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Using Self-Determination of Senior College Students with Disabilities to Predict Their Quality of Life One Year after Graduation

Pen-Chiang Chao *

Chung Yuan Christian University, TAIWAN

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Abstract: The purpose of this study was to assess the correlation and predictive relationship between self-determination and quality of life of college students with disabilities. Subjects were 145 senior college students recruited from northern Taiwan. Subjects' age ranged from 22 to 25 years and their disabilities varied, including visual impairments ($n = 16$), hearing impairments ($n = 17$), speech/language impairment ($n = 6$), physical disabilities ($n = 40$), specific learning disability ($n = 26$), emotional and behavior disorders ($n = 5$), multiple disabilities ($n = 4$), autism ($n = 23$), and health impairments ($n = 8$). Two measures, the Self-Determination Scale for College Students (SDSCS) and WHOQOL-BREF were used to collect data. The subjects completed the SDSCS in their senior year of college, whereas the WHOQOL-BREF data were collected one year after their graduation. The Pearson correlation and stepwise multiple regression analyses were used to assess the correlation between the SDSCS and the WHOQOL-BREF. Results showed that positive correlations were found between self-determination and quality of life. Subjects' scores on the SDSCS subscales (Self-Realization, Psychological Empowerment, Autonomy) were able to explain between 30.3%-53.2% of the total variance of their scores on the WHOQOL-BREF domains (Psychological, Social Relationships, Environment). The results of this study re-confirmed the positive correlation between self-determination and quality of life of individuals with disabilities. Furthermore, the study highlighted that self-determination not only has an immediate impact on quality of life for people with disabilities, but it seems to have a long-lasting effect. Suggestions and implications are provided.

Keywords: *College students with disabilities, self-determination, quality of life.*

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Introduction

According to the regulations of The Special Education Act (TSEA, 2014) of Taiwan, the implementation of special education is divided into four stages including preschool education, compulsory education, senior high school education, as well as higher and adult education. Teachers and professionals from other fields should provide appropriate education in accordance with the physical and mental characteristics and needs of students in each stage. The right of college students with disabilities to be educated is guaranteed under the law, which may explain why the number of students with disabilities enrolled in colleges in Taiwan has been increasing year by year. According to the governmental statistics, the number of college students with disabilities increased from 8,460 in 2008 to 13,083 in 2017, an almost 1.5-fold increase. Among currently enrolled students, specific learning disabilities ($n = 3276$, 25.0%), autism ($n = 1881$, 14.3%), physical disabilities ($n = 1798$, 13.7%), hearing impairments ($n = 1196$, 9.1%), and intellectual disabilities ($n = 1159$, 8.6%) account for the majority of cases. Because these students require even more autonomy when studying in college, such as registering in courses based on personal interests, properly managing their time, participating in community activities, and taking care of their daily living activities, the issue of whether or not students have sufficient self-determination skills is of particular importance. Although self-determination is a rather abstract concept, its specific definition can be found in the literature. For example, researchers have indicated that self-determination is a type of behavior that manifests based on individual motivations or needs (Deci & Ryan, 2008). Similarly, this ability refers to the individual being able to make decisions that most fulfills his interests (Mithaug, Campeau, & Wolman, 2003). In addition, Karvonen, Test, Wood, Browder, and Algozzine (2004) believe that self-determination is a skill that combines knowledge, beliefs, and action, and that it allows the individual the ability to set and achieve goals, solve problems, and be independent. Other researchers have indicated that self-determination is a complex concept encompassing multiple abilities, including self-knowledge, choice and decision making, setting goals, solving problems, and acting with autonomy (Abery & Stancliffe, 2003). The skills related to self-determination

* **Correspondence:**

Pen-Chiang Chao, Chung Yuan Christian University, Department of Special Education, Taiwan.
Email: chaopc@cycu.edu.tw

described above not only help students with disabilities improve academic performance (Konrad, Fowler, Walker, Test, & Wood, 2007; Ruban, McCoach, McGuire, & Reis, 2003) but also yield better results when they transition to a career (Moore, & McNaught, 2014; Wehmeyer, Palmer, Soukup, Garner, & Lawrence, 2007). Even more importantly, self-determination is an essential factor affecting the quality of life of students with disabilities (Schalock, 1994; Schalock, 1996; Schalock et al., 2005; Wehmeyer & Palmer, 2003; Wehmeyer & Schalock, 2001). Regarding the relationship between self-determination and quality of life, Wehmeyer (1996) made a very apt observation when defining self-determination as “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” (p. 22). Thus, the close relationship between the two is clear.

Studies on the quality of life of people with disabilities have gained more and more attention in the special education field in the last 30 years (Schalock, 2000). With respect to the different educational stages of students with disabilities, this issue is even more important for young adults with disabilities during the transition from high school to college or when entering society and starting a career. Because they face even more complex situations in their personal relationships, leisure pursuits, employment/education, community involvement, and physical and emotional health in this next stage of their lives, their adaptation to these situations has a direct effect on their overall quality of life (Cronin, Patton, & Wood, 2007). The reason that the concept of quality of life is widely emphasized in the field of special education is primarily because the level of the quality of life of students with disabilities can reflect the effectiveness of the educational services they receive (Schalock, 1996). Additionally, the U.S. government has instituted standards-based reform in recent years that represent an emphasis on the quality of instruction teachers deliver. The goal is to ensure that students can achieve quality learning outcomes after receiving quality education (Wehmeyer & Schalock, 2001). From the point of view of human nature, an individual’s pursuit of a lifestyle that brings happiness and quality-of-life satisfaction is a universal human value and this concept is equally appropriate for persons with disabilities. This assertion is actually quite consistent with the assertion of Wehmeyer (1996) that individuals with self-determination can decide for themselves the quality of life they want. Indeed, when discussing the implications of quality of life for people with disabilities, Schalock (1996) indicated that this concept includes eight core dimensions, including (a)emotional well-being, (b)interpersonal relations, (c)material well-being, (d)personal development, (e)physical well-being, (f)self-determination, (g)social inclusion, and (h)rights. This assertion again agrees with the inextricable relationship between self-determination and quality of life. However, what exactly is the relationship between the two? The results of many studies have addressed this question. First, a study by Wehmeyer and Schwarz (1998) focused on 50 people with intellectual disabilities aged 20-69 years and living in group homes and investigated whether self-determination, life choices, age, and intelligence were variables that predicted their level of quality of life. The results showed that age, intelligence, and choices available in group homes were variables that could not effectively predict quality of life. However, degree of self-determination can effectively predict quality of life measured by using the *Quality of Life Questionnaire* (Schalock & Keith, 1993). The results of discriminant analysis showed that subjects classified in the High Quality of Life Group ($M = 106.03$) had far higher scores on the *Arc’s Self-Determination Scale* (Wehmeyer & Kelchner, 1995), a widely recognized self-determination measure, than the Low Quality of Life Group ($M = 94.21$). Additionally, a study by Lachapelle et al. (2005) using the same study design and tools showed the same result. This transnational study focused on 182 adults with mild intellectual disabilities and investigated the relationship between self-determination and quality of life. The subjects of this study were residents of Canada, the United States, France, and Belgium from different living environments, including living with family, independent living, or living in a supported environment. The results showed that the level of self-determination can be used to differentiate subjects’ level of quality of life. Specifically, individuals with a higher level of quality of life had higher levels of self-determination; conversely, individuals with low levels of self-determination had a higher probability of being classified in the low quality of life group. In another study, Nota, Ferrari, Soresi, and Wehmeyer (2007) focused on 141 people aged 16–65 years with intellectual disabilities in Italy. Although this study used different scales for self-determination and quality of life, the results again showed consistency with those of the previous two studies.

The results of all the studies described above clearly show that the self-determination of people with intellectual disabilities can serve as an essential variable for assessing the level of an individual’s quality of life. Indeed, because self-determination and quality of life share many core concepts, such as self-concept, self-value, goal setting, self-care, and choice and decision-making, the linear combination of the two has obvious significance. However, can this conclusion be extended to people with intellectual or other disabilities in Taiwan? This is the question the present study seeks to answer. In short, the purpose of the present study was to assess the relationship between self-determination and quality of life among college students with disabilities in Taiwan. In contrast to the research design and methodology used in previous studies, the present study used the self-determination of senior college students with disabilities to predict their quality of life one year after graduation. This design allows us to understand further the predictive value of self-determination on the quality of life of people with disabilities.

Methodology

Subjects

The subjects of this study were senior college students with disabilities ($N = 145$) recruited from northern Taiwan. Their age ranged from 22 to 25 years. The subjects were asked to complete a self-determination scale in their senior year of college and a scale measuring their quality of life one year after graduation from college. With the exception of eight participants continuing their studies in graduate school, the remaining subjects decided to enter the job market. Of the subjects, 79 were male (54.5%) and 66 were female (45.5%). These subjects' major fields of study in college were diverse, including electronics, electrical engineering, information management, physics, civil engineering, international business, accounting, economics, foreign languages, tourism, business design, medical management, law, and so on. Subjects' disabilities included visual impairments ($n = 16$), hearing impairments ($n = 17$), speech/language impairment ($n = 6$), physical disabilities ($n = 40$), specific learning disability ($n = 26$), emotional and behavior disorders ($n = 5$), multiple disabilities ($n = 4$), autism ($n = 23$), and health impairments ($n = 8$).

Measures

Self-Determination Scale for College Students (SDSCS) (Chao, 2016): The present study used the causal agent theory and function model of self-determination proposed by Wehmeyer (1999) as the basis for preparing the content and framework of the SDSCS. According to this theory, a causal agent can act in a certain way or allow a certain event to happen based on self-intention, with the ability to act autonomously, demonstrate self-regulated behavior(s), initiate/respond to the event in a psychologically empowered manner, and act in a self-realizing manner. Additionally, this study referenced the educational environments, living situations, and teacher-student interaction models in Taiwan's colleges when developing the items in the SDSCS. Specifically, the SDSCS is a self-reported scale containing 48 items, and the subjects selected the statement that most agreed with their actual situation or opinion. Subjects' responses are scored on a 5-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The total score ranges from 48 to 240, with higher scores representing higher degrees of self-determination. The SDSCS includes Self-Realization (SR), Psychological Empowerment (PE), Self-Regulation (SG), and Autonomy (AT) four subscales. The SR subscale primarily assesses the self-awareness, self-perception, and self-understanding of subjects (e.g., *I know which college courses are more interesting to me.*). The PE subscale is used to assess whether the subjects possess the ability for self-advocacy, internal locus of control, and positive attributions of success and expected outcomes (e.g., *I believe that I have the ability to complete the assignment given by the college instructor.*). The SG subscale is used to assess the ability of subjects to set goals, solve problems, and adjust behaviors depending on the situation (e.g., *I set career goals based on my own interests.*). The AT subscale primarily assesses the independent living and self-care ability of subjects (e.g., *I am able to take notes and find information on my own in college.*). The statistical adequacy of the SDSCS was evaluated based on 82 college students participating in a pilot study. Results showed that the internal consistency reliability coefficients (Cronbach's α) for the subscales ranged from .73 to .89, while the test-retest reliability coefficients ranged from .70 to .83. The construct validity of the SDSCS was assessed and found to be acceptable (Chao, 2016).

WHOQOL-BREF (The WHOQOL Group, 1998): This scale is the short version of the World Health Organization Quality of Life assessment (WHOQOL-100). The WHOQOL-100 was originally developed from a collaboration between researchers and specialists from 15 countries; the WHO expected the development of this scale to assist in the transnational assessment of quality of life of individuals requiring medical attention and provide humanistic and holistic medical services and quality of care to citizens of different countries (The WHOQOL Group, 1994a, 1994b). The WHOQOL-BREF and the WHOQOL-100 share the same theoretical framework and assessment goals, but the items have been greatly shortened, and the six quality of life domains in the original assessment have been reduced to four. Specifically, the WHOQOL-BREF contains a total of 26 items, with 2 items used to assess the overall quality of life and satisfaction with health. The remaining 24 items are classified into one of the following four domains: (a) Physical health: includes 7 items used to assess the individual's activities of daily living, dependence on medicinal substances, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity; (b) Psychological: includes 6 items used to assess the individual's bodily image and appearance; negative and positive feelings; self-esteem; spirituality/religion/personal beliefs; and thinking, learning, memory, and concentration; (c) Social relationships: includes 3 items used to assess the individual's personal relationships, social support, and sexual activity; (d) Environment: includes 8 items used to assess the individual's financial resources, freedom, physical safety and security, accessibility and quality of health and social care, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment, and transport. Each item is rated on a 5-point Likert scale, with higher scores representing a better quality of life. The raw scores of each domain can be converted into a score from 4-20 or 0-100. The psychometric properties of the WHOQOL-BREF have shown good validity and reliability in the results of many transnational studies, such as in the Dutch version (Trompenaars, Masthoff, Van Heck, Hodiament, & De Vries, 2005), Brazilian version (Berlim, Pavanello, Caldieraro, & Fleck, 2005), and Arabic version (Ohaeri & Awadalla, 2009). Application of the WHOQOL-BREF to Taiwanese also had good validity and reliability (Chang, Cheng, Chin, & Lee, 2013; Yao, Chung, & Wang, 2002).

Procedures

The college students with disabilities who participated in this study took part in another study that was conducted by the same researcher one year ago. These students were all seniors in college at that time and as mentioned above, they were requested to complete the SDSCS. After one year of their graduation from college, the researcher of this study contacted this group of students via email or phone according to the contact details they had specified. The subjects were informed about the purpose of this study and were asked about their willingness to participate in this study. Questionnaires (i.e., the WHOQOL-BREF) and consent forms were mailed to the individuals who agreed to participate. The consent form served to allow subjects to express their willingness to participate and give content to the present study for the use of the SDSCS data they provided in the study a year ago.

Data Analysis

The Pearson correlation analysis was first conducted to evaluate the linear relationship between each of the SDSCS subscales (i.e., SR, PE, SG, AT) and the WHOQOL-BREF domains (i.e., Physical Health, Psychological, Social Relationships, Environment). A significant correlation was followed by conducting a stepwise multiple regression analysis to assess the prediction of the score on individual WHOQOL-BREF life domain from scores of the SDSCS subscales.

Results

Results of the Pearson correlation analysis showed that there was a positive relationship between the subjects' scores on the SDSCS and WHOQOL-BREF (see Table 1). However, correlations among variables differed. Some of the r coefficients approached to or close to zero, while others were of an intermediate or high level of correlation. Among all bivariate correlations, over half of the r coefficients were statistically significant. From the perspective of the SDSCS, there was a strong correlation between subjects' Self-Realization, and Psychological Empowerment and their quality of life. In particular, the correlation between SDSCS Self-Realization and WHOQOL-BREF Social Relationships was the highest in the paired comparison analysis. On the other hand, correlations between the subjects' Self-Regulation and Autonomy and their quality of life scores were relatively insignificant. Significant r coefficients were only observed between SDSCS Self-Regulation and the WHOQOL-BREF Psychological domain as well as between SDSCS Autonomy and the WHOQOL-BREF Environment domain. In addition, from the perspective of the WHOQOL-BREF, no correlation was found between quality of Physical Health and self-determination. In particular, correlations between WHOQOL-BREF Physical Health and the two SDSCS subscales, Self-Realization and Self-Regulation, were close to zero.

Table 1. The Bivariate Correlations between the SDSCS and WHOQOL-BREF

SDSCS Subscale	WHOQOL-BREF Domain			
	Physical Health	Psychological	Social Relationships	Environment
Self-Realization	.01	.62**	.70**	.37**
Psychological Empowerment	.15	.42**	.55**	.42**
Self-Regulation	.05	.18*	.10	.14
Autonomy	.16	.02	.14	.55**

* $p < .05$, ** $p < .01$

The study further conducted a series of stepwise multiple regression analyses in which the four SDSCS subscales are treated as the predictor variables, whereas the scores on the WHOQOL-BREF Psychological, Social Relationships, and Environment domains are used as the dependent variables individually. Regarding the analysis of Psychological domain, the study first introduced the scores of the four SDSCS subscales into the model simultaneously and the findings showed that only the scores of Self-Realization ($t = 6.19$, $p < .01$) and Psychological Empowerment ($t = 2.52$, $p = .013$) were significantly correlated with subjects' score on the WHOQOL-BREF Psychological domain. Since the correlation between the SDSCS Self-Realization and WHOQOL-BREF Psychological domain was relatively high, a second round of regression analysis was conducted, and Self-Realization score was introduced into the model prior to introducing Psychological Empowerment score. The results are presented in Table 2. As is shown in the table, the results of both regression models were statistically significant. When only Self-Realization was entered in the model, the model could explain 38.5% of the total variance of the WHOQOL-BREF Psychological domain. After introducing Psychological Empowerment, the two variables were found to be able to explain 41.5% of the total variance of Psychological domain score ($\Delta R^2 = 3.3\%$).

Table 2. Stepwise Regression Results in Predicting Psychological Domain

Model/SDSCS Predictor(s)	R	R ²	R ² _{adj}	ΔR ²	F	ΔF
1 Self-Realization	.624	.389	.385	.389	91.15**	91.15**
2 Self-Realization Psychological Empowerment	.650	.422	.415	.033	51.90**	8.12**

** $p < .01$

Using Social Relationships as the dependent variable, the results showed that the scores of Self-Realization ($t = 7.74$, $p < .01$) and Autonomy ($t = 3.97$, $p < .01$) were significantly correlated with the WHOQOL-BREF Social Relationships score. The study then conducted a second round of regression analysis in which Self-Realization score was entered into the model prior to introducing Autonomy score. The results showed that both regression models were statistically significant (see Table 3). When only Self-Realization was introduced in the model, the model could explain 48.8% of the total variance of the WHOQOL-BREF Social Relationships. After introducing Autonomy, the two variables were found to be able to explain 53.2% of the total variance of Social Relationships score ($\Delta R^2 = 4.7\%$).

Table 3. Stepwise Regression Results in Predicting Social Relationships Domain

Model/SDSCS Predictor(s)	R	R ²	R ² _{adj}	ΔR ²	F	ΔF
1 Self-Realization	.701	.492	.488	.492	138.28**	138.28**
2 Self-Realization Autonomy	.734	.539	.532	.047	82.95**	14.53**

** $p < .01$

Lastly, a stepwise multiple regression analysis was conducted using the WHOQOL-BREF Environment domain as the dependent variable. The results showed that the scores of Psychological Empowerment ($t = 2.25$, $p = .026$) and Autonomy ($t = 5.62$, $p < .01$) were significantly correlated with subjects' score on the WHOQOL-BREF Environment domain. A second round of regression analysis was then conducted by introducing Autonomy score into the model prior to introducing Psychological Empowerment score. The results showed that both regression models were statistically significant (see Table 4). When only Autonomy was introduced in the model, the model could explain 30.3% of the total variance of the WHOQOL-BREF Environment domain. After introducing Psychological Empowerment, the two variables were found to be able to explain 34.2% of the total variance of Environment domain score ($\Delta R^2 = 4.3\%$).

Table 4. Stepwise Regression Results in Predicting Environment Domain

Model/SDSCS Predictor(s)	R	R ²	R ² _{adj}	ΔR ²	F	ΔF
1 Autonomy	.555	.308	.303	.308	63.64**	63.64**
2 Autonomy Psychological Empowerment	.592	.351	.342	.043	38.35**	9.35**

** $p < .01$

Discussion

The results of this study showed that there was a significant correlation between the self-determination and quality of life of college students with disabilities one year after graduation from college. Adopting self-determination as a predictor variable can effectively predict the level of quality of life of this group of young people. This result is consistent with the findings in past studies (Lachapelle et al., 2005; Nota et al., 2007; Wehmeyer & Schwarz, 1998). Although the tool and methods of evaluation adopted for analysis in the present study were different from those in previous studies, the results clearly showed that the higher self-determination level college students with disabilities had, the higher their quality of life was. On the contrary, lack of self-determination skills substantially increased the probability that this group of disadvantaged young people would have lower quality of life. Even under such consensus, the results of this study have further broadened our awareness and understanding of the relationship between the two variables. Specifically, the results of this study highlighted that self-determination not only has an immediate impact on quality of life for people with disabilities, but it seems to have a long-lasting effect. This is the reason that the self-determination scores obtained one year before, when the participants were in their senior year of college, could still

effectively explain their level of quality of life a year after their college graduation. Unlike previous studies that targeted individuals with intellectual disabilities, the participants of the current study covered eight different types of disabilities in young adults. Such a combination is indeed more in line with the actual distribution of college students with disabilities in Taiwan at present. Therefore, the results of the current study are more meaningful to the academic community in Taiwan. In summary, according to the preliminary results of the present study, the positive correlation between the two variables, self-determination and quality of life, is evident. Nevertheless, it remains unclear whether type of disabilities has an impact on such correlation. Given the fact that the cognitive development and sensory functions of college students with different types of disabilities are all unique, it is worth further investigation to find out how the physical and psychological attributes impact the relationship between self-determination and quality of life.

Since the evaluation scale adopted for quality of life in this study is the WHOQOL-BREF and is different from the *Quality of Life Questionnaire* and *The Evaluation of Quality of Life Instrument* employed in previous studies (Lachapelle et al., 2005; Nota et al., 2007; Wehmeyer & Schwarz, 1998), the theoretical basis, dimensions of evaluation, and the subject content of this study are different from those in the previous related studies. As a result, although the main research content of the current study is consistent with the previous studies, differences still exist on detailed levels. Specifically, when compared with previous studies, the current study has extended the investigation into studying the self-determination of college students with disabilities to evaluate their quality of life using four domains including Physical Health, Psychological, Social Relationships, and Environment. In studying these four domains, results showed that self-determination of college students with disabilities could not effectively predict the quality of physical health. This study suggests that due to the close correlation between physical health and other factors such as innate physical conditions, living environment, and eating habits, even an individual with high levels of self-determination may not be able to guarantee his or her physical health. There were seven items included in the domain of Physical Health of the WHOQOL-BREF, including "To what extent do you feel that physical pain prevents you from doing what you need to do?" (Q3), "How much do you need any medical treatment to function in your daily life?" (Q4), "Do you have enough energy for everyday life?" (Q10), "How well are you able to get around?" (Q15), "How satisfied are you with your sleep?" (Q16), "How satisfied are you with your ability to perform your daily living activities?" (Q17), and "How satisfied are you with your capacity for work?" (Q18). As shown in the content of these items, we can argue that it is difficult to intervene using self-determination skills in certain situations, making self-determination ineffective in predicting the quality of Physical Health. On the other hand, self-determination of college students with disabilities could effectively predict Psychological, Social Relationships, and Environment qualities of the students. Among the three domains, Psychological quality could be explained by the two self-determination skills of the students, namely Self-Realization and Psychological Empowerment. In addition, Self-Realization and Autonomy skills were found to have the highest predictive power on Social Relationships, while Autonomy and Psychological Empowerment can predict Environment quality best. The above results supported the definition of quality of life connotation put forward by Schalock (1996), stating that possession of self-determination skills is a reflection of quality of life a certain kind. Schalock et al. (2005) also proposed that quality of life can be defined by certain self-determination indicators including autonomy, goals and personal values, and choices. In addition, it should be noted that because Self-Regulation skill is not a factor that can predict quality of life, the correlation between these two variables should be further investigated.

Overall, the results of this study re-confirmed that there is a positive correlation and predictive relationship between self-determination and quality of life of individuals with disabilities. However, there are several limitations in the present study that readers should be mindful of. First, the SDSCS and WHOQOL-BREF adopted in this study were both self-reported scales. Therefore, the data collected in both scales may not be objective enough to reflect the actual level of self-determination and quality of life of the participants. In addition, the WHOQOL-BREF was originally designed to evaluate participants' quality of life in the recent past two weeks and therefore, the quality of life responses primarily reflected issues of a short-term rather than a long-term nature. Moreover, there are many factors that can also impact an individual's self-determination and quality of life, such as age and type of disabilities, nature of the society that an individual is living under in terms of safety and traffic, and others, all of which can become confounding variables that, regardless of being mediating or moderator variables, will impact self-determination and quality of life. Therefore, the relationship between the two variables should not be oversimplified.

Based on the results of this study, the following suggestions are provided to researchers and educators as a reference. In terms of research, future studies may focus on the relationship between self-determination and quality of life of a single group of individuals with specific type of disability. Although previous studies have primarily focused on participants with intellectual disabilities, quality of life of individuals with other types of disabilities are also worth attention. To supplement for the deficiencies in the self-reported scale, researchers in subsequent studies are advised to also collect data from other related people such as families and co-workers, or to conduct qualitative interviews to collect auxiliary data. Researchers in future studies are also advised to adopt discriminant function analysis to evaluate if it can also provide correct quality of life classifications based on the self-determination level of individuals with disabilities in Taiwan. Finally, researchers in subsequent studies are recommended to collect more comprehensive background information (e.g., gender, age, type of disability) of participants and evaluate the interaction between the above variables and self-determination or quality of life.

References

- Abery, B. H., & Stancliffe, R. J. (2003). An ecological theory of self-determination: Theoretical foundations. In M. L. Wehmeyer, B. H. Abery, D. E. Mithaug, & R. J. Stancliffe (Eds.), *Theory in self-determination: Foundations for educational practice* (pp. 25-42). Springfield, IL: Charles C. Thomas.
- Berlim, M. T., Pavanello, D. P., Caldieraro, M. A., & Fleck, M. P. (2005). Reliability and validity of the WHOQOL BREF in a sample of Brazilian outpatients with major depression. *Quality of Life Research, 14*(2), 561-564.
- Chang, C. H., Cheng, Y. F., Chin, H. C., & Lee, H. N. (2013). A study on the test of validity and reliability of WHOQOL-BREF when it was applied to adults with severe visual impairments. *Bulletin of Educational Psychology, 44*, 521-536.
- Chao, P. C. (2016, July). *Investigation of the Self-Determination Skills and Learning Adjustment of Taiwanese College Students with Disabilities*. Paper presented at the International Conference on Social Science, Hokkaido, Japan.
- Cronin, M. E., Patton, J. R., & Wood, S. J. (2007). *Life skills instruction: a practical guide for integrating real-life content into the curriculum at the elementary and secondary levels for students with special needs or who are placed at risk* (2nd ed.). Austin, TX: Pro-Ed.
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology, 49*, 182-185.
- Karvonen, M., Test, D. W., Wood, W. M., Browder, D., & Algozzine, B. (2004). Putting self-determination into practice. *Exceptional Children, 71*, 23-41.
- Konrad, M., Fowler, C. H., Walker, A. R., Test, D. W., & Wood, W. M. (2007). Effects of self-determination interventions on the academic skills of students with learning disabilities. *Learning Disability Quarterly, 30*, 89-113.
- Lachapelle, Y., Wehmeyer, M. L., Haelewyck, M. C., Courbois, Y., Keith, K. D., Schalock, R., Verdugo, M. A., & Walsh, P. N. (2005). The relationship between quality of life and self-determination: an international study. *Journal of Intellectual Disability Research, 49*, 740-744.
- Mithaug, D. E., Campeau, P. L., & Wolman, J. M. (2003). Assessing self-determination prospects among students with and without disabilities. In D. E. Mithaug, D. K. Mithaug, M. Agran, J. E. Martin, & M. L. Wehmeyer (Eds.), *Self-determined learning theory: Construction, verification, and evaluation* (pp. 61-76). Mahwah, NJ: Lawrence Erlbaum.
- Moore, M., & McNaught, J. (2014). Virginia's self-determination project: Assisting students with disabilities to become college and career ready. *Journal of Vocational Rehabilitation, 40*(3), 247-254.
- Nota, L., Ferrari, L., Soresi, S., & Wehmeyer, M. (2007). Self-determination, social abilities, and the quality of life of people with intellectual disabilities. *Journal of Intellectual Disability Research, 51*, 850-865.
- Ohaeri, J. U., & Awadalla, A. W. (2009). The reliability and validity of the short version of the WHO Quality of Life Instrument in an Arab general population. *Annals of Saudi Medicine, 29*(2), 98-104.
- Ruban, L. M., McCoach, D. B., McGuire, J. M., & Reis, S. M. (2003). The differential impact of academic self-regulatory methods on academic achievement among university students with and without learning disabilities. *Journal of Learning Disabilities, 36*, 270-289.
- Schalock, R. L. (1994). The concept of quality of life and its current application in the field of mental retardation/developmental disabilities. In D. Goode (Ed.), *Quality of life for persons with disabilities: International perspectives and issues* (pp. 266-284). Cambridge, UK: Brookline Books.
- Schalock, R. L. (1996). Reconsidering the conceptualization and measurement of quality of life. In R. L. Schalock (Ed.), *Quality of life: Vol. 1. Conceptualization and measurement* (pp. 123-139). Washington, DC: American Association on Mental Retardation.
- Schalock, R. L. (2000). Three decades of quality of life. *Focus on Autism and Other Developmental Disabilities, 15*, 116-127.
- Schalock, R. L., & Keith, K. D. (1993). *Quality of Life Questionnaire Manual*. Worthington, OH: IDS Publishing.
- Schalock, R. L., Verdugo, M. A., Jenaro, C., Wang, M., Wehmeyer, M., Xu, J., & Lachapelle, Y. (2005). Cross-cultural study of quality of life indicators. *American Journal on Mental Retardation, 110*(4), 298-311.
- The Special Education Act, Ministry of Education, Taiwan (2014).
- The WHOQOL Group. (1994a). Development of the WHOQOL: Rationale and current status. *International Journal of Mental Health, 23*(3), 24-56.

- The WHOQOL Group. (1994b). The development of the World Health Organization quality of life assessment instrument (the WHOQOL). In J. Orley and W. Kuyken (Eds.), *Quality of Life Assessment: International Perspectives* (pp. 3-18). Berlin Heidelberg: Springer-Verlag.
- The WHOQOL Group. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological Medicine, 28*, 551-558.
- Trompenaars, F. J., Masthoff, E. D., Van Heck, G. L., Hodiament, P. P., & De Vries, J. (2005). Content validity, construct validity, and reliability of the WHOQOL-Bref in a population of Dutch adult psychiatric outpatients. *Quality of Life Research, 14*(1), 151-160.
- Wehmeyer, M. L. (1996). Self-determination as an educational outcome. In D. J. Sands, & M. L. Wehmeyer (Eds.), *Self-determination across the life span: Independence and choice for people with disabilities* (pp. 17-36). Baltimore, MD: Paul H. Brookes.
- Wehmeyer, M. L. (1999). A functional model of self-determination: Describing development and implementing instruction. *Focus on Autism and Other Developmental Disabilities, 14*, 53-61.
- Wehmeyer, M. L., & Kelchner, K. (1995). *The ARC's Self-Determination Scale*. Arlington, TX: The ARC National Headquarters.
- Wehmeyer, M. L., & Palmer, S. B. (2003). Adult outcomes for students with cognitive disabilities three years after high school: The impact of self-determination. *Education and Training in Developmental Disabilities, 38*(2), 131-144.
- Wehmeyer, M. L., Palmer, S. B., Soukup, J. H. Garner, N. W., & Lawrence, M. (2007). Self-determination and students transition planning knowledge and skills: Predicting involvement. *Exceptionality, 15*(1), 31-44.
- Wehmeyer, M. L., & Schalock, R. L. (2001). Self-determination and quality of life: Implications for special education services and supports. *Focus on Exceptional Children, 33*, 1-15.
- Wehmeyer, M., & Schwartz, M. (1998). The relationship between self-determination and quality of life for adults with mental retardation. *Education and Training in Mental Retardation and Developmental Disabilities, 33*(1), 3-12.
- Yao, G., Chung, C. W., & Wang, J. D. (2002). Development and verification of validity and reliability of the WHOQOL-BREF Taiwan version. *Journal of the Formosan Medical Association, 101*(5), 342-351.