특수교육저널: 이론과 실천
The Journal of Special Education: Theory and Practice
2015. 6. 제16권 2호, pp. 661~681.

A pilot study on the feasibility of the Stress Perception Measure (SPM) for students with intellectual disabilities

Christina H. Kimm, Ph.D.
California State University, Los Angeles

《 Abstract 》

Social skill is one of the greatest concerns of special education professionals and parents of students with intellectual disabilities (ID). One of the causes associated with inappropriate behaviors may be the stress experienced by these students. Some of the possible causes of the stress are the pressure of expectations, the challenge of imposed daily tasks, and feelings of inadequacy when they are unable to handle the tasks. Both professionals and parents have a limited understanding regarding the causes of this stress. Moreover, few instruments are currently available that can measure the level of stress that students with ID experience. This pilot study tested a feasibility of the newly developed Stress Perception Measure (SPM) on students with ID. The Cronbach's Alpha on items in the SPM was .81 indicating SPM had good internal consistency. The results also found the significant correlation between the stress scores measured by the SPM and the adapted behavior. It tentatively demonstrated good feasibility of the SPM in investigating the level and the sources of the stress of students with ID.

Keywords : Stress factors, Stress Scale, Intellectual disabilities, Transition

Adolescence is potentially one of the more stressful periods in an individual's life. Whether or not they have disabilities, students begin to experience the biological changes associated with puberty during early adolescence (Hamburg, 1974; Hendren, 1990: National Institute of Mental Health, 2015; Simmons & Blyth, 1987). They face changing roles and responsibilities as social relationships focused toward outside of family that become more important in adolescent phase (Berndt, 2007; Garbarino, Burston, Raber, Ressell, & Crouter, 1978; Printz, Shermis, & Webb, 1999; Torsheim, Aaroe, & Wold, 2003). Therefore, they must also adjust to a significant change in the school and work environment, and must interact with a greater number of people in the course of a day while facing higher academic expectations (Fenzel & Domingues, 2009; Hendren, 1990; Simmons & Blyth, 1987).

High school students are affected by many different types of stress during this period (Amen & Reglin, 1992). Burnett and Fanshawe (1997) categorized stressors identified by high school students: academic pressure (e.g., fear of failure, achieving high scores on tests, pressure to win), peer relationship (e.g., dating, friendships, peer pressure), job-related stress (demanding boss, high volume of work, late working hours), and victimization at school (e.g., teasing, intimidation, bullying, and sexual harassment). Domestic violence and other forms of abuse and neglect at home were also identified as stressors. Likewise, the transition from school to adult life is an important period in the life of a student with disabilities and it also can be a very stressful time. Students who are in transition can be affected by many different types of stress, although parents or teachers may not be aware of the presence of stressors in a student's life (Amen & Reglin, 1992; Boyce, Marshall, & Peters, 1999; Carr & Vitaliano, 2012; Huete, 2001). Although adolescent stress and the factors that contribute to it have become popular topics of research, currently few data are available to help teachers to understand the psychological readiness and ability to cope with stress of students with intellectual disabilities (ID) who are in transition from school to adulthood.

Although a few research data clearly indicates that students with ID experienced stress (Glenn, Bihm, & Lammers, 2003), research focused on the stress of students with ID is limited. Professionals need to know the

everyday stressors in their lives, and to develop appropriate intervention programs designed to teach them to manage stress and to cope with relevant real-life problems. Huff (1999) suggested the need for support groups for adolescents to help them to improve communication, decision-making, and conflict-resolution skills, as well as to resolve boyfriend/girlfriend problems and friction with parents and friends. Moreover, the researcher investigating stress of students with ID easily face the difficulty finding the useable instruments of this population. The purpose of this pilot study is to explain the basic foundations of the Stress Perception Measure (SPM) and to test its feasibility in measuring the stress of youth with intellectual disabilities.

Ⅰ. Review of Literature

1. Definition of Stress

Stress has been measured differently according to how it was defined. Holmes and Rahe (1967) defined stress as a stimulus event. They explained that stress is life events that affect us whether we recognize it as positive or negative. With this definition, people measured the number of the changes in one's life and how much readjustment people made to change (Weiten & Lloyd, 2000). Selye (1956) defined stress as response elicited by external events. In his view, human stress responses go through stages, such as alarm reaction stage, physiological arousal stage, and exhaustive stage. He linked stress responses to various illnesses and measured stress by physical responses and symptoms. Other researchers defined stress as interaction between stimulation from the events and response of the person (Lazarus & Folkman, 1987; Selye, 1956). In this view, they measured stress by asking how the individual appraises his/her interaction with the stimulus (Weiten, et al., 2000).

Whether one views stress as stimulus, response, or stimulus-response interaction, studies using these scales with populations without disabilities

found that they have been reasonable measures of stress. These scales may be viewed as the individual's appraisals of their own stimulus-responses interactions (Gadzella, Baloglu, & Masten, 2012). However, these scales have failed to measure the stress of people with intellectual disabilities. For example, Bramston and Bostock (1994) developed the Subjective Stress Scale (SSS), a quite sensitive measure of stress for people with intellectual disabilities. However, the majority critique of this scale is that the most of items on that scale were not experienced by individuals with intellectual disabilities. The questions in these scales were asking for abstract personal feelings and hypothetical appraisals of events that they might not have experienced. It requires the respondent's cognitive evaluation of the events (Johnson & McCutcheon, 1981; Swearingen & Cohen, 1985).

2. Stress Measurement Tools

There are three instruments which researchers might be able to uses for research with students with ID. The first instrument, the Daily Stress Inventory (DSI) which was developed by Brantley, Waggoner, and Jones (1987), is a 58-item scale of daily hassles. Respondents identify daily stress fluctuations in both the frequency and impact of stressors in their lives. The structure of the DSI includes the six categories: interpersonal problems, personal competency, cognitive stressors, environmental hassles, health concerns, and varied stressors. The second instrument is the Perceived Stress Scale (PSS) (Cohen, Kamarch, & Mermelstein, 1983). The PSS asks respondents to provide appraisals of their global life stressors whether their lives seem to be unpredictable, uncontrollable, and overloaded. In contrast, the DSI which measures the short-term stressors that fluctuate daily, the PSS measures more long-term stress from chronic conditions and situations. A relatively new stress scale for people with ID is the Subjective Stress Scale (SSS) developed by Bramston and Bostock (1994). This measure was designed to assess the perceived stress levels of people with ID, and it incorporates daily events and issues that typically stress them at varying times in their lives. However, as mentioned

previously, actual items in the scale were events that the majority of students with disabilities have not experienced. Items containing an abstract concept are usually modified in administration of these stress scales. Finlay and Lyons (2001) warned of the unintended violation of a scale's validity due to the use of reverse scales or negative wording. The scale should be simple by keeping to a minimum number of words, removing abstract concepts and avoiding complex phrasings and cover the range of experience that students with ID would have with sound validity and reliability (Esbenson, Rojahn, Aman, & Ruedrick, 2003).

3. Dimensions of Stress

While there are a limited number of published scales dealing with stress responses for people with intellectual disabilities, some interesting comparisons have been attempted between the dimensions of stress experienced by people with and without ID. Factor analysis of the Perceived Stress Scale (PSS) data from 96 psychiatric subjects yielded two factors (Hewitt, Flett, & Mosher, 1992). The authors interpreted the first factor as a general factor, including feelings of lack of control and negative affective reactions such as anger, upset, and nervousness. The second factor involved the perception of the individual's ability to cope with stress.

Bramston and Fogarty (2000) concluded that stress might be a common experience for both people with and without intellectual disabilities. They reported two possible subsets: worry factor and negative experiences in stress of students with ID. Factor 1, which they called "worry", was a generalized stress factor. Some of the questions included: Am I good enough to do this? Can I get enough help to do it? Will I understand what others want me to do? Do people respect my rights? The answers expressed the subjects' feelings about their inability to cope with the demands of daily life, their concerns over a perceived lack of skills, and their concerns over a perceived lack of social support. Factor 2, which they called "negative interpersonal experience" was stressors associated with negative experiences such as arguing, being bullied, teased, or hearing others arguing. This is partially supported by the claims of Nucci and Reiss

(1987) that people with ID react to stress in the same manner as non-disabled individuals. Although they were not certain whether people with ID encounter the full range of stressors, they speculated that they were subject to at least a subset of the same stressors felt by the general population (Glenn et al., 2003).

Research on adolescence has identified several sources of stress arising from interactions with family, school, and peer groups (Siddique & D'Arcy, 1984). People from different cultures often face different levels of stress. What is important is not only each person's perception of the event and the ability to cope with it, but also the cultural understanding of stress (Carr & Vitaliano, 2012; Jones, Beach, & Forehand, 2001; Kim-Bae, 2000; Kobus & Reyes, 2000). As the number of students from culturally different family backgrounds increases, we must begin to consider their unique family culture and experiences. Taking into account different levels of stress and differing manifestations of stress, de Anda, Franke, and Becerra (2009) emphasized that cultural difference must be taken into account so that intervention and prevention programs may be designed differently for people from different cultural backgrounds.

Moreover, there is a critical need for individuals with ID to learn how to gain control over their lives and emphasizes the importance of empowerment through intervention and services. The strong empirical foundation between self-control and stress is well established (Chapman, Shedlack, & France, 2006; Gallia & Wood, 2015; Lazarus & Folkman, 1987). Researchers have extended the effectiveness of self-efficacy and self-determination to career choice and employment such as performance, persistence and employment outcomes (Asmundsdottir, 2004; Betz & Hackett, 2006). In addition, the research provided evidence of self-management skills supporting social skills on the occupational pursuits and academic achievement (Bandura, Barbaranelli, Vittorio, & Pastorelli, 2001). Moreover, taking charge over one's own life motivates people to get involved in their education and transition process which lead them to an improved quality of life after leaving school (Agran, Blanchard, Wehmeyer, &Hughes, 2001; Burgess, & Gutstein, 2007; Garcia-Villsmisar, & Dattilo, 2010; Powers, 2005; Renwick, Schormans, & Zekovic, 2003). Therefore, measuring the stress level and understanding the stress factors are critical

for the researchers and practitioners to provide appropriate counseling and to enhance self-determination in the planning of the stress management program for students with ID.

The Stress Perception Measure (SPM) was developed focusing on the sources of stress differentiated by factor analysis. The SPM categorized the stress factors to identify the origin of stress, such as self, home, school, community considering the cultural influence on people. The SPM also designed to focus on daily tasks that can create stress because it is critical to know the origin of stress in order to effectively manage the stress. The main purposes of this pilot study were to measure the level of stress of students with ID using newly developed SPM and to investigate its reliability and the concurrent validity.

Ⅱ. Methods

1. Participants

There are 184 participants in the pilot study. The participants were students with intellectual disabilities aged between 15-22 and who are attending transition programs in local school districts in the Greater Los Angeles areas. From the pool of possible schools, participants were be selected by the cluster sampling method. Several classes were randomly picked from the list of transition classes in four local school districts. Every student in those particular classes were included in the study. The <Table 1> shows the basic demographic information of the participants. Among them, 125 were male and 59 were female. There were high school students placed in Special Education schools (n=51), high school students in Special Day Class (n=74), and middle school students in Special Day Class (n=59). Participants are from 7thgrade through12th grade. For the further analysis, the grade has been regrouped into two; “High School” including 11th and 12th grades(n=91) and “Middle School” including7th and 8th grade(n=43).

<Table 1> Demographic characteristics of the Participants

Variable		*n*	%
Gender			
	Male	125	67.9
	Female	59	32.1
Placement			
	Special Education School – High School	51	27.7
	Special Day Class - High School	74	40.2
	Special Day Class - Middle School	59	32.1
Grade			
	Middle School (7^{th}–8^{th}grade)	43	23.4
	High School (9^{th}–10^{th}grade)	50	27.2
	High School (11^{th}–12^{th}grade)	91	43.4

2. Instruments

1) The Stress Perception Measure (SPM)

It was developed by the author incorporated two dimensions of stressors: locale of stressor and factors of stress. The locale of stressors includes Self, School, Home, Community, Transition, and Work settings. The stress factors are Intra Personal, Inter Personal, Perceived Tasks, and Perceived Ability to Cope. The stress factors can be interact with each locale of stressors. A four (locale) x six (stress factors) matrix was developed. Three questions were developed to fit in each cell, for a total of 72 questions. Originally, two different versions of SPM were developed. One is "SPM–Work" targeting people who left high school. The other is "SPM–Transition" targeting students who are attending school. Each scale has 60 questions.

Unlike other self–report stress scale with providing the quantified value (e.g., 5–point scale, 10–point scale), the SPM is constructed with the basic Yes/No questions asking participants' perceptions of daily tasks followed by further nested questions. For example, the first level question such as "do you have enough friends?" will be asked to people with intellectual disabilities (ID). If the answer is "yes", they will proceed to the next question. If the answer is "no", they will be asked the second level of a nested question such as "if no, does it bother you that you don't have enough friends?" If the

answer is no, they will proceed to the next question without answering the third level of a nested question. But if their answer is yes on the second level question, then they will answer the third level of a nested question such as "Can you make more friends?" This three-layered yes/no question system will make the questions easy for students with ID to answer. The answers on this three-nested questions will be scored using a 1 (low stress) to 4 (high stress) point scale later by the scorer. For example, if someone answered yes on the sample question above then it will be scored as 1, which means no stress from that question item. If the answer was no and no again at the second level then it will be scored as 2, which means low stress. If the second level answer was yes and yes at the third level then it will be scored as 3, which means medium stress. If the second level yes and no at the third level then it will be scored as 4, which means high stress.

2) The Adapted Behavior Scale-School:2 (ABS-S:2).

To measure the adapted behaviors, we will use the ABS-S:2 scale. It is a widely used assessment of adaptive behavior in children with disabilities ages 3 to 21. The age of participants of this study range 15 - 22 so that ABS-S:2 is appropriate to use. It consists of two parts taking about 15 to 30 minutes to administer. Part one consists of nine behavior domains evaluating behaviors considered important to personal responsibility and dependent living. Part two consists of four behavior domains that assess social adaptations and maladaptive behaviors. The ABS-S: 2 is reported to have high internal consistency reliabilities, ranging from .82 to .99, and test-retest reliabilities ranging from .42 to .79 (Sattler, 2002). This measure is used to test the correlation between the amount of adapted behavior and the stress measured by the SPM. In a way, when these two measures show the correlation, it tentatively shows that the SPM discriminating the behavior factor consistently.

3) Family Survey.

The survey was developed to collect information on stress factor variables on family information. The family variables were recoded to generate the independent variables to analyze the stress factors and to test the differentiability of the SPM according to these family related independent

variables. Since the purpose of this pilot study was to test the feasibility of the SPM as a tool to measure the factor and the level of stress of students with disabilities, family stress factors were collected to test if the SPM would yield the results differentiating amount of stress that students experienced.

3. Procedure

The Stress Perception Measure (SPM) had been developed by the author. The main purpose of this pilot study is to test the SPM and its feasibility and effectiveness in measuring the stress of students with ID. It is the first test study on the SPM. The ultimate goal of this pilot study is to test the SPM and to modify the scale based on the feedback collected from the pilot study results.

The directors of the special education in the school districts were contacted explaining the purpose of the study and the target population. Information about potential participants were collected on the volunteer bases from the special education directors who provided the written commitment. When the participants were selected and provided the consent letter, each participant was interviewed for basic demographic information before the testing.

This study adopted a basic correlational survey design. This study involves a face to face survey on individual participants with intellectual disabilities using the stress scale (SPM), the adapted behaviors (ABS-S:2), and the Survey at one time. Students with ID were assisted with prompting questions asking if each task was something they must complete and if it was something that they liked to do or not. Further, the group differences were also investigated based on the independent variables recorded based on the Family Survey results.

4. Data Analysis

Data collected in the pilot study were entered into a computer and analyzed with the SPSS version 22.0 for Windows. The following statistical methods were used in this study.

1) Descriptive Statistics.

The frequency of data will be assessed. The means and standard deviations of the variables the level of stress, adapted behaviors, and self-determination skills will be computed.

2) Inferential Statistics.

The Cronbach's alpha were computed to test the internal consistency among items in the SPM scale developed in this study. This statistical method examined the quality of test items in the stress scale and of the test as a whole. The results were used to identify the sound test items and to eliminate ambiguous or misleading items for the future use of the SPM.

A Pearson's correlation coefficient were calculated to investigate the relationship between the stress and the adapted behaviors. Further, correlation coefficients will be computed to test the relationship between the stressor factors in the groups divided according to each independent variable collected by the Family Survey. Then, a principal component factor analysis were carried out in an effort to reveal the stressor factors of the descriptive data collected with the stress scale. The data was also analyzed using the analysis of variances and t-tests to test the difference in the level of stress among independent variables including family variables.

Ⅲ. Results

1. Family Survey

With the Family Survey, some of the family information were collected to analyze the correlations between these family factors and the level of stress of students with ID <Table 2>. Eighty eight percent of the participants had both parents and 12 percent had single parents. Twenty two percent of the participants were single child and 78 percent had one or more siblings in the family. By the level of father's education, 35 percent

of fathers had completed the college education, 48.9 percent had high school completion, and 16.1 percent had less than high school education. By the level of mother's education, 16.8 percent of mothers had completed the college education, 61.3 percent had high school completion, and 21.9 percent had less than high school education. More than the 50 percent of parents were actively engaged in their child's education meanwhile 32 percent were overprotecting and 12 percent reported as no interest. Although the total number of the participants were 184 in this pilot study, there were missing cases due to some participants did not answer some of the questions in the research instruments and the survey form.

<Table 2> Independent variables created based on family characteristics of the participants

Variable		*N*	%
Father's Education*			
	College graduate	48	35.0
	High school graduate	67	48.9
	Less than high school	22	16.1
Mother's Education*			
	College graduate	23	16.8
	High school graduate	84	61.3
	Less than high school	30	21.9
SES**			
	High SES	20	11.4
	Middle SES	96	54.9
	Low SES	59	33.7
Parents' attention			
	Overprotection/Indulgence	59	32.1
	Actively Engaged	102	55.4
	Neglect/No interest	22	12.0

* Missing cases = 47, ** Missing cases = 9

2. Reliability of the scales

The Cronbach's Alpha on items in the SPM was .81 indicating Stress Perception Measure had good internal consistency. Moreover, there was significant positive correlation found between the perceived stress and the adaptive behaviors of students with ID showing that students who perceived higher stress exhibited higher behavior problems (r=.65, p<.001).

Perceived Stress Measures

1) Educational Placement

There are nine subscales (Interpersonal, Intrapersonal, Tasks, Ability, Self, Family, School, Transition, Community) and the total stress index in the SPM. The < Table 3> shows the significant differences in the amount of the total perceived stress. An analysis of variance (ANOVA) showed that the effect of the educational placement on the total stress, $F_{(2,141)}$=3.52,p<.05: Special School-High School, Day Class-High School, and Day Class-Middle School. The data were further analyzed in these nine subscale scores. The Post hoc analyses were conducted using the Tukey post hoc criterion for significance among groups on the subscales with significant between group differences. Tasks, School, and Transition among 3 different groups categorized by placement.

<Table 3> One-Way Analysis of Variance of Placement by Stress

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	2	275.93	137.96	5.65	.004
Within groups	163	3983.33	24.44		
Total	165	4259.26			

On the Tasks subscale, high school students in Special Day class (M =25.67, SD =4.83) and middle school student who are in the Special Day class (M =26.22, SD =5.41) perceived significantly higher level of stress from too much tasks than those who were in the Special schools (M =23.14, SD =5.43), $F_{(2,163)}$=5.64,p<.01. On the School subscale, middle school

students in Special Day Class (M =20.53, SD =4.97) perceived significantly more stress from school than High school students who are in Special Education School (M =17.88, SD=3.24), $F_{(2,141)}$=3.66,p<.05. On the Transition subscale (Table 4), middle school students in Special Day Class (M =21.35, SD = 4.50) and high school students who in Special Day Class (M = 20.38, SD = 4.24) perceived significantly higher stress from transition issues than high school students who are in Special Education School (M = 17.78, SD = 3.66), $F_{(2,141)}$=9.57,p<.001.

2) Education Level of Parents

Table 4 showed that the effect of the father's education was significant, $F_{(2,141)}$=3.45,p<.05. Post hoc analyses using the Tukey post hoc criterion for significance indicated that students who had college graduate fathers expressed significantly higher level of stress originated from "Self" (M = 21.87, SD = 5.16) than those who have fathers with less than high school education (M = 18.77, SD = 3.96). Similarly, ANOVA showed that the effect of mother's education also impacted on the level of stress among students, $F_{(2,141)}$=3.34,p<.05. Students who have college graduate mothers expressed significantly lower level of school related stress (M = 17.06, SD = 1.91) than those who have mothers with less than high school education (M = 20.15, SD = 4.87).

3) Socio-economic Status

There were significant differences on the amount of stress perceived by students with DD among different SES groups. In Family subscale, students from Upper SES class (M = 17.38, SD = 3.07) perceived significantly less stress than students from the Middle SES class (M = 20.19, SD = 4.34) and Lower SES class (M = 21.19, SD = 4.34), $F_{(2,138)}$=7.67,p<.001. For Transition subscale, student from Low SES class (M = 21.31, SD = 4.43) perceived significantly higher transition stress than students from Upper SES class (M = 19.37, SD = 3.96), $F_{(2,137)}$=3.05,p<.05. For Total stress, student from Low SES class (M = 105.62, SD = 18.8) perceived significantly higher stress than students from Upper SES class (M = 92.14, SD = 13.27), $F_{(2,138)}$=3.11,p<.05.

IV. Conclusion

184 students with ID participated in the pilot study. The main purpose of this pilot study was to test the feasibility of the Stress Perception Measure (SPM). The SPM is different from other existing stress measures such as the Perceived Stress Scale (PSS) (Cohen, Kamarch, & Mermelstein, 1983), the Daily Stress Inventory (DSI) (Brantley, Waggoner, & Jones, 1987), and the Subjective Stress Scale (SSS) (Bramston & Bostock, 1994).

Currently available stress measures are focused on the conceptual merits and locale of the stressors. PSS and DSI were developed to use on students without intellectual disabilities so that the questions in these scales were asking for abstract personal feelings and hypothetical appraisals of events that they might not be able to understand. Most of the self-report stress measure require the respondent's cognitive evaluation of the events (Johnson & McCutcheon, 1981; Swearingen & Cohen, 1985), which makes harder for researchers to measure the stress of students with ID. When researchers conduct research using the self-report stress measure, they usually modify the tests, use some sections of the test, and provide verbal or visual prompts.

Glenn et al. (2003) attempted to measure mental and emotional appraisal of people with intellectual disabilities using the modified versions of the commonly available tools for people without disabilities. They used the visual prompt to help the participants to quantify their feelings displaying different numbers of dots on the card; no dot for "never," 4 dots for "a little," 10 dots for "sometimes," and 17 dots for "a lot." Using this modified visual prompt, they could yield consistent results that were in the literature. However, they were limited in terms of people they could select as participant with intellectual disabilities to borderline and mild disabilities. To address the measurement issue with people with intellectual disabilities, Bramston and Bostock (1994) developed the Subjective Stress Scale (SSS). It is a quite sensitive measure of stress for people with intellectual disabilities. However, the majority critique of this scale is that the most of items on that scale were not experienced by individuals with intellectual disabilities.

Unlike other self-report stress scale with providing the quantified value (e.g., 4-point scale, 5-point scale), the SPM is constructed with the basic Yes/No questions asking participants' perceptions of daily tasks followed by further nested questions. This nested layers Yes/No question format will be easier for students with intellectual disabilities to explain the stress factors they experience and for researchers to quantify the amount of stress expressed by them. The internal consistency calculated by Cronbach's Alpha was .81, indicating that SPM is very reliable.

To examine the feasibility of SPM, the Adaptive Behavior Rating Scales were used to compute the concurrent validity. Stress are known as influencing factor on human behaviors and correlated with the social support (Hoge & Dattilo, 1999; Jones, et al., 2001; Torsheim & Wold, 2003). SPM scores were significantly correlated with Adaptive Behavior Rating Scale scores. A significant inverse relationship was found between stress scores and problem behaviors (r=.65, p<.001). This result is consistent with other studies (Schulenberg, Wadsworth, O'Malley, Bachman, & Johnston, 1996; Hardan, & Sahl, 1999; Levine, 1997; Jo Lohman, & Jarvis, 2000), which means that SPM is a valid measure of levels of stress.

These results revealed the potential of SPM as a valid and reliable tool to measure stress of students with ID. However, some of the limitations include that the item analysis indicated that several questions had low correlation with other stress factor questions. There are a few questions need to be revised and tested as part of the development of the final version of SPM. To demonstrate the sensitivity of SPM as a measuring tool, this study attempted to analyze the stress scores in various independent variables such as educational placement, parents' education level, and social economic status from the Parent Survey. For the future, the revised SPM should be tested for its validity and reliability and used in the comparison studies between the students with ID and those without disabilities and concurrent validity study between other stress measurement tools.

References

AAMR Adaptive Behavior Scale-School: Second Edition (ABS-S:2) (1993). American Association on Mental Retardation, Pro-Ed. Austin: TX.

Agran, M., Blanchard, C., Wehmeyer, M., & Hughes, C. (2001). Teaching students to self-regulate their behavior: The differential effects of student- vs. teacher-delivered reinforcement. *Research in Developmental Disabilities, 22*(4), 319-332.

Amen, J., & Reglin, G. (1992). Stress and the high school senior: Implications for instruction. *NASSP Bulletin, 76*(548), 78-84.

Asmundsdottir, E. E. (2004). The worker role interview: A powerful tool in Icelandic work rehabilitation. *Journal of Prevention, Assessment & Rehabilitation, 22*(1), 21-26.

Bandura, A., Barbaranelli, C., Vittorio, C. & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72*(1), 187-206.

Berndt, T. J. (2007). Children's friendships: shifts over a half-century in perspectives on their development and their effects. In G. W. Ladd (Ed.), *Appraising the human development sciences: Essays in honor of Merrill-Palmer Quarterly* (pp. 138-155). Detroit, MI: Wayne State University Press.

Betz, N. E., & Hackett, G. (2006). Career self-efficacy theory: Back to the future. *Journal of Career Assessment, 14*(1), 3-11.

Boyce, G. C., Marshall, E. S., & Peters, M. (1999). Daily stressors, coping responses, and uplifts of adolescents with disabilities. *Education and Training in Mental Retardation and Developmental Disabilities, 34*(4), 406-417.

Bramston, P., & Bostock, J. (1994). Measuring perceived stress in people with intellectual disabilities: The development of a new scale. *Australia & New Zealand Journal of Developmental Disabilities, 19*(2), 149-157.

Bramston, P., & Fogarty, G. (2000). The assessment of emotional distress experienced by people with an intellectual disabilities: A study of different mythologies. *Research in Developmental Disabilities, 21*(6), 487-500.

Brantley, P. J., Waggoner, C. D., & Jones, G. N. (1987). A Daily Stress Inventory: Development, reliability, and validity. *Journal of Behavioral Medicine, 10*(1), 61-74.

Burgess, A. F., & Gutstein, S. E. (2007). Quality of life for people with autism: Raising the standard for evaluating successful outcomes. *Child and Adolescent Mental Health, 12*(2), 80-86.

Burnett, P. C., & Fanshawe, J. P. (1997). Measuring school-related stressors in adolescents. *Journal of Youth and Adolescence, 26*(4), 415-428.

Carr, J. E., Vitaliano, P. P. (2012). Stress, adaptation, and stress disorders. In O. J. Sahler (Ed.). *The beavhioral sciences and health care (3rd ed.)*(pp. 52-61). Boston, MA: Hogrefe Publishing.

Chapman, R. A., Shedlack, K. J., & France, J. (2006). Stop-Think-Relax: An adapted self-control training strategy for individuals with mental retardation and coexisting psychiatric illness. *Cognitive and Behavioral Practice, 13*(3), 205-214.

Cohen, S., Kamarck, T., Mermeistein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 21*(4), 385-396.

de Anda, D., Franke, T. M., & Becerra, R. M. (2009). Latino parents' and adolescents' perceptions of the needs and issues of adolescents in their community. *Child & Adolescent Social Work Journal, 26*(5), 415-430.

Esbensen, A. J., Rojahn, J., Aman, M. G., & Ruedrick, S. (2003). Reliability and validity of an assessment instrument for anxiety, depression, and mood among individuals with mental retardation. *Journal of Autism and Developmental Disabilities, 33*(6), 617-629.

Fenzel, L. M., & Domingues, J. (2009). Educating urban African American children placed at risk: A comparison of two types of catholic middle school. *Catholic Education: A Journal of Inquiry and Practices, 13*(1), 30-52.

Finlay, W. M., & Lyons, E. (2001). Methodological issues in interviewing and using self-report questionnaires with people with mental retardation. *Psychological Assessment, 13*(3), 319-335.

Gadzella, B. M., Baloglu, M., & Masten, W. G. (2012). Evaluation of the student life-stress inventory-revised. *Journal of Instructional Psychology, 39*(2), 82-91.

Galla, B. M, Y Wood, J. J. (2015). Trait self-control predicts adolescents' exposure and reactivity to daily stressful events. *Journal of Personality, 83*(1), 69-83.

Garbarino, J., Burston, N. Raber, S., Russell, R., & Crouter, A. (1978). The social maps of children approaching adolescence: Studying the ecology of youth development. *Journal of Youth and Adolescence, 7*(4), 417-428.

Garcia-Villsmisar, D. A., & Dattilo, J. (2010). Effects of a leisure programme on quality of life and stress of individuals with ASD. *Journal of Intellectual Disability Research, 54*(7), 611-610.

Glenn, E., & Bihm, E. M. (2003). Depression, anxiety, and relevant cognitions in persons with mental retardation. *Journal of Autism and Developmental Disorders, 33*(1), 69-76.

Hamburg, B. A. (1974). Coping behavior in life-threatening circumstance. *Psychotherapy and Psychosomatics, 23*(1-6), 13-25.

Hardan, A., & Sahl, R. (1999). Suicidal behavior in children and adolescents with developmental disorders. *Research in Developmental Disabilities, 20*(4), 287-296.

Hendren, R. L. (1990). Stress in adolescence. In A. L. Eugene (Ed.). *Childhood stress* (pp. 248-264). Hoboken, NJ: John Wiley & Sons.

Hewitt, P. L., Flett, G. L., & Mosher, S. W. (1992). The Perceived Stress Scale: Factor structure and relation to depression symptoms in a psychiatric sample. *Journal of Psychopathology and behavioral Assessment, 14*(3), 247-257.

Hoge, G., & Dattilo, J. (1999). Effects of leisure education program on youth with mental retardation. *Education and training in Mental Retardation and Developmental Disabilities, 34*(1), 20-34.

Homes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*(2), 231-218.

Huete, J. M. (2001). The relationship of daily stress and health in adolescents: Development of the Daily Stress Inventory for Adolescents (DSI-A). *Dissertation abstracts international, 61*(12-B), 6708.

Huff, C. O. (1999). Source, recency, and degree of stress in adolescence and suicide ideation. *Adolescence, 34*(133), 81-89.

Jo Lohman, B., & Jarvis, P. A. (2000). Adolescent stressors, coping strategies, and psychological health studies in the family context. *Journal of Youth and Adolescence, 29*(1), 15-43.

Johnson, J. H., & McCutcheon, S. (1981). Correlates of adolescent pessimism: A study of the Beck Hopelessness Scale. *Journal of Youth and Adolescence, 10*(2), 169-172.

Jones, D. J., Beach, S. R., & Forehand, R. (2001). Stress generation in intact community families: Depressive symptoms, perceived family relationship stress, and implications for adolescent adjustment. *Journal of Social and Personal Relationships, 18*(4), 443-462.

Kim-Bae, L. S. (2000). Cultural identity as a mediator of acculturative stress and psychological adjustment in Vietnamese-American adolescents. *Dissertation abstracts international, 60*(7-b), 3570.

Kobus, K., & Reyes, O. (2000). A descriptive study of urban Mexican American adolescents' perceived stress and coping. *Hispanic Journal of behavioral Sciences, 22*(2), 163-178.

Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality, 1*(3), 141-169.

Levine, S. (1997). Developmental correlates of stress system dysfunction. *Developmental Brain Dysfunction, 10*(6), 347-349

National Institute of Mental Health. (2015). Brain development during childhood and adolescences. (NIMH Publication No. 140862). Rockville, MD: U.S. Government Printing Office.

Nucci, M., & Reiss, S. (1987). Mental retardation and emotional disorders: A test for increased vulnerability to stress. *Australia and New Zealand Journal of Developmental Disabilities, 13*(2), 161-166.

Power, L. E. (2005). Self-determination by individuals with severe disabilities: Limitations or excuses? *Research and Practice for Persons with Severe Disabilities, 30*(3), 168-172.

Printz, B. L., Shermis, M. D., & Webb, P. M. (1999). Stress-buffering factors related to adolescent coping: A path analysis. *Adolescence, 34*(136). 715-734.

Renwick, R., Schormans, A. F., & Zekovic, B. (2003). Quality of life for children with developmental disabilities: A new conceptual framework. *Journal of Developmental Disabilities, 10*(1), 107-114.

Sattler, J. M. (2002). *Assessment of children: Behavioral and clinical applications (4thed.)*. La Mesa, CA: Jerome M Sattler Publisher.

Schulenberg, J., Wadswroth, K. N., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1996). Adolescent risk factors for binge drinking during the transition to young adulthood: Variable- and pattern-centered approaches to change. *Developmental Psychology, 32*(4), 659-674.

Selye, H. (1956). *The stress of life.* New York, NY: McGraw-Hill.

Siddique, C. M, & D'Arcy, C. (1984). Adolescence, stress, and psychological well-being. *Journal of Youth and Adolescence, 13*(6), 459-473.

Simmons, R. G. & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context.* Hawthorne, NY: Adline de gruyter.

Swearingen, E. M., & Cohen, L. H. (1985). Life events and psychological distress: A prospective study of young adolescents. *Developmental Psychology, 21*(6), 1045-1054.

Torsheim, T., Aaroe, L. E., & Wold, B. (2003). School-related stress, social support, and distress: Prospective analysis of reciprocal and multilevel relationships. *Scandinavian Journal of Psychology, 44*(2), 153-159.

Weiten, W., & Lloyd, M. A. (2000). *Psychology applied to modern life: Adjustment at the turn of the century (6thed.)*. Belmont, CA: Wadsworth Thomson Learning.

지적 장애를 가진 학생들을 위한 스트레스 지각 측정 의 타당성 에 대한예비 연구 (SPM)

김 효 선
캘리포니아 주립대학, LA

< 요 약 >

지적장애학생의 사회성과 문제행동은 부모와 전문인들의 지대한 관심사가 되어있다. 장애학생의 부적절한 행동의 원인으로는 그들이 받고 있는 스트레스와 연계성이 부각되고 있다. 스트레스의 변인으로는 자신들에게 주어지는 기대감과 매일 주어지는 과제의 부담감, 문제해결방법을 할 수 없다는 부족함들을 들 수 있다. 그러나 부모와 전문가들은 스트레스를 야기시키는 변인들에 대한 정보와 이해가 부족하며 지적장애학생의 스트레스 정도를 재는 도구가 제대로 개발되어 있지 않다. 이 예비연구에서는 지적장애학생의 스트레스를 측정하는데 저자가 개발한 “스트레스 인지검사 (Stress Perception Measure)” 타당도와 신뢰도를 알아보았다. 이 예비연구는 크론바흐알파계수 (Cronbach Alpha)가 .81로 SPM의 항목간 신뢰성이 높은 결과를 보였다. 또한 적응행동과 스트레스정도간의 유의한 상관결과를 얻음으로서 SPM이 지적장애학생의 스트레스를 재는 척도로 유용하다는 잠정적인 결론을 얻었다.

주제어 : 스트레스 요인, 스트레스 검사도구, 지적장애, 전환교육