

Original Article

Relationship between well-being and social interaction of disabled people in Ho Chi Minh City, Vietnam

Tuan Pham Van^{1*}

¹Faculty of Humanities & Social Sciences, Van Lang University, Ho Chi Minh City, Vietnam.

Correspondence: Tuan Pham Van, Faculty of Humanities & Social Sciences, Van Lang University, Ho Chi Minh City, Vietnam. tuan.pv@vlu.edu.vn

ABSTRACT

A common social group that faces many difficulties in their daily life is people with disabilities. Helping this group in different aspects of their life not only improves their quality of life but also promotes them to participate in society and contribute in order to develop society. In this research, 354 subjects were selected by convenient random sampling. We present results on well-being, social interaction, the relationship between well-being and social interaction of this group of people in Ho Chi Minh City Vietnam. Research results showed that their well-being is at an average level; their social interactions are limited, especially interactions with outsiders but not family members. The results also revealed that there is a close relationship between well-being and social interactions. Authorities at all levels, social organizations, and families need to pay attention and have appropriate solutions to enhance social interaction, thereby improving the happiness, health, and quality of life of those people.

Keywords: Mental health, Well-being, Social interactions, People with disabilities, Vietnam

Introduction

People with disabilities are a common social group in the world and Vietnam. This social group tends to increase, especially in countries with aging populations and underdeveloped socioeconomic conditions [1]. There are about 1 million people with disabilities in the world, and in Vietnam, it is about 7.8-15% of the country's population [2].

Due to functional limitations or physical impairments, people with disabilities often have many difficulties in social life and are disadvantaged in terms of opportunities to participate in social life [3-5].

Many studies indicate mental health problems of people with disabilities such as depression, anxiety [6, 7]; behavioral disorders [8, 9]; adults with disabilities report experiencing more

Access this article online	
Website: www.japer.in	E-ISSN : 2249-3379

How to cite this article: Van TP. Relationship between well-being and social interaction of disabled people in Ho Chi Minh City, Vietnam. J Adv Pharm Educ Res. 2022;12(2):23-9. https://doi.org/10.51847/YNyliovLlq

mental distress than those without disabilities [10]; ... People with disabilities need mental health support [11]. Social support is important for the mental health of people with disabilities.

Restrictions on social participation as well as mental health issues significantly affect the realization of human rights, happiness, and quality of life of people with disabilities [12].

Health care in general and mental health in particular for people with disabilities is an urgent and important issue to ensure the human rights of people with disabilities as well as to help them have a stable life and opportunities, develop themselves, reduce the burden on family and society [13, 14].

This study was conducted to identify the well-being level, the level of social interaction, the relationship between social interaction and well-being of people with disabilities in Ho Chi Minh City. Thereby, if there are some recommendations to promote social interaction, contribute to improving well-being, and improving the quality of life of people with disabilities in Ho Chi Minh City in particular and in Vietnam in general.

Literature review

The well-being of people in general and people with disabilities, in particular, has been interested in researchers around the world since quite early. According to Diener *et al.*, (1984, 1999),

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

wellbeing was defined as a multidimensional concept that contains subjective appraisals of different aspects of life, including but not restricted to health [15, 16].

Well-being was measured in many different ways. Diener et al. (1985) [17]; Lucas et al. (1996) measure perceived happiness based on life satisfaction. Ryff & Singer (1996) measure wellbeing on many criteria: self-control, environmental mastery, personal development, positive relationships with others, life purpose, and self-acceptance Dear [18]. Keyes (2005) measures well-being in aspects: emotional well-being, psychological wellbeing, and social happiness [19]. Keyes et al. (2008), Xu and Roberts (2010) based on factor analysis of basic psychological manifestations, measuring well-being in global life satisfaction, satisfaction with important areas of life (work, marriage, children) [20, 21]. People with disabilities are a special social group, and their mental health, well-being, and quality of life are closely related [22, 23]. MacGlone et al. (2020) discovered people with disabilities face inequalities in mental wellbeing, for which social exclusion is a contributing factor [24]. The Annual population survey of the office for National statistics on wellbeing by disability (UK) in 4 aspects: happiness, worthwhile, life satisfaction, anxiety shows that well-being by disability is low and lower than non-disabled people [25]. Research by Moore et al. (2011) also found that the professional well-being of people with disabilities is not high [26]. Authors like Emerson et al. (2012), Honey et al. (2011), Wedgewood (2011) focused on analyzing the influence of factors of living conditions, social conditions, etc. on the happiness and life of people with disabilities [27-29]. Kelly et al. (2016) mentioned many different aspects in improving the well-being of disabled people, in which affirmation that actively participating in society improves the well-being of disabled people [30]. According to Wild (2018), having open conversations, establishing strong social networks, and participating in the local community can build emotional resilience and support the person to improve their self-esteem [31]. Lee (2020) believes that it is necessary to focus on measures such as: improving the home environment, improving social well-being, managing hobbies & activities [32].

Regarding the mental health, the well-being of people with disabilities, many factors have been considered and analyzed, especially social participation, social interaction, and social relations. According to Little (2012), social interaction is the process of mutual influence between individuals in social encounters [33]. Jung et al. (2002) defined social interaction as person-to-person interaction to promote interpersonal encouragement and social inclusion [34]. Johnson et al. (2012) said that social interaction is an indispensable condition for people with disabilities to integrate into society [35]. Santini (2015) have shown that social relations have a relationship with mental health problems [36]. According to Holt-Lunstad (2010), lack of close social relationships or social isolation is related to an increased risk of death and poor health [37]. Berkman (2014) also found that continuing favorable exchanges with one's close social environment (e.g., family, work-life, and friends) produces beneficial effects on spirit and health [38]. Santini (2015) argues

that poor social relationships hurt mental health [36]. Tough *et al.* (2017) states that social relationships are essential to wellbeing and mental health in persons with disabilities [39]. Negative aspects of social interaction: impact on psychological well-being [40]. Zhang *et al.* (2014), Liu (2018) in their studies found that social participation, social interaction of people with disabilities is still unsatisfactory and low [41, 42]. The reasons for the current social participation of people with disabilities are many, such as their limited physical abilities [43].

Based on finding out the relationship between social relations, social interaction, and mental health, the well-being of people with disabilities, many authors have discussed solutions to promote social interaction for people with disabilities [44].

From the above, it can be seen that well-being, social interaction, the relationship between social interaction and well-being of people with disabilities have been interested and studied by many authors around the world quite early. However, these issues have not been studied much in Vietnam. We boldly undertake this study to help fill this gap.

Materials and Methods

Participants

The study was conducted on a sample of 354 people with disabilities living in the community in Ho Chi Minh City. Participants in the research sample were selected by convenient random sampling method, the research sample has some specific characteristics: about disability type: 180 people with movement disability, 78 people with hearing and speaking disabilities, and 96 people with vision disability; gender: 212 male and 142 female; residence: 105 people in District 10, 122 people in District 12 and 127 in Hoc Mon District; age: 117 people under 30 years old, 125 people over 30 - 50 years old and 112 people over 50 years old.

Measurement

The well-being of people with disabilities in the sample is measured by the Mental Health Continuum-Short Form (MHC-SF) scale developed by Keyes (2005), this scale has been adapted and used in many research in Vietnam [45, 46]. This scale consists of 14 items, measuring three aspects of expression: emotional happiness, psychological happiness, and social happiness. Each item of the scale is evaluated according to 6 levels: 1- None; 2-1.2 times a month; 3- About once a week; 4- About 2-3 times a week; 5- Almost daily; 6- Daily. Through the statistical analysis, the results showed that the scale has good reliability: Cronbach Alpha = 0.83. All items in the scale have Cronbach Alpha ≥ 0.60 . Social interaction of people with disabilities in the sample is measured using a scale compiled by the research team. This scale consists of 7 items, 3 items measure the interaction of people with disabilities with family members and 4 items measure the interaction of people with disabilities with social relationships. Each item of the scale is rated on 5 levels: 1- Never, 2- Rarely, 3-Occasionally, 4- Often, 5- Very often. Through statistics, the scale has good reliability: Cronbach Alpha = 0.87. All items in the scale have Cronbach Alpha > 0.60.

Analyze research results

The results of the study were statistically processed using SPSS 20.0 software. Descriptive statistics and inferential statistics were used to process the survey results.

Descriptive statistics: Mean and standard deviation are statistics for each item in the scale and the whole scale. The higher the average score, the higher the well-being or social interaction of people with disabilities in the sample. The proportion of people with disabilities in the research sample with a low or high level of well-being or social interaction is assessed based on: $M \pm SD$ (M is the mean score, SD is the standard deviation of the scale): Mean M + SD: low (level 1); $M + SD \leq M$ and M + SD: average (level 2); Mean M + SD: high (level 3).

Inferential statistics: Independent-Samples T-Test, One-Way ANOVA is used to analyze: differences in the expression aspects of well-being and social interaction of people with disabilities, the differences in the level of well-being and interaction of people with disabilities by disability type, place of residence, gender, age. Pearson correlation test is used to analyze the correlation between the expressions of well-being, between well-being and social interaction of people with disabilities. Linear regression is used to analyze the influence of social interaction on the well-being of people with disabilities.

Results and Discussion

The well-being of people with disabilities

Surveying well-being of people with disabilities in 3 aspects: emotional, psychological, social, we obtained the following results:

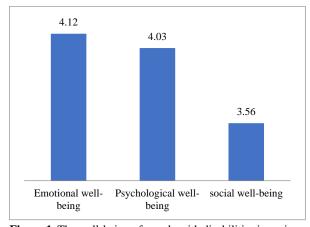


Figure 1. The well-being of people with disabilities in various aspects

The data in **Figure 1** showed that the well-being of people with disabilities in three aspects: emotional well-being, psychological h well-being, and social well-being are all average, with the mean from 3.56 to 4.12. There is a statistically significant difference in the well-being of people with disabilities in these three aspects

(Anova Test, P<0.05), the level of emotional well-being and psychological well-being of people with disabilities is higher than their level of social well-being.

Table 1. Correlation between aspects of the well-being of people with disabilities (r^{**} , with P<0.01)

Emotional	Psychological	Social Well-
Well-being	Well-being	being
1		
0.80**	1	
0.76**	0.73**	1
0.84**	0.81**	0.77**
	Well-being 1 0.80** 0.76**	Well-being Well-being 1 1 5 0.80** 1 0.76** 0.73**

The results of the correlation analysis in **Table 1** showed that emotional well-being, psychological well-being, and social well-being have a very close positive correlation with each other and have a strong positive correlation with the overall well-being of people with disabilities (coefficients r are all greater than 0.73, P<0.05). This means that when the well-being of people with disabilities in one aspect increases or decreases, it will lead to an increase or decrease in the level of well-being in the other two aspects and the general well-being of people with disabilities.

Table 2. The well-being of people with disabilities according to the characteristics of the research sample

Ordinal		Features		SD	P-value
		Movement disability	3.95	0.83	
1	1 Type of disability	Hearing and speaking disabilities	3.87	0.79	P>0.05
		Vision disability	3.88	0.85	
2	2 Gender	Male	4.06	0.76	P<0.05
2		Female	3.74	0.92	P~0.05
		District 10	4.01	0.82	
3	Residence	District 12	3.88	0.88	P>0.05
		Hoc Mon District	3.91	0.91	
		Under 30 years old	4.08	0.79	
4	Age	Over 30 - 50 years old	3.90	0.84	P<0.05
		Over 50 years old	3.72	0.94	

Analysis of the well-being of people with disabilities by disability type, gender, place of residence, age, data in **Table 2** showed that there is no statistically significant difference in disability type and residence. However, there is a difference in the level of well-being of people with disabilities by gender and age, males with disabilities have higher well-being than the female with disabilities, people with disabilities under the age of 30 have a higher level of well-being than those over 30.

Table 3. Percentage of people with disabilities with different levels of well-being (number - %)

Levels			
Level 1	Level 2	Level 3	
N (%)	N (%)	N (%)	
120 (34,0)	149 (42,0)	85 (24.0)	

Analyzing the percentage of people with disabilities who have different levels of well-being, the data in **Table 3** showed that the percentage of people with disabilities who have a high level of well-being is quite limited (level 3, only 24%), quite a lot of people have well-being at an average level (level 2, accounting for 42%) and the percentage of people with a low level of well-being is quite high (level 1, 34%). This is a very interesting number.

The survey data on the well-being of people with disabilities in our study have many similarities with the results of some researchers around the world. Research by Moore *et al.* in 2011, the job well-being of people with disabilities was not high. The Annual Population Survey of the Office for National Statistics on Well-being by disability (UK) in 4 aspects: happiness, worthwhileness, life satisfaction, anxiety showed that well-being by disability is low and lower than non-disabled people [25].

The above survey results showed that all levels of government, social organizations, mass organizations, etc. need to pay attention and take supportive measures to improve the well-being of people who have disabilities in Ho Chi Minh City, helping improve their life quality.

Social interactions of people with disabilities Measuring the social interaction of people with disabilities in 2

Measuring the social interaction of people with disabilities in 2 aspects: interaction with family members and interaction with outsiders, we obtained the following results:

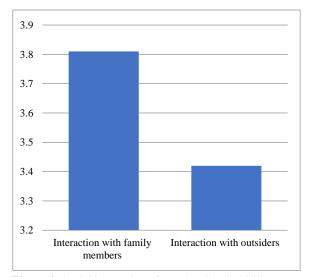


Figure 2. Social interaction of people with disabilities

The data in **Figure 2** showed that the level of social interaction of people with disabilities in the sample is quite limited. The average score reflecting the level of interaction with family members is 3.81/5.0 and the level of interaction with outsiders is 3.42/5.0.

There is a statistically significant difference between interaction with family members and interaction with outsiders (T-Test, P<0.05). The level of interaction with family members is higher than the level of interaction with outsiders.

Table 4. Social interaction level of people with disabilities according to research sample characteristics

Ordina	l	Features	M	SD	P-value	
		Movement disability	4.13	0.66		
Type of disability	Hearing and speaking disabilities	3.48	0.75	P<0.05		
	Vision disability	3.25	0.84			
2		Male	3.87	0.72	D<0.05	
2 Gender	Female	3.37	0.88	P<0.05		
	3 Residence		District 10	3.69	0.93	
3		District 12	3.64	0.86	P>0.05	
		Hoc Mon District	3.53	0.92		
		Under 30 years old 3.43	0.83			
4	Age	Over 30 - 50 years old	4.05	0.78	P<0.05	
		Over 50 years old	3.38	0.91		

Analyzing the social interaction level of people with disabilities according to the characteristics of the research sample, the statistics in **Table 4** showed that there is no difference in residence. There are statistically significant differences in disability type, gender, and age. The level of social interaction of people with mobility disabilities is higher than that of people with hearing, speech, and vision disabilities. The level of social interaction of males with disabilities is higher than that of females, those aged 30-50 are higher than those under 30 and over 50 years old.

Analyzing the percentage of people with disabilities who have social interactions at different levels, the survey results showed that the percentage of people with disabilities who have social interactions at a high level is not much (level 3, only 27.4%), while quite a lot of people with disabilities have low social interaction (level 1, accounting for 31.9%), most people with disabilities have moderate social interaction (level 2, 40.7%).

From the above data, it can be seen that people with disabilities in Ho Chi Minh City have not had an active social interaction. This situation may be due to people who have disabilities lacking support for social interaction from family, the psychological inferiority of people with disabilities and society, due to illness, etc. Some authors in the world when studying social interaction in different groups of people with disabilities, there are also findings similar to our research results. Eleanor et al. (1998) in a study on social interactions of people with disabilities found: in a week, 23% of people with disabilities did not visit with anyone living outside their household and 17% did not leave their houses. Ralph et al. (1995) when studying the social interaction of people with disabilities living in the community found that the social interaction of people with disabilities does not take place at a satisfactory level when assessed through their interactions with people without disabilities. Most interactions were with other people with disabilities and almost half of the interviewees reported no interactions with people without disabilities.

This result showed that practical support is needed to increase the level of social interaction of people with disabilities, especially social interaction.

The relationship between well-being and social interactions of people with disabilities

Table 5. Relationship between social interaction and perceived well-being of people with disabilities

Well-being	Social interaction		
wen-being	r	R^2	
Emotional well-being	0.83**	0.38***	
Psychological well-being	0.78**	0.39***	
Social well-being	0.72**	0.31***	
Well-being	0.81**	0.38***	

Statistical results in **Table 5** showed that social interaction has a fairly close positive correlation with the well-being of people with disabilities (r=0.81, P<0.05), social interaction also has a strong positive correlation. with 3 aspects: emotional well-being, psychological well-being, and social well-being of people with disabilities (r = 0.72 to 0.83). This means that when the social interaction level of people with disabilities changes, it will lead to a change in their well-being in the direction of increasing or decreasing.

Regression results showed that social interaction can explain 38% of the change in the well-being of people with disabilities ($R^2 = 0.38$, P < 0.001). This is a rather large number, which showed that increased social interaction of people with disabilities will be very important in enhancing their sense of well-being.

Conclusion

From the research results on well-being, social interaction, the relationship between well-being and social interaction of people with disabilities in Ho Chi Minh City, we draw some conclusions and following recommendations:

The level of well-being of people with disabilities is at an average level, the percentage of people with disabilities who have a high level of well-being is still limited. In general, the level of social interaction of people with disabilities is not high, the interaction of people with disabilities with people outside the society is more limited than interactions with family members.

The social interaction and well-being of people with disabilities are strongly correlated with each other. Social interaction can explain a large part of the change in the well-being of people with disabilities. Therefore, it is necessary to raise the level of social interaction of people with disabilities, especially and to interact with relationships outside of society, this has an important meaning in contributing to improving the level of well-being of people with disabilities.

To enhance social interaction among people with disabilities in Ho Chi Minh City, authorities at all levels, mass organizations, and families of people with disabilities have increased their attention and implemented various solutions such as consultation so that people with disabilities gradually accept their disabilities, reduce guilt and low self-esteem; raise community awareness about people with disabilities, eliminate discrimination against people with disabilities; formulating policies, creating conditions for people with disabilities to participate in society; establish clubs for people with disabilities,...

Limitations and suggestions for future research

The biggest limitation of this study is the small sample size, which included only 354 subjects and was selected by convenient random sampling. The study also did not go into depth to analyze the difference in well-being, social interaction of people with disabilities in all forms of disability, economic circumstances, characteristics of residence, etc. To have a more comprehensive and objective view of the well-being, social interaction, the relationship between social interaction and well-being of people with disabilities in Ho Chi Minh City, it is necessary to continue to carry out studies on large-scale samples, the selection of samples should be more objective and more systematic.

Acknowledgments: The author acknowledges that this work was supported by Van Lang University.

Conflict of interest: None

Financial support: None

Ethics statement: None

References

- World Health Organization & World Bank. World report on disability. Geneva, Switzerland: World Health Organization. 2011.
- Binh TT, Phong VH, Thao VP. Eliminating Stigma -Reviews and Perspectives of People with Disabilities. Knowledge Publishing House, Ha Noi, 2018.
- 3. Marshall C. Life through the eyes of a disabled person. Arch Dis Child. 2004;89(9):887. doi:10.1136/adc.2003.046433
- Schalock RL, Gardner JF, Bradley VJ. Quality of Life for People with Intellectual and Other Developmental Disabilities: Applications Across Individuals. Organizations, Communities, and Systems, American Association on Intellectual and Developmental Disabilities, Washington, DC. 2007.
- Claes C, Van Hove G, van Loon J, Vandevelde S, Schalock RL. Quality of life measurement in the field of intellectual disabilities: Eight principles for assessing quality of liferelated personal outcomes. Social Indic Res. 2010;98(1):61-72.
- Hermans H, Beekman AT, Evenhuis HM. Prevalence of depression and anxiety in older users of formal Dutch

- intellectual disability services. J Affect Disord. 2013;144(1-2):94-100. doi:10.1016/j.jad.2012.06.011
- 7. Noh JW, Kwon YD, Park J, Oh IH, Kim J. Relationship between physical disability and depression by gender: a panel regression model. PLoS One. 2016;11(11):e0166238. doi:10.1371/journal.pone.0166238
- 8. Hemmings CP, Gravestock S, Pickard M, Bouras N. Psychiatric symptoms and problem behaviours in people with intellectual disabilities. J Intellect Disabil Res. 2006;50(4):269-76.
- Dosen A, Day K, Eds. Treating Mental Illness and Behaviour Disorders in Children and Adults with Mental Retardation, American Psychiatric Press, Washington, DC, USA. 2001.
- Cree RA, Okoro CA, Zack MM, Carbone E. Frequent mental distress among adults, by disability status, disability type, and selected characteristics—United States, 2018. Morb Mortal Wkly Rep. 2020;69(36):1238.
- 11. Williams V, Heslop P. Mental health support needs of people with a learning difficulty: A medical or a social model?. Disabil Soc. 2005;20(3):231-45.
- United Nations (UN). Convention on the Rights of Persons with Disabilities. Treaty Series. 2006;2515:3.
- Anh HQ, Yen KH, Hanh LTH, Oanh LTK. People with disabilities in Vietnam: Challenges, solutions, opportunities for commercial banks and lessons learned from Australia. 2017. Retrieved from https://www.sbv.gov.vn
- 14. Trien NV. Difficulties of people with disabilities. 2020. Retrieved from http://donghanhviet.vn/news/2759/393/Nhung-kho-khan-cua-nguoi-khuyet-tat/d,news_detail_tpl
- Diener E, Suh EM, Lucas RE, Smith HL. Subjective well-being: Three decades of progress. Psychol Bull. 1999;125(2):276-302.
- 16. Diener E. Subjective well-being. Psychol Bull. 1984;95(3):542-75.
- 17. Diener ED, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. J Pers Assess. 1985;49(1):71-5. doi:10.1207/s15327752jpa4901_13
- Ryff CD, Singer B. Psychological well-being: Meaning, measurement, and implications for psychotherapy research.
 Psychother Psychosom. 1996;65(1):14-23. doi:10.1159/000289026
- 19. Keyes CL. Mental illness and/or mental health? Investigating axioms of the complete state model of health. J Consult Clin Psychol. 2005;73(3):539-48. doi:10.1037/0022-006X.73.3.539
- 20. Keyes CL, Wissing M, Potgieter JP, Temane M, Kruger A, Van Rooy S. Evaluation of the mental health continuum–short form (MHC–SF) in setswana-speaking South Africans. Clin Psychol Psychother. 2008;15(3):181-92. doi:10.1002/cpp.572
- 21. Xu J, Roberts RE. The power of positive emotions: It's a matter of life or death—Subjective well-being and longevity

- over 28 years in a general population. Health Psychol. 2010;29(1):9. doi:10.1037/a0016767
- Morisse F, Vandemaele E, Claes C, Claes L, Vandevelde S. Quality of life in persons with intellectual disabilities and mental health problems: An explorative study. Sci World J. 2013;2013. doi:10.1155/2013/491918
- 23. Tsutsumi A, Izutsu T, Ito A. Mental health, well-being, and disability: A new global priority key united nations resolutions and documents. The University of Tokyo Komaba Organization for Educational Excellence (KOMEX), 2015:1-39.
- 24. MacGlone UM, Vamvakaris J, Wilson GB, MacDonald RAR. Understanding the wellbeing effects of a community music program for people with disabilities: A mixed methods, Person-centered study. Front Psychol. 2020;11:588734. doi:10.3389/fpsyg.2020.588734
- 25. Jones J. Disability, well-being, and loneliness, UK: 2019. Off Natl Stat Annual Popul Surv. 2021:1-16.
- Moore ME, Konrad AM, Yang Y, Ng ES, Doherty AJ. The vocational well-being of workers with childhood onset of disability: Life satisfaction and perceived workplace discrimination. J Vocat Behav. 2011;79(3):681-98. doi:10.1016/j.jvb.2011.03.019
- Emerson E, Llewellyn G, Honey A, Kariuki M. Lower well-being of young Australian adults with self-reported disability reflects their poorer living conditions rather than health issues. Aust N Z J Public Health. 2012;36(2):176-82.
- 28. Honey A, Emerson E, Llewellyn G. The mental health of young people with disabilities: impact of social conditions. Soc Psychiatry Psychiatr Epidemiol. 2011;46(1):1-10.
- Wedgewood N. Can anybody play? An introduction to the sociology of sport and disability, in S. Georgakis and K. Russell (Eds.). Youth Sport in Australia. Sydney: Sydney University Press, 2011:101-17.
- Kelly G, Kelly B, Macdonald G. Improving the Well-being of Disabled Young People. Belfast: Queen's University Belfast and Public Health Agency. 2016.
- Wild T. Emotional wellbeing and disability how to find balance. 2018. Retrieved from https://www.cerebralpalsy.org.au/sstposts/StoryId1539 147196733
- 32. Lee L. How to Enhance Daily Life for a Person with a Disability. 2020. Retrieved from https://www.wikihow.com/Enhance-Daily-Life-for-a-Person-with-a-Disability#
- Little W. Introduction to Sociology 2nd Canadian Edition (Chapter 22: Social Interaction). OpenStax College textbook. 2012.
- Jung I, Choi S, Lim C, Leem J. Effects of different types of interaction on learning achievement, satisfaction and participation in web-based instruction. Innov Educ Teach Int. 2002;39(2):153-62.
- 35. Johnson H, Douglas J, Bigby C, Iacono T. Social interaction with adults with severe intellectual disability: Having fun

- and hanging out. J Appl Res Intellect Disabil. 2012;25(4):329-41. doi:10.1111/j.1468-3148.2011.00669.x
- 36. Santini ZI, Koyanagi A, Tyrovolas S, Mason C, Haro JM. The association between social relationships and depression: a systematic review. J Affect Disord. 2015;175:53-65.
- 37. Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: a meta-analytic review. PLoS Med. 2010;7(7):e1000316.
- Berkman LF, Kawachi I, Glymour MM. Social Epidemiology. Second Edition, Oxford University Press. 2014.
- 39. Tough H, Siegrist J, Fekete C. Social relationships, mental health and wellbeing in physical disability: a systematic review. BMC Public Health. 2017;17(1):1-8.
- 40. Rook KS. The negative side of social interaction: impact on psychological well-being. J Pers Soc Psychol. 1984;46(5):1097.
- 41. Zhang L, Li W, Liu B, Xie W. Self-esteem as mediator and moderator of the relationship between stigma perception and social alienation of Chinese adults with disability.

- Disabil Health J. 2014;7(1):119-23. doi:10.1016/j.dhjo.2013.07.004
- Liu S, Xie W, Han S, Mou Z, Zhang X, Zhang L. Social interaction patterns of the disabled people in asymmetric social dilemmas. Front Psychol. 2018;9:1683. doi:10.3389/fpsyg.2018.01683
- 43. Lu N, Liu J, Wang F, Lou VW. Caring for disabled older adults with musculoskeletal conditions: a transactional model of caregiver burden, coping strategies, and depressive symptoms. Arch Gerontol Geriatr. 2017;69:1-7. doi:10.1016/j.archger.2016.11.001
- 44. Carter EW, Hughes C. Increasing social interaction among adolescents with intellectual disabilities and their general education peers: Effective interventions. Res Pract Persons Severe Disabl. 2005;30(4):179-93. doi:10.2511/rpsd.30.4.179
- 45. Ha TTK. The well-being of adults. Psychology. 2015;11:34-48.
- 46. Son HV, Thien TTT, Nhu TDT, Long TCV. Mental well-being of students of pedagogy at Ho Chi Minh City: A cross-sectional study. J Clin Diagn Res. 2021;15(6):10-3.