-Making Preference Scale; Importance=Importance of Control Scale; Personal= Exercise of Control Scale as consisted of the K-MSDS. Index=the Minnesota Self-Determination Index Score. SQ=Social Quotient scores measured by the Korean Social Maturity Scale.

Pearson correlation coefficients (Pearson's r) were calculated between domains on the K-SDS: 1) autonomy, 2) psychological empowerment and 3) self-realization and the eight domains on the Preference Scale (See Table 12). Results indicated that the two domains of K-SDS: Autonomy and psychological empowerment were significantly correlated with the eight domains on the K-MSDS ($p < .001$, two tailed). In contrast, the self-realization domain on K-SDS was weakly correlated with those domains on Preference Scale ($p < .001$, two tailed). Pearson's coefficients between the autonomy and the domains on the Preference Scale ranged from $r=.513$ to $r=.660$ ($p < .001$, two tailed). Pearson's coefficients between the psychological empowerment and the domains on the Preference Scale ranged from, $r=.322$ to $r=.400$ ($p < .001$, two tailed). In contrast, those coefficients between the self-realization and the domains on the Preference Scale were lowest (e.g., $r=.108$ to $r=.285$ at the $p < .001$, two tailed).

Pearson correlation coefficients (Pearson's r) were calculated between the three domains on the K-SDS: 1) autonomy, 2) psychological empowerment and 3) self-realization and the eight domains on the Importance Scale (See Table13). There were significant correlations between the autonomy and the domains on the Importance Scale ranging from $r=.461$ to $r=.612$ ($p < .001$, two tailed). There were significant correlations between the psychological empowerment and the domains on the Importance Scale ranging from $r=.327$ to $r=.480$ ($p < .001$, two tailed). In contrast, there were no significant correlations between the self-realization and the domains on the Importance Scale, except for the friend domain ($r=.385$) on the Importance Scale ($p < .001$, two

tailed). The correlations between self-realization and domains on the Importance ranged from $r = .104$ to $r = .385$ ($p < .001$, two tailed).

Pearson correlation coefficients (Pearson's r) were calculated between the three domains on the K-SDS: 1) autonomy, 2) psychological empowerment and 3) self-realization and the eight domains on the Personal Control Scale (See Table 14).

There were significant correlations between the autonomy and the domains on the Personal Control Scale ranging from $r = .660$ to $r = .357$ ($p < .001$, two tailed) except for Work ($r = .031$) and Staff ($r = -.128$) domains. There were also found significant correlations between the psychological empowerment and the five domains on the Personal Control Scale ranging from $r = .327$ to $r = .480$ ($p < .001$, two tailed) except for Work ($r = .031$), Money ($r = .314$), and Staff ($r = -.128$) domains. In contrast, there were no significant correlations between the self-realization and the domains on the Personal Control Scale. The correlations between self-realization and domains on the Personal Control Scale ranged from $r = -.032$ to $r = .296$ ($p < .001$, two tailed).

Summary of the Results

Strong test-retest reliability was evident for the three scales K-MSDS with coefficients of $r = .944$ for the Preference, $r = .901$ for the Importance, and $r = .838$ for the Personal Control Scales. Test-retest reliability for domain scores within the three scales varied from .319 to .976. The estimates were particularly low for the At Work ($r = .318$) and for the Staff ($r = .341$) domains on Personal Control Scale.

Strong internal consistency for the three scales and the domains within the scales was found. Internal consistency ranged from .993 to .991 for Preference, Importance and Personal Control Scales.

K-SDS was predictive of K-MSDS. There were strong correlations between the K-SDS and the K-MSDS. The K-SDS was correlated with the Preference ($r=.509$), the Importance ($r=.514$) and the Personal Control ($r=.507$) Scales.

Table 12 Descriptive Statistics and Correlations for the sub-scales on K-SDS and for the domains on Preference Scale

Subscales	Mean	SD	2	3	4.1	5.2	6.3	7.4	8.5	9.6	10.7	11.8
1. AUT (K-SDS)	53.22	10.55	.511**	.660**	.612**	.599**	.598**	.600**	.552**	.559**	.519**	.513**
2. PSYE (K-SDS)	3.25	1.03	-	.502**	.339*	.405**	.442**	.400**	.322	.449**	.358	.389**
3. SREA (K-SDS)	25.65	5.02		-	.194	.206	.285	.167	.140	.157	.108	.120
4. Home (K-MSDS 1)	39.77	8.08			-	.923**	.859**	.897**	.884**	.943**	.954**	.935**
5. Leisure (K-MSDS2)	23.15	3.77				-	.905**	.829**	.845**	.910**	.892**	.916**
6. Friend (K-MSDS3)	23.30	4.21					-	.743**	.756**	.840**	.806**	.815**
7. Health (K-MSDS 4)	21.72	4.39						-	.911**	.926**	.919**	.888**
8. Work (K-MSDS 5)	21.00	4.63							-	.868**	.856**	.860**
9. Plan (K-MSDS 6)	20.20	5.25								-	.977**	.957**
10. Money (K-MSDS7)	17.65	6.29									-	.963**
11. Staff (K-MSDS 8)	21.95	4.38										-

** . Correlation is significant at the 0.01 level (2-tailed).

Note: AUT=autonomy; PSYE=psychological empowerment; SREA=self-realization as measured by K-SDS.

Table 13 Descriptive Statistics and Correlations for the sub-scales on K-SDS and for the domains on Importance Scale

Subscales	Mean	SD	2	3	4.1	5.2	6.3	7.4	8.5	9.6	10.7	11.8
1. AUT (K-SDS)	53.22	10.55	.511**	.660**	.568**	.561**	.622**	.619**	.461**	.525**	.588**	.475**
2. PSYE (K-SDS)	3.25	1.03	-	.502**	.327*	.409**	.481**	.440**	.403**	.440**	.426**	.422**
3. SREA (K-SDS)	25.65	5.02		-	.151	.175	.386**	.261	.152	.213	.229	.104
4. Home (K-MSDS 1)	39.67	6.92			-	.832**	.734**	.926**	.925**	.912**	.933**	.860**
5. Leisure (K-MSDS 2)	22.97	3.48				-	.781**	.839**	.843**	.884**	.870**	.869**
6. Friend (K-MSDS 3)	23.27	3.73					-	.697**	.731**	.732**	.735**	.707**
7. Health (K-MSDS 4)	22.30	4.46						-	.922**	.941**	.962**	.895**
8. Work (K-MSDS 5)	21.25	4.05							-	.943**	.957**	.911**
9. Plan (K-MSDS 6)	20.75	5.51								-	.974**	.953**
10. Money (K-MSDS 7)	18.25	6.61									-	.936**
11. Staff (K-MSDS 8)	21.87	5.14										-

** . Correlation is significant at the 0.01 level (2-tailed).

Note : AUT=autonomy; PSYE=psychological empowerment; SREA=self-realization as measured by K-SDS.

Table 14 Descriptive Statistics and Correlations for the sub-scales on K-SDS and for the domains on Personal Scale

Subscales	Mean	SD	2	3	4.1	5.2	6.3	7.4	8.5	9.6	10.7	11.8
1. AUT (K-SDS)	53.22	10.55	.511**	.660**	.626**	.603**	.594**	.578**	.031	.357	.398	-.128
2. PSYE (K-SDS)	3.25	1.03	-	.502**	.414**	.358	.382**	.268	.184	.484**	.314	-.231
3. SREA (K-SDS)	25.65	5.02		-	.244	.187	.296	.260	-.032	.189	.206	-.269
4. Home (K-MSDS 1)	39.90	7.02			-	.884**	.807**	.820**	.250	.663**	.513**	-.132
5. Leisure (K-MSDS 2)	23.00	3.60				-	.822**	.707**	.228	.572**	.488**	.112
6. Friend (K-MSDS 3)	23.42	4.08					-	.717**	.304	.652**	.617**	.108
7. Health (K-MSDS 4)	21.25	3.28						-	.355	.729**	.628**	-.025
8. Work (K-MSDS 5)	18.22	2.80							-	.629**	.672**	.150
9. Plan (K-MSDS 6)	18.27	3.35								-	.778**	-.103
10. Money (K-MSDS 7)	19.67	2.47									-	.109
11. Staff (K-MSDS 8)	18.62	2.28										

** . Correlation is significant at the 0.01 level (2-tailed).

Note : AUT=autonomy; PSYE=psychological empowerment; SREA=self-realization as measured by K-SDS.

CHAPTER FIVE: DISCUSSION

The purpose of this study was to determine the technical adequacy of a Korean translated version of the Minnesota Self-Determination Scales. A total of forty individuals with intellectual disabilities residing in South Korea participated in the study. The study included: 1) translation and back translation of the K-MSDS, 2) administration of the translated measure, 3) analysis of data obtained from administration of the K-MSDS, and 4) analysis of demographic and adaptive behavior data. These data were analyzed through correlation statistical procedures and used to answer the following research questions:

Research question 1: Does the K-MSDS yield adequate test-retest reliability correlations when administered to a selected sample of adults in three Korean group homes and a residential institution at two different points in time?

Research question 2: Does the K-MSDS yield acceptable internal consistency coefficients when administered to a selected sample of adults in three Korean group homes and a residential institution?

Research question 3: As a means of establishing criterion-related validity of the K-MSDS,

- a. do the total scores on the three scales of the K-MSDS yield adequate correlations with the total scores on the K-Arc's SDS (K-SDS) with a sample of adults in three Korean group homes and a residential institution?
- b. do scores on the eight domains of the K-MSDS yield adequate correlations with scores on the four domains of the K-SDS with a sample of adults in

three Korean group homes and a residential institution?

- c. do the Index scores from the K-MSDS yield adequate correlations with the total scores on the K-SDS with a sample of adults in three Korean group homes and a residential institution?

Research Question One, Test-Retest Reliability

The K-MSDS showed strong test-retest reliability estimates over a two week interval. The test-retest reliability ranged from $r=.842$ to $r=.943$ across the Preference, Importance and Personal Control Scales. These reliability coefficients were stronger than the reliability coefficients of the MSDS reported by Elkin (2007) which ranged from $r=.74$ to $r=.87$ (Elkin, 2007).

The test-retest reliability results for domain scores within the three scales varied from .319 to .976. The test-rest reliability coefficients were particularly low for the At Work domain ($r=.316$) and for the Staff domain ($r=.341$) on the Personal Control Scale. The Personal Control Scale assesses the amount of control an individual exercises over his or her real life. One possible explanation for these low coefficients is the non-responses of the participants in the first administration of the At Work and the Staff domains. The At Work domain includes items to assess an individual's decisions regarding preferred types of work, requesting paid vacation and making choices in transportation to work sites. A few items were unanswered due to the respondent's inability to understand the terms used for the At Work domain (i.e., paid vacation, transportation, preferred type of work). The participants have had limited opportunities to use paid vacation and transportation and to make choices of the preferred types of work.

The participants may have had difficulties responding to items regarding the quality of staff service because of cultural differences. Assessing the quality of service may be interpreted as distrust of the staff in the Korean culture. Some participants may have been reluctant to express their individual opinions even after assuring them respondent of confidentiality.

The second explanation for these low coefficients is that the participants may have experienced fatigue in responding to the questions. The retest administration of the Personal Control Scale was administered at the end of the interview sessions for the study. Participants were enthusiastic in responding to the questionnaires in the early interviews. However, they became less enthusiastic as the interviews were repeated. For example, there was no consistency for the At Work domain within the three scales. The estimates were high for At Work ($r = .888$) on the Preference Scale and for At Work ($r = .856$) on the Importance Scale. In contrast, those estimates were low for At Work ($r = .318$) on the Personal Control Scale.

Research Question Two, Internal Consistency Reliability

K-MSDS showed adequate internal consistency ranging from .991 to .993 for Preference, Importance and Personal Control Scales. Internal consistency coefficients were also higher for domains within the three scales, except for the Staff domain ($\alpha = .660$) and the At Work domain ($\alpha = .726$) on Personal Control Scale. These findings of high internal consistency for the K-MSDS were consistent with high internal consistency for the MSDS administered by Elkin (2007) which ranged from .88 to .92 for three scales.

Internal consistency assesses item relatedness among a set of items. A concern for the use of the coefficient is that as the number of items increase, Cronbach's α tends to inflate (Netemeyer et al., 2003). The number of items on each of the three scales is 90. It is difficult to estimated if the high internal consistency ($\alpha = .991$ to $.993$) for each of the three scales was influenced by a high number of items ($N=90$) within the current study.

K-SDS showed low internal consistency in the Self-regulation domain (e.g., Cronbach's $\alpha=.020$) and high internal consistency in the domains of autonomy, self-realization, and psychological empowerment. Self-regulation used open-ended responses. Scoring for the open-ended responses may vary by scorer's interpretations and an individual's responses. Wehmeyer (1996b) excluded the self-regulation from the calculation for internal consistency of the SDS in his studies. In this study, the self-regulation was excluded from the criterion validity-related analyses for the K-MSDS.

Research Question Three, Criterion-Related Concurrent Validity

In this study, the K-SDS was used as the criterion for measuring the concurrent criterion related validity with the K-MSDS. Both measures use different theoretical perspectives. The K-MSDS was translated based on an ecological theory of self-determination (Abery, 1996) by the investigator for the study. The K-SDS is a published measure incorporating a functional theory of self-determination (Wehmeyer, 1996b). These two measures of self-determination provide different theoretical perspectives, therefore the criterion-related concurrent validity was anticipated as related, but not particularly high.

As a whole, the K-SDS scores were predictive of the K-MSDS scores as a criterion measure. The Preference Scale ($r=.509$), Importance Scale ($r=.514$) and Personal Control Scale ($r=.507$) were moderately correlated with the K-SDS. The S-D index scores ($r=.350$), however, were mildly correlated with the K-SDS.

Autonomy and psychological empowerment, the two domains on the K-SDS, were strongly predictive of the domains on the three scales of the K-MSDS. It is estimated that the autonomy, psychological empowerment and the domains on the K-MSDS share common aspects of self-determination. A possible explanation is that the construct of autonomy on the K-SDS and the construct of exosystem of the ecological perspective commonly acknowledge the interdependence of family, friends, or teachers in enhancing self-determination of an individual.

In contrast, the self-realization on the K-SDS was weakly predictive of the eight domains on the three scales. Correlations between the domains on both scales ranged from 0 to .20. It was estimated that the self-realization domain on the K-SDS and domains on the K-MSDS measure different aspects of self-determination. The correlations are generally interpreted as strong (i.e., $< .80$), medium (i.e., $< .50$), and weak (i.e., $< .20$). The weak correlation indicates that there is no or minimal relation between the two measures.

Both the K-MSDS and the K-SDS scores were correlated with adaptive behavior as measured by the K-SMS scores (Kim & Kim, 1998). The K-MSDS ($r=.518$ to $.533$) and K-SDS ($r=.683$) scores were positively correlated with scores on the K-SMS. These results validated the previous study by Abery, Rudrud, & Arndt, (1995) indicating that

adaptive behavior were closely related to self-determination for individuals with intellectual disabilities (e.g., $r = .86$ to $.89$). There were few studies to clarify the relationship between self-determination and adaptive behavior. Weller, Watteyne and Herbert (1994) explained that adaptive behavior and self-determination may share common characteristics such as making choices without any force, reflecting individual's interests, and modifying the environments through judgment and perceptions when the individual encounters new environments.

Limitations of the study

Even though the validity of K-MSDS was established through correlations between the scores on the K-MSDS and the K-SDS in this study, it is commonly recommended to use an exploratory factor analysis for examining constructs emerging in the theoretically based-measures during the initial stage of scale development (Netemeyer et al., 2003). This study did not examine validity through the exploratory factor analysis. This study didn't validate the constructs identified within the three scales of the MSDS.

The study used a convenient sample consisting of 40 adult individuals. Participants voluntarily participated in the study. The sample was not representative of the entire sample of individuals with intellectual disabilities in South Korea. The interpretation of the results should be restricted to this study. Generalization to other populations cannot be made. Future studies to examine the technical adequacy of the K-MSDS should extend participants to a larger sample of individuals who have a variety of residential types, age ranges and intellectual disabilities.

The K-SDS, adolescent form was used as the criterion measure. There is no measure to assess self-determination of adults in South Korea. Even though there is considerable similarity between the Arc's SDS, adolescent and adult forms (Wehmeyer, 1995), there is no Korean study to support the similarity between both adolescent and adult forms of the K-SDS. The use of the adolescent form was a limitation of the study.

The study used relatively long interview protocols with individuals with intellectual disabilities. Participants became less enthusiastic in the interviews as time progressed. It was estimated that the low enthusiasm of the participants influenced the results of the study. A shorter interview period may increase the test-rest reliability.

Implications for future studies

Self-determination measures are used for developing, implementing and evaluating the effect of self-determination interventions as stated by Shogren et al (2008). There is no self-determination intervention program for Korean adults. Future studies will include the development of intervention programs for enhancing self-determination of adults. The data from the current study can be used as a source for identifying the needs of individuals who are placed in Korean group homes and residential institutions as well as for designing and implementing intervention programs.

Future studies should include the administration of the K-MSDS combined with the Environment Scale (Abery, Smith, Stancliffe, & Elkin, 2000). The purpose of the Environment scale is to identify environmental features in which the individuals live and was developed for use in combination with one of the Minnesota Self-determination Scales. This scale was not included. The uses of the Environment scale will provide

individualized information of the individuals and what environmental features enhance self-determination of the individual.

Future studies will include the exploratory factor analysis, given the availability of larger sample population. This methodological approach will be more effective for detecting factor structure and relationships among the factors within the theoretically based- measures (i.e., the K-MSDS, K-SDS).

Future studies will include the development of a short form of the K-MSDS that differs in the number of items and length of administration of the K-MSDS. The K-MSDS includes 270 items and requires approximately three hours to be completed. Administration of the K-MSDS may reflect respondent's fatigue and reduction in cooperation particularly among individuals who have significant intellectual and physical disabilities. A shorter form of the K-MSDS that includes stronger outcome indicators of self-determination may yield greater functional application as well as technical adequacy. Additional areas that may be included in future research studies include factors related to cultural bias as well application of the measure to determine the need for and effectiveness of interventions.

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Appendix A

Samples of Comparisons of the Original items and Back Translated items

Samples of Content Comparison between the Original English statement (A), Back-Translated English statement (B) and Comments (C)

Decision-Making Preference Scale Items: Self-Report Edition

Who do you want to decide... (me, me and someone else, someone else)

I. At Home

1-(A) how your hair is cut?

1-(B) how to cut your hair?

1-(C) the two sentences are almost identical

2-(A) how you spend your money?

2-(B) how to spend your money?

2-(C) the two sentences are almost identical

3-(A) if you buy something that costs a lot of money, like over \$50 (e.g., stereo, nice dress clothes)?

3-(B) When you are spending a large amount of money (over \$50) to purchase something? (e.g., stereo, nice dress clothes)?

3-(C) the two sentences are basically equivalent in delivery the content

II. Recreation, Leisure and Community

1-(A) what shows you watch on T.V.?

1-(B) what TV show you will watch?

1-(C) the two sentences are almost identical

2-(A) what movies you see?

2-(B) what movie you will watch?

2-(C) the two sentences are almost identical

3-(A) what you do for fun AT HOME (e.g., listen to music, play a game)?

3-(B) what to do for fun? AT HOME (e.g., listen to music, play a game)?

3-(C) the two sentences are identical

III. With Friends

1-(A) who your friends are?

1-(B) who your friends are?

1-(C) the two sentences are equivalent

2-(A) what you do with your friends when you go out?

2-(B) what to do when you go out with your friends?

2-(C) the two sentences are basically equivalent l

3-(A) if you and your friends can go out without staff or parents?

3-(B) if you go out only with your friend?

3-(C) the two sentences are basically equivalent

IV. When Caring for Health

- 1-(A) when you take over-the-counter medicine (e.g., Tylenol, cold medicine)?
- 1-(B) when you take over-the-counter medicine (e.g., painkiller, cold medicine, etc.)
- 1-(C) the two sentences are basically identical.
- 2-(A) if you stay home from your work/day program or school when you are too sick to go?
- 2-(B) if you get a day off (work or school) when you are really sick?
- 2-(C) the two sentences are basically equivalent
- 3-(A) if you see your doctor when you are sick or hurt?
- 3-(B) if you go to see a doctor when you are sick or get injured?
- 3-(C) the two sentences are basically equivalent

V. At Work/Day Program

- 1-(A) what type of work you do (e.g., preparing food, cleaning, gardening)?
- 1-(B) what type of work to do?
- 1-(C) the two sentences are basically equivalent
- 2-(A) if you learn new tasks at work?
- 2-(B) Whether you learn a new technique or not?
- 2-(C) the two sentences may have different meanings, because a word of 'task' can be translated to a Korean word '일 (IL)', which has the broad meaning, including a part of meaning 'technique'
- 3-(A) if you take a vacation from your work/day program?
- 3-(B) Whether you get a vacation at work or not?
- 3-(C) the two sentences are basically equivalent
-

VI. Making Plans and Setting Goals

- 1-(A) which people attend the meeting?
- 1-(B) whom do you want to discuss your dream or life goals
- 1-(C) There is no transitional plan meeting to discuss individual's dreams or goals in South Korea
- 2-(A) who leads the meeting?
- 2-(B) who initiates the discussion
- 2-(C) There is no transitional plan meeting to discuss individual's dreams or goals in South Korea
- 3-(A) what your big goals or dreams are?
- 3-(B) what your goals or dreams are?
- 3-(C) the two sentences are identical

VII. Support Money

- 1-(A) what type of supports you receive from staff?
- 1-(B) what type of supports you need to get from the staffs?
- 1-(C) the two sentences are basically equivalent

2-(A) how much staff supports you in certain activities (e.g., support in an exercise program or in attending community events)?

2-(B) to what extent you need to be helped by the supporting staffs?

2-(C) the two sentences are basically equivalent, but the back translated sentence is unnatural.

3-(A) when you get more supports or have supports taken away?

3-(B) when you need more or less supports from the staffs than usual?

~~3-(C) the two sentences are basically equivalent, although other words were added~~

VIII. Support Staff

1-(A) if your staff is doing a good job?

1-(B) if your staff benefits your life at home?

1-(C) it is very seldom for the individuals to assess the service quality of their staff in Korean institutions

2-(A) what to do when your staff is NOT doing a good job?

2-(B) whether you are satisfied with staff's support?

2-(C) It is very seldom for the individuals to assess the service quality of their staff in Korean institutions

3-(A) when staff help or support you at home (e.g., with cooking or getting ready for work)?

3-(B) When you need help from the supporting staff at home?

3-(C) the two sentences are basically equivalent

Appendix B

Comparisons of the original items and the modified items

A list of Content Comparison between the Original statement (A), Modified statement (B) and comments (C)

Domain	Item#	Content
Plan	01	A. Who do you want to decide which people attend the meeting?
		B. Who do you want to decide whom do you want to discuss your dream or life goals
		C. There is no transitional plan meeting to discuss individual's dreams or goals in South Korea
Plan	02	A. Who do you want to decide who leads the meeting?
		B. Who do you want to decide who leads the discussion about your dream or life goals?
		C. There is no transitional plan meeting in South Korea
Plan	07	A. Who do you want to decide if you have meetings to discuss your big goals and dreams?.
		B. Who do you want to decide if your discussion about your life goals and dreams with parents or teacher is good at you?
		C. There is no transitional plan meeting in South Korea
Plan	08	A. Who do you want to decide if you have meetings to discuss the little things you work on?
		B. Who do you want to decide if your discussion about the little things you work on is necessary?
		C. There is no transitional plan meeting in South Korea
Plan	09	A. Who do you want to decide if you attend the meeting?
		B. Who do you want to decide if your discussion with parents or staff is necessary?
		C. There is no transitional plan meeting in South Korea
Staff	07	A. Who do you want to decide to hire the staff members that work with you at home?
		B. Who do you want to save money for something necessary for you at home?
		C. It is impossible for the individuals to hire the staff in Korean institutions
Staff	08	A. Who do you want to decide how much your staff is paid?
		B. Who do you want to buy something necessary for you at home?
		C. It is impossible for the individuals to hire or to pay for service providers in Korean institutions.
Staff	01	A. Who do you want to decide if your staff is doing a good job?
		B. Who do you want to decide if your staff benefits your life at home?
		C. It is very seldom for the individuals to assess the service quality of their staff in Korean institutions.
Staff	02	A. Who do you want to decide what to do when your staff is NOT doing a good job?
		B. Who do you want to decide whether you are satisfied with staff's support?
		C. It is very seldom for the individuals to assess the service quality of their staff in Korean institutions

Appendix C

Research Support Consent Form (Guardians)

Title: A validation study of scores on a Korean Version of the Minnesota Self-Determination Scales for Adults with Significant Intellectual disabilities

I am a student in special education at the University of Minnesota. I am interested in developing a Korean version of the Minnesota Self-Determination Scales. The original version of the Minnesota Self-Determination Scales was developed to measure self-determination for American adults with significant intellectual disabilities. However, the number of self-determination measures to coincide with Korean linguistic and culture practices is limited. The purpose of this study is to learn more about a Korean version of the MSDS for a sample of Korean adults with intellectual disabilities in South Korea.

You, [\[name of a guardian or group home for the individuals with significant intellectual disabilities\]](#), are being asked to support this study in terms of conducting interviews with adults with intellectual disabilities .

Background information

Everyone wants to feel "in control" of their life. People who are "in control" of their life are able to make good decisions and choices. When an individual make his/ her' own decisions, it is called *self-determination*. It is assumed that self-determined for persons with disabilities is closely associated with positive adult outcomes.

Procedures

If you agree to participate in this study, we will ask orally whether each resident (individuals for whom you are responsible) also wants to participate in this study. We will provide a consent document form before the interviews. After agreements with you and the resident, we will interview the residents with intellectual disabilities in your institution to obtain the following information.

During the interviews, we will ask questions about: 1) How much an individual views a certain event occurring as important in his or her life?, 2) How an individual would like to make decisions over his or her life? and 3) How often an individual makes decisions over his or her life?

Sample questions are: 1) "How much do you care about deciding a menu for your dinner or deciding how your hair is cut", 2) "Who do you want to decide how you spend your money?" or "Who do you want to decide what food you eat for supper?" 3) "Who decides how you spend your money?" or "Who chooses what food you eat for supper?"

Ethical Concerns

Participation of your institution and residents is voluntary. All data will be treated as an anonymous, that is no name and decodable ID will be included in the data collected. Your institution is among those entities with which relations will be unaffected by choices whether or not to participate in this study or terminate the participation will not affect your current or future

relations with the University of Minnesota or the principal investigator. Any participants are free to withdraw at any time without affecting those relationships.

Contacts and Questions

The researcher conducting this study is Jaehyun Cho. If any participants have questions, you can contact me as follows:

Jaehyun Cho
Special Education Doctoral Program
The University of Minnesota
250 Education Sciences Building
56 East River Road
Minneapolis, MN
55455-0364 USA
Cell Phone: (612) 387-0233
Emails: chox0137@umn.edu (English) or saehim1@gmail.com (Korean)

Or you may contact my advisor, Dr. Susan Rose at (612)624-6378, srose@umn.edu at 245 Educational Science Building, 56 East River Road, University of Minnesota, MN 55455 U.S.A.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher or the advisor, **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455 USA; (612) 625-1650.

You may keep a copy of this form for your records.

Research Support Assent Form (Legal guardians)

Statement of Consent

I have read the above information. I have asked and have received answers

() **Yes**, I consent to allow my residents to participate in the study.

() **No**, I don't consent to allow my residents to participate in the study.

Name of Institution: _____

Title: _____

Name: _____

Appendix D

Korean Research Support Consent Form (Guardians)

연구 지원 동의서 양식 (법적 후견인용)

제목: 정신지체 성인을 대상으로한 한국판 미네소타 자기결정 검사 점수의 타당성 연구

저는 미국 미네소타 주립 대학교에서 특수교육을 전공하고 있는 학생입니다. 제 관심 분야는 한국판 미네소타 자기결정 평가 도구를 개발하는 것입니다. 미네소타 자기결정 평가 도구는 미국에 있는 정신지체인들의 자기결정을 평가하기 위해 개발된 도구입니다. 현재 한국의 언어 및 문화 특성에 맞는 자기결정 평가도구는 많지 않습니다. 이 연구의 목적은 한국에 있는 정신지체인 표본을 대상으로 한국판 미네소타 자기결정 도구를 시행에 대한 자료를 얻는데 있습니다

귀하께서 [정신지체인들을 위한 그룹홈 또는 시설명] 제 연구 참여에 적합한 대상인들(생활인들)이 제 연구에 참여할 수 있도록 도와 (모집해) 주실 것을 요청합니다.

연구 배경

모든 사람들은 자기 생활을 통제하기 바랍니다. 자기 생활을 통제할 수 있다는 것은 자기에게 유익한 결정이나 선택을 스스로 할 수 있다는 점을 의미합니다. 한 개인이 자신에게 필요한 어떤 결정을 스스로 내리는 행위를 “자기결정”이라고 말합니다. 장애인들의 자기결정은 바람직한 전환성과 밀접한 관련을 갖는 것으로 여겨집니다.

연구 절차

만일 귀 기관께서 이 연구에 참여하기로 동의해 주시면, 저 또는 저의 연구팀원은 귀 기관의 생활인들이 역시 이 연구에 참여하기를 원하는지 여부를 구두로 물을 것입니다. 저희는 인터뷰 전에 연구 참여 동의서를 귀하와 생활인들에게 전달할 것입니다. 귀하와 생활인들의 동의를 얻은 후 저희는 다음과 같은 내용의 자료를 얻고자 귀 기관의 생활인들을 대상으로 인터뷰를 할 것입니다.

인터뷰에는 다음과 같은 질문내용이 포함될 것입니다. 1) 한 개인이 그 자신의 생활 속에서 어떤 일이 얼마나 자신에게 중요하다고 여기는지? 2) 그것들에 대해 어느 정도로 의사결정을 내리고 싶어하는지? 그리고 3) 그것들에 대해 얼마나 자주 실제 의사결정에 참여하는지를 묻는 내용입니다. 이러한 질문들에 대한 샘플 문항들은 다음과 같습니다

1) “머리를 다듬기로 결정하거나 식당에서 음식을 고르는 것이 당신에게 얼마나 중요한 일들이라고 생각하는지?”, 2) “당신이 가진 돈을 어떻게 쓸지 또는 저녁으로 어떤 음식을 먹을지에 대해 누가 결정해 주기 원하는지?”, 3) “당신이 가진 돈을 어떻게 쓸지 또는 저녁으로 어떤 음식을 먹을지에 대해 실제 누가 가장 많은 결정권을 가지고 있는지?”

연구윤리수칙 준수

본 연구에 대한 귀하 그리고 귀 기관 소속 생활인의 참여는 자발적 입니다. 연구에서 얻어진 모든 자료는 익명으로 다루어질 것이며 어떤 이름이나 해독 가능한 일련번호도 포함되지 않을 것입니다. 연구 참여에 대한 귀하 그리고 생활인의 결정은 그들의 참여 여부 또는 연구 도중 참여 철회 여부가 본 연구의 제 1 연구자인 저나 제가 소속되어 있는 미네소타 주립대학교 간의 관계에 현재나 혹은 미래에 아무런 영향을 미치지 않을 것입니다. 누구든 자신의 의지에 따라 이 연구의 사전 혹은 시행 중에도 연구참여를 철회할 수 있습니다..

연락처와 문의사항

이 연구의 시행자는 조재현 입니다. 만일 참여자께서 본 연구에 대해 의문점이 있으시면 아래의주소로 연락 주십시오

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또는 아래의 주소로 제 지도교수님께 연락 주십시오:

Dr. Susan Rose at 1-(612)624-6378, srose@umn.edu at 245 Educational Science Building, 56 East River Road, University of Minnesota, MN 55455 U.S.A.

만일 여러분이 이 연구와 관련하여 질문이나 우려하는 바가 있으나 이것들에 대해 연구자나 지도교수 외의 다른 사람에게 이야기 하고 싶으시면 미네소타 주립대학의 연구자 보호 위원회인 아래의 주소로 연락하실 수 있습니다

연구자 보호 위원회

The Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455 USA; (612) 625-1650.

이 양식의 복사본은 이후 기록을 위해 당신이 보관할 수 있습니다.

연구 지원 동의서 양식 (법적 후견인용)

본인의 위의 문건에 표현된 내용을 읽고 궁금한 점에 대해 질문을 한후 그것에 대한 답변을 받았습니다.

-동의서 내용-

() 예, 나는 이 연구에 참여하기 원합니다

() 아니오, 나는 이 연구에 참여하기 원하지 않습니다 .

기관명 : _____

직위:

성명: _____

Research Support Consent Form (Residents)

Title: A validation study of scores on a Korean Version of the Minnesota Self-Determination Scales for Adults with Significant Intellectual disabilities

I am a student in special education at the University of Minnesota. I am interested in developing a Korean Self-Determination Scale. There is no measure for self-determination for Korean people.

I would like to ask whether you, [name of resident in an institution or group home for the individuals with significant intellectual disabilities], if want to participate in this study.

Why is self-determination?

The purpose of this study is to learn more about you and your choices for your work and daily life. Everyone wants to make decisions over their life and to feel happy with their decisions. When you make your' own decisions and feel happy with those decisions, it is called *self-determination*. We think that a person who makes decisions over his or her life, feels "happy" with his or her life.

What to do?

A person will ask you some questions. After listening to or maybe reading the questions, they will ask you for your opinions. If you want to participate in this study, please say "OK", but, If you don't like to participate in this study, please say "no"

If you say "OK", we will ask you many questions such as:

1) "How much do you care about deciding cutting your hair or a menu of your dinner", 2) "Who do you want to decide how you spend your money?" and "Who do you want to decide what food you eat for supper?" and 3) "Who decides how you spend your money?" and "Who chooses what food you eat for supper?"

Concerns

You can say "stop" any time when you dislike the questions in this study. What you talk to us in the interview we will be telling no one. Your name and ID will be kept as "unknown". If you don't want to participate in this study, it is OK.

Contacts and Questions

If you have questions before or anytime of the interview, you can ask me as follows:

Jaehyun Cho
 Special Education Doctoral Program
 The University of Minnesota
 56 East River Road
 Minneapolis, MN55455-0364 USA
 Cell Phone: (651) 917-0871
 Emails: chox0137@umn.edu (English) or saehim1@gmail.com (Korean)

Or you may ask my advisor, Dr. Susan Rose at (612)624-6378, srose@umn.edu at 245 Educational Science Building, 56 East River Road, University of Minnesota, MN 55455 U.S.A.

If you have any questions or concerns regarding this study and would like to talk to someone other than me or my advisor, **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455 USA; (612) 625-1650.

You may keep a copy of this form for your records.

Research Support Assent Form (Residents)

This statement will be communicated orally in Korean with an individual with intellectual disability through a reading by a member of our research team

Statement of Consent

() **Yes**, I want to participate in the study

() **No**, I don't want to participate in the study.

Name of Institution: _____

ID,(No sign): _____

Korean Research Support Consent Form (Residents)

연구 지원 동의서 양식 (시설 생활인용)

제목: 정신지체 성인을 대상으로한 한국판 미네소타 자기결정 검사 점수의 타당성 연구

저는 미국 미네소타 주립대학교 특수교육과에 다니는 학생입니다. 저는 한국에서 사용될 자기결정 검사도구를 만들려 합니다. 한국에는 아직 성인들에게 사용될 자기결정 검사도구가 없기 때문입니다.

저는 당신[정신지체인을 위한 시설과 그룹홈의 생활인]에게 이 연구에 참여할 마음이 있는지 묻고 싶습니다.

자기결정이 중요한 이유?

이 연구의 목적은 당신의 일터와 일상 생활 속에서 당신 자신과 당신이 하게 되는 크고 작은 선택행동에 대해 더욱 많이 알고자 하는데 있습니다. 모든 사람들은 자기 생활의 크고 작은 일들에 대해 결정을 내리기 바라고 그것으로 말미암아 기쁨을 느끼고 싶어 합니다. 당신이 어떤 결정을 내리고 그것을 통해 기쁨을 느끼게 되었을 때 우리는 “자기결정”을 사용했다 라고 말합니다. 자기 생활의 일들에 대해 스스로 결정을 내릴 수 있는 사람만이 그 결과가 가져오는 기쁨도 누릴 수 있다고 우리는 생각합니다.

무엇을 해야할까 ?

우리 연구팀 가운데 한 명이 당신에게 몇 가지 질문을 할 것입니다. 그 질문들은 연구원의 말을 통해서 당신에게 전달될 것입니다. 그 말을 잘 들은 후 당신의 의견을 말하면 됩니다. 만약 당신이 이 연구에 참여하기 원한다면 “좋아요” 라고 말하면 됩니다. 하지만 이 연구에 참여하고 싶지 않을 때는 “싫어요” 라고 말하면 됩니다.

만약 당신이 “좋아요”라고 대답한다면 우리는 다음과 같은 질문들을 당신께 물을 것입니다:

- 1) “머리를 다듬기로 결정하거나 식당에서 음식을 고르는 것이 당신에게 얼마나 중요한 일들이라고 생각하는지?”, 2) “당신이 가진 돈을 어떻게 쓸지 또는 저녁으로 어떤 음식을 먹을지에 대해 누가 결정해 주기 원하는지?”, 3) “당신이 가진 돈을

어떻게 쓸지 또는 저녁으로 어떤 음식을 먹을지에 대해 실제 누가 가장 많은 결정권을 가지고 있는지?”

걱정 할 수 있는 일들

당신이 이 연구의 질문에 참여하고 싶지 않을 때는 언제든지 “그만둘” 수 있습니다. 당신이 인터뷰를 통해 우리에게 말하는 모든 내용은 비밀로 지켜 질 것입니다. 당신의 이름이나 참여자 일련 번호도 알려지지 않을 것입니다. 만약 당신이 이 연구에 참여하고 싶지 않기로 결정한다 해도 또는 연구 도중에 인터뷰 참여를 그만두기로 결정한다해도 이 모든 결정은 지나 제가 다니는 학교나 당신이 생활하고 있는 시설에 어떤 나쁜 영향을 끼치지 않습니다. 당신의 연구 참여 여부 또는 연구 도중에 인터뷰를 중단하기로 결정을 하더라도 이것은 지나 제가 속한 학교 또는 당신이 생활하고 있는 시설 사이의 관계에 아무런 영향을 미치지 않을 것입니다. 만일 당신이 연구에 참여하지 않기로 결정했다면 저와 당신이 속한 시설의 모든 사람은 당신의 의견을 존중하며 그 의견을 따를 것입니다

연락할 곳과 질문하기

만일 인터뷰의 시작 전 또는 인터뷰 도중 중 어떤 궁금한 점이 있으시면 아래의 주소로 제게 연락을 주시거나:

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또는 아래의 주소로 제 지도교수님께 연락 주십시오:

Dr. Susan Rose at 1-(612)624-6378, srose@umn.edu at 245 Educational Science Building, 56 East River Road, University of Minnesota, MN 55455 U.S.A.

만일 이 연구와 관련해 다른 궁금한 점이나 걱정이 있지만 그것을 저와 제 지도교수님 외의 다른 사람에게 이야기 하고 싶으시다면 아래의 주소가 있는 미네소타 주립 대학교 연구 대상 보호 위원회에 연락하셔도 됩니다.

The Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455 USA; (612) 625-1650.

이 양식의 복사본은 이후 기록을 위해 당신이 보관할 수 있습니다.

연구 지원 동의서 양식 (시설 생활인용)

이 문서는 본 연구팀의 한 연구원에 의해 한국어 구두로 정신지체 생활인에게 전달될 것입니다.

- 동의서 내용-

() 예, 나는 이 연구에 참여하기 원합니다

() 아니오, 나는 이 연구에 참여하기 원하지 않습니다.

기관명 : _____

일련번호(서명 불필요): _____