Psychology, Evaluation, and Technology in Educational Research
5 (1), 2022, 14-23

Available Online: http://petier.org/index.php/PETIER

The smartphone addiction tendency and quality of life in students with disabilities

Lavenia Lintin [a], Arthur Huwae [b] *

Universitas Kristen Satya Wacana. Jl. Diponegoro 52-60 Salatiga, Jawa Tengah, Indonesia, 50711
[a] 1802018149@student.uksw.edu; [b] arthur.huwae@uksw.edu
* Corresponding Author.

Received: 17 May 2021; Revised: 19 November 2021; Accepted: 6 December 2022

Abstract: This study aimed to determine the relationship between smartphone addiction and quality of life among students with disabilities. The method used was quantitative with a correlational design. The participants involved in this study were 33 students with disabilities chosen using snowball sampling. The research measurement used the Smartphone Addiction Scale (α = 0.943) and WHOQOL-BREF (α = 0.941). The results showed no significant negative relationship between smartphone addiction and quality of life among students with disabilities (r = -0.238 and sig. = 0.091). These results indicate that the failure to achieve a quality of life for students with disabilities is not caused by smartphone addiction tendency. The use of smartphones can be controlled in a balanced way by students with disabilities in their daily activities so that it does not have a negative impact on their quality of life.
Keywords: Smartphone Addiction Tendency; Quality of Life; Disabled Students

How to Cite: Lintin, L., & Huwae, A. (2022). The smartphone addiction tendency and quality of life in students with disabilities. *Psychology, Evaluation, and Technology in Educational Research*, *5*(1), 14-23. https://doi.org/10.33292/petier.v5i1.122

INTRODUCTION

Development refers to a specific process that moves forward and cannot be repeated. Permanent changes occur in human development (Haase et al., 2013). Humans develop normally in general, but it is undeniable that some people have developmental issues that impact their physical and psychological needs.

Development is the result of the interaction of maturity and experience. This is based on both hereditary and environmental factors (Wong et al., 2014). Hereditary factors emphasize that genetics strongly influence human development, which means natural human development and growth. Environmental factors emphasize how environmental events shape human development (Handarini, 2019). As a result, experience is critical in human development. Because experience begins in a person's biological environment, such as health, nutrition, and medicine, and progresses to a person's social environment, which includes family, friends, school, community, media, and culture (Kurt & Uçanok, 2020).

One form of development influenced by hereditary and environmental factors is someone with a disability. Disabled (differently abled people) is a term used to describe someone who has a physical or mental disorder that interferes with their daily activities (Undang-Undang Republik Indonesia Nomor 8 Tahun 2016 tentang Penyandang Disabilitas, 2016). Mental disabilities, such as high mental, low mental, and specific learning difficulties, fall into several categories. Physical disabilities such as physical impairment (physical impairment), visual

10.33292/petier.v5i1.148

impairment (blindness), hearing impairment (deafness), and speech disorder (mute impairment) are examples of physical disabilities (Undang Undang Republik Indonesia Nomor 4 Tahun 1997 Tentang Penyandang Cacat, 1997).

The cause of disability is due to several factors, including congenital birth due to a lack of nutrition received by the womb and folic acid deficiency (Dixon-Ibarra & Horner-Johnson, 2014). Disability can also occur as a result of an accident that causes a person to become disabled. Furthermore, events that cause trauma and stress can cause disability, which then continues in the person's psychological disorders, causing mental disorders (Lahelma et al., 2015).

Physically disabled people face limitations as a result of disruptions in bodily functions (Yan et al., 2021). Disability can occur at birth or as a result of accidents, diseases, or the side effects of certain medications (McNeil et al., 2018). People with disabilities will live their lives differently than normal people due to incomplete physical conditions (Thompson et al., 2020). Fundamental problems for people with disabilities can be seen in their behavior when carrying out various activities with other normal people. For example, when disabled people play, talk, or interact with normal people, they face various physical, psychological, and social challenges.

In this era of rapid advancement, it is easier to get everything done quickly (Hermawan et al., 2018). Technology developed slowly at first, but as human culture and civilization advanced, technological advances became more rapid (Machfiroh et al., 2018). Technological progress is one example of changing times in the globalization era, and it is now widely acknowledged and felt to provide a great deal of convenience and comfort to human life (Demirci et al., 2015). Humans, on the other hand, cannot deceive themselves about the fact that technology has a negative impact on modern humans, including people with disabilities (Asa et al., 2021).

Based on the results of the initial assessment conducted on several students with disabilities related to the quality of life from technological advances, they admitted to having a lower quality of life. This occurs as a result of a proclivity to become addicted to technology, one of which is a smartphone. As a result, students with disabilities frequently report headaches, sore eyes, and fatigue as a result of excessive smartphone use. This tendency toward technology occurs because students with disabilities are less confident in their physical appearance in the eyes of others. As a result, students with disabilities use smartphones to pass the time. The impact of smartphone addiction on the quality of life of students with disabilities is undeniable.

Quality of life is defined as the perception of an individual's position towards his life in society in the context of culture and value systems related to goals, expectations, standards, and concerns (World Health Organization, 2012). World Health Organization (2012) states that there are four aspects of quality of life: physical (physical), which includes daily activities, dependence on drugs, energy, fatigue, mobility, pain and discomfort, sleep/rest, as well as work capacity. Second, psychological (psychological well-being) includes bodily image appearance, negative feelings, positive feelings, self-esteem, spiritual or personal beliefs, thinking, learning, memory, and concentration. Third, social relationships include personal relationships, social support, and sexual activity. Fourth, environment (relationship with the environment) includes financial resources, freedom, physical safety, security, health care, and social care, home environment, opportunities to acquire various new information and skills, participation and opportunities to do recreation or fun activities, environment physics, and transportation. Quality of life is used in the field of health services to analyze a person's emotions, social factors, ability to meet the demands of activities in normal life, and other impacts caused by the influence of a person's quality of life (Solis & Lotufo-Neto, 2019). Several factors can affect the quality of life, including self-control (Octari et al., 2020). This is related to the use of

smartphones as an example of technological progress. Someone who has low self-control will find it difficult to control smartphone use.

Age also has an impact on a person's quality of life because the older the person, the lower the quality of life (Kumar S., 2014). However, in an increasingly advanced era, young people may have a low quality of life. Excessive smartphone use is one of the causes of decreased quality of life at a young age. Fischer-Grote et al. (2019) discovered that smartphone use has a negative impact on the quality of life of children and adolescents.

Quality of life is also influenced by social support (Pramesona & Taneepanichskul, 2018). Support is a vital resource for improving health-related quality of life. The support received will assist a person in overcoming difficult situations, developing new solutions, and reducing despair. However, it is undeniable that smartphone users nowadays receive less social support than social media users on smartphones.

Uncontrolled smartphone use, frequent frequency, and avoiding stress can all contribute to smartphone addiction (Alhazmi et al., 2018; Cha & Seo, 2018; Kibona & Mgaya, 2015). Smartphone addiction tendency is defined as using a smartphone for an extended period of time that interferes with the user's daily life (Billieux et al., 2015). This condition demonstrates that individuals enjoy using their smartphones so much that they neglect other aspects of their lives (Al-Barashdi et al., 2015). Smartphone addiction is defined as an addictive behavior or attachment to a smartphone that causes social issues such as withdrawal and difficulties in daily activities (Kwon et al., 2013). Kwon et al. (2013) defined the components of smartphone addiction as follows: first, daily life disturbance anticipation (disorders in daily life), which are conditions in which smartphone users have difficulty concentrating on activities or work being performed because they are preoccupied with their smartphone. Second, there is positive anticipation, which includes feeling excited and using a smartphone to reduce or eliminate stress and feelings of emptiness. Third, there is withdrawal, a condition in which smartphone users become angry when they are disturbed while using their smartphones. Fourth, there are cyberspace-oriented relationships, which are situations in which a person has more friends on social media than in real life. Fifth, there is overuse, specifically excessive and uncontrolled smartphone use. This excessive use causes users to prefer to seek help via smartphones. Sixth, there is tolerance, which is a condition in which smartphone users consistently fail to control their smartphone use.

According to the National Information Society Agency of South Korea, Kwon et al. (2013), smartphone addiction affects approximately 8.4% of the population. Excessive reliance on smartphones can range from stress to addiction symptoms (Jun, 2015). Excessive smartphone use can lead to depression, anxiety, and poor sleep quality in users who have a low overall quality of life (Demirci et al., 2015). This is consistent with the findings of Buctot et al. (2020), who discovered a negative relationship between smartphone addiction and quality of life with a value (r) of -0.090. Similarly, Mascia et al. (2020) discovered a negative relationship between smartphone addiction tendencies and quality of life, with a value (r) of 0.161. However, Mahendra's (2019) research found no relationship between smartphone addiction tendency and quality of life with a value (r) of -0.092.

Moving on from the problems that occurred and several previous research studies, it is evident that excessive smartphone use causes quality of life issues in people. In this study, the researchers intend to use the context of students with disabilities caused by accidents. This considers the studies that researchers reviewed showing that previous studies have never done this research. This study aimed to determine the relationship between smartphone addiction tendencies and quality of life among students with disabilities. The proposed hypothesis is that

there is a negative relationship between smartphone addiction tendencies and quality of life in students with disabilities.

METHODS

The method used in this study was quantitative with a correlational design to see the relationship between the smartphone addiction tendency (X) and quality of life (Y) of students with disabilities. This study involved 33 participants selected using the snowball sampling technique. The inclusion criteria of the study were students with disabilities who were actively studying online with ages ranging from 18-22 years. Participant demographic data are described in Table 1.

Table 1. Participant Demographic Data

Characteristics of Participants	N	Percentage
Gender		
Male	13	34.4%
Female	20	60.6%
Total	**33**	**100%**
Age		
18	2	6.1%
19	13	39.4%
20	8	24.2%
21	3	9.1%
22	3	9.1%
23	4	12.1%
Total	**33**	**100%**
Class/Year of Study		
2021	5	15.2%
2020	12	36.4%
2019	8	24.2%
2018	7	21.2%
>2017	1	3%
Total	**33**	**100%**
Residence Status		
Boarding house / Rent	24	72.7%
Live with family	9	27.3%
Total	**33**	**100%**

The data collection method used in this study was an online Google Forms questionnaire distributed to students with disabilities. This was done because of the COVID-19 pandemic situation and the reach of participants in different areas. The two psychological scales used consist of the smartphone addiction tendency scale and the quality of life scale. The concept of smartphone addiction used in this study refers to the Smartphone Addiction Scale (SAS) measurement tool created by Kwon et al. (2013) with six aspects, including daily life disturbance anticipation, positive anticipation, withdrawal, cyberspace-oriented, overuse, and tolerance. Then, it was modified according to the characteristics of the participants so that there were 28 items with answer-choice statements based on the Likert scale. Each item was assigned a rating point range that indicated the appropriateness of the respondent's self-statement in as many as six answer choices, including strongly disagree (STS), disagree (ST), somewhat disagree (ATS), somewhat agree (AS), agree (S), and totally agree (SS). An example of a smartphone addiction

tendency scale item is "Using a smartphone is the most fun thing to do." The item selection values range from 308 to 750, with a Cronbach Alpha of 0.943.

Quality of life was measured using WHOQOL-BREF (2021), consisting of 26 items. The WHOQOL-BREF consisted of two sections which were derived from the overall quality of life and health in general, and one, which consisted of 24 questions from WHOQOL-100. Using the five Likert answer choices, there were four aspects: physical health, psychological well-being, social relations, and environmental relations. Each item was assigned a number of rating points based on the appropriateness of the respondent's self-statement of five answer choices. In items 1, 2, and 15, the respondents' self-statements were very bad, bad, mediocre, good, and very good. Items 3, 4, 5, 6, 7, 8, and 9 of the respondents' self-statements were not at all, a little, moderately, frequently, and excessively. Items 10, 11, 12, 13, and 14 self-statements of the respondents were not at all, a little, moderately, frequently, for fully experienced. Items 6, 17, 18, 19, 20, 21, 22, 23, 24, and 25 were very unsatisfactory, unsatisfactory, mediocre, satisfying, and very satisfying. And item 26 was never, rarely, quite rarely, very often, and always. All calculation results for each aspect were transformed into 0-100 according to WHOQOL-BREF provisions. The quality of life cut-off score was set at 60, with a higher score indicating a better or more satisfactory quality of life and a score less than 60 indicating a poor or dissatisfied quality of life. An example of a quality of life scale item is "How much availability of information do you need in your daily life?". The item selection values range from 368 to 781, with a Cronbach Alpha of 0.941.

The product-moment correlation test developed by Karl Pearson was used to test the relationship between the two variables in this study. Data analysis was performed using SPSS series 21 for windows.

RESULTS AND DISCUSSION

Table 2 shows the score of the smartphone addiction tendency obtained by disabled students, with the average in the moderate category with a percentage of 39.39%. Meanwhile, the quality of life score obtained by students with disabilities has an average in the high category with a percentage of 60.60%.

Table 2. Variable Categorization

Variable	*Mean*	*SD*	Percentage	Notes
Smartphone Addiction Tendency	99.61	25.680	39.39	Moderate
Quality of Life	84.1	13.912	60.60	High

As shown by the results of the normality test in Table 3, the smartphone addiction tendency variable has a K-S-Z value of 0.668 with sig. = 0.951 (p>0.05). Then the quality of life variable has a K-S-Z value of 0.764 with sig. = 0.326. Therefore, the smartphone addiction tendency and quality of life variables are normally distributed.

Table 3. Kolmogorov Smirnov-Test

	K-S-Z	*Significant*	Notes
Smartphone Addiction tendency	0.668	0.951	Normal
Quality of Life	0.764	0.326	Normal

As shown by the results of the linearity test in Table 4, the F difference value is 2.970 with sig. = 0.145 (p>0.05), indicating that the relationship between the smartphone addiction tendency and quality of life among students with disabilities is linear.

Table 4. ANOVA Linearity Test

	F	*Significant*	Notes
Deviation From Linearity	2.970	0.145	linear

As shown by the results of the correlation test in Table 5, it was found that the correlation coefficient between the smartphone addiction tendency and quality of life was -0.238 with sig = 0.091 (p>0.05), indicating that there was no significant negative relationship between the smartphone addiction tendency and quality of life in students with disabilities. This indicates that the higher the smartphone addiction tendency, the lower the quality of life of students with disabilities. The lack of variation in the quality of life of students with disabilities can explain why the smartphone addiction tendency will not always contribute or fully impact the quality of life, especially for students with disabilities.

Table 5. Karl Pearson Correlation Test

	r	*Significant*	Notes
Pearson Correlation	-0.238	0.091	No relationship

Based on the results of the correlation test analysis, the correlation coefficient was (r) -0.238 with a significant value of 0.091 (p>0.05), indicating that there was no significant negative relationship between smartphone addiction tendency and quality of life in students with disabilities. This could occur because students with disabilities do not always spend time with smartphones. This study's criterion for students with disabilities was students with disabilities caused by accident.

Based on the results of interviews with students with disabilities, it was found that the students were able to maintain their lives well so that they felt safe and enjoyed their lives in everyday life. According to the participant's responses to the quality of life item 1 questionnaire (60.60%), the participants felt good about assessing their quality of life. The average participant then falls into the high category for quality of life, with a percentage of 60.60%. According to WHOQOL-BREF (2012), the cut-off score for quality of life is 60, with a higher score indicating a better or satisfactory quality of life.

Several factors affect the quality of life of students with disabilities, including interactions with the social environment. According to the findings of the interviews, students with disabilities had positive interactions with their social environment. This has an impact on the psychological well-being of students with disabilities. According to Supraba et al. (2016), the better the social interaction, the better the students' quality of life and psychology.

Apart from social interaction, which is an external factor, internal factors also influence the quality of life of students with disabilities, including spirituality. Gallardo-Peralta's (2017) research reveals that spirituality is crucial for the quality of life. The existence of spiritual well-being reflects a good quality of life where people live in harmony with regard to the meaning, goals, and values of life, including physical, biological, and feelings (Bernard et al., 2017). This is consistent with the findings of interviews with disabled students, which show that the spirituality experienced by disabled students provides peace and avoids self-anxiety, resulting in a quality of life. Without spiritual well-being, the psychological, social, and physical dimensions will not reach their full potential, resulting in a lower quality of life (Chatterji et al., 2015).

It was also found that social support is one of the factors that can improve the quality of life of students with disabilities. As it is known that social support comes from people who have meaningful relationships with individuals such as family, close friends, spouses, co-workers, neighbors, and relatives (Isfaiyah et al., 2019). The form of social support felt by disabled students is the emergence of a sense of self-confidence in their social environment. The self-

confidence that arises as a result of social support increases positive beliefs in individuals (Kartini, 2019).

When viewed, the dynamics of the smartphone addiction tendency shown by students with disabilities fall into the moderate category, which leads to ways students with disabilities can control the use of their smartphones. This is consistent with the findings of interviews conducted with students with disabilities who stated that they only use their smartphones when they need to do something. The activity in question is completing academic assignments via a smartphone. Regarding the reasons for using smartphones among Bandung State Polytechnic students, Parmuarip et al. (2012) stated that smartphones could be used as social media as well as multimedia for learning, information seeking, and entertainment. The study also explained that 53% of the participants felt that they had increased their knowledge with the use of smartphones, which made it easier for them to access information efficiently on the internet.

Students with disabilities also revealed that a lack of free time to spend with smartphones was caused by infrequent smartphone use due to various activities. This finding is consistent with Mahendra's (2019) research, which found that having limited time due to other activities provides fewer smartphone use opportunities.

In addition, smartphones have social media networking capabilities that can pique the interest of smartphone users. Because users can access anything via a smartphone, the various interesting features provided can certainly give the feeling of continuing to use a smartphone (Aziz, 2016). It is undeniable that it will result in smartphone addiction. According to the findings of the Mulyati and Frieda (2019) study, social media can be used to predict smartphone preferences. However, the role of self-control can foresee the emergence of smartphone addiction tendencies. It is supported by research conducted by Sulaiman (2017) that self-control plays an important role in smartphone use. The results of Agusta's (2016) research revealed that psychological factors had the highest average score of 64% influencing the occurrence of smartphone addiction compared to other factors such as social, situational, and media influences and smartphone facilities. The psychological factor in question is low self-control. Jiang and Zhao (2016) argued that individuals who have low self-control are more likely to use smartphones pathologically. Therefore, individuals with high self-control can reduce the tendency for smartphone addiction

CONCLUSION

This study concludes that there is no relationship between smartphone addiction tendency and quality of life among students with disabilities. The smartphone addiction tendency is in the medium category, while the quality of life is in the high category. Future research is expected to be more specific regarding the types of disabilities to be studied and expand the number of participants in order to influence the research results.

REFERENCES

Agusta, D. (2016). Faktor-faktor resiko kecanduan menggunakan smartphone pada siswa di SMK Negeri 1 Kalasan Yogyakarta. *Jurnal Riset Mahasiswa Bimbingan Dan Konseling*, *5*(3). https://journal.student.uny.ac.id/index.php/fipbk/article/view/1021

Alhazmi, A. A., Alzahrani, S. H., Baig, M., Salawati, E. M., & Alkatheri, A. (2018). Prevalence and factors associated with smartphone addiction among medical students at King Abdulaziz University, Jeddah. *Pakistan Journal of Medical Sciences*, *34*(4). https://doi.org/10.12669/pjms.344.15294

Asa, G. A., Fauk, N. K., Ward, P. R., Hawke, K., Crutzen, R., & Mwanri, L. (2021). Psychological, sociocultural and economic coping strategies of mothers or female caregivers of children with a disability in Belu district, Indonesia. *PLOS ONE*, *16*(5), e0251274. https://doi.org/10.1371/journal.pone.0251274

Aziz, A. (2016). Handphone mempengaruhi terhadap perilaku remaja usia SLTP (13-15 tahun) di dusun Tegalpare kecamatan Muncar kabupaten Banyuwangi. *Jurnal Darussalam: Jurnal Pendidikan, Komunikasi Dan Pemikiran Hukum Islam*, *7*(2), 352–377. https://doi.org/10.30739/darussalam.v7i2.23

Bernard, M., Strasser, F., Gamondi, C., Braunschweig, G., Forster, M., Kaspers-Elekes, K., Walther Veri, S., Borasio, G. D., Pralong, G., Pralong, J., Marthy, S., Soloni, C., Bisi, C., & Magaya, N. K. (2017). Relationship between spirituality, meaning in life, psychological distress, wish for hastened death, and their influence on quality of life in palliative care patients. *Journal of Pain and Symptom Management*, *54*(4), 514–522. https://doi.org/10.1016/j.jpainsymman.2017.07.019

Billieux, J., Schimmenti, A., Khazaal, Y., Maurage, P., & Heeren, A. (2015). Are we overpathologizing everyday life? A tenable blueprint for behavioral addiction research. *Journal of Behavioral Addictions*, *4*(3), 119–123. https://doi.org/10.1556/2006.4.2015.009

Buctot, D. B., Kim, N., & Kim, J. J. (2020). Factors associated with smartphone addiction prevalence and its predictive capacity for health-related quality of life among Filipino adolescents. *Children and Youth Services Review*, *110*, 104758. https://doi.org/10.1016/j.childyouth.2020.104758

Cha, S.-S., & Seo, B.-K. (2018). Smartphone use and smartphone addiction in middle school students in Korea: Prevalence, social networking service, and game use. *Health Psychology Open*, *5*(1), 205510291875504. https://doi.org/10.1177/2055102918755046

Chatterji, S., Byles, J., Cutler, D., Seeman, T., & Verdes, E. (2015). Health, functioning, and disability in older adults—present status and future implications. *The Lancet*, *385*(9967), 563–575. https://doi.org/10.1016/S0140-6736(14)61462-8

Demirci, K., Akgönül, M., & Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioral Addictions*, *4*(2), 85–92. https://doi.org/10.1556/2006.4.2015.010

Dixon-Ibarra, A., & Horner-Johnson, W. (2014). Disability status as an antecedent to chronic conditions: National health interview survey, 2006–2012. *Preventing Chronic Disease*, *11*, 130251. https://doi.org/10.5888/pcd11.130251

Fischer-Grote, L., Kothgassner, O. D., & Felnhofer, A. (2019). Risk factors for problematic smartphone use in children and adolescents: a review of existing literature. *Neuropsychiatrie*, *33*(4), 179–190. https://doi.org/10.1007/s40211-019-00319-8

Gallardo-Peralta, L. P. (2017). The relationship between religiosity/spirituality, social support, and quality of life among elderly Chilean people. *International Social Work*, *60*(6), 1498–1511. https://doi.org/10.1177/0020872817702433

Haase, C. M., Heckhausen, J., & Wrosch, C. (2013). Developmental regulation across the life span: Toward a new synthesis. *Developmental Psychology*, *49*(5), 964–972. https://doi.org/10.1037/a0029231

Handarini, D. M. (2019). Kontribusi faktor-faktor non-kognitif pada prestasi belajar siswa sekolah menengah pertama. *Psychology, Evaluation, and Technology in Educational Research*, *1*(2). https://doi.org/10.33292/petier.v1i2.22

Hermawan, H., Samsuri, S., Kurniawati, D. P., Sofyaningsih, V., & Prasetyo, D. (2018). The use of controversial public issues with video and macromedia flash player media in civic education learning. *Psychology, Evaluation, and Technology in Educational Research*, *1*(1), 19. https://doi.org/10.33292/petier.v1i1.2

Isfaiyah, I., Rahmawati, R., & Dalimunthe, R. Z. (2019). Hubungan dukungan sosial teman sebaya dengan resiliensi siswa serta implikasi terhadap bimbingan pribadi-sosial. *Jurnal Penelitian Bimbingan Dan Konseling*, *4*(2). https://doi.org/10.30870/jpbk.v4i2.6721

Jiang, Z., & Zhao, X. (2016). Self-control and problematic mobile phone use in Chinese college students: the mediating role of mobile phone use patterns. *BMC Psychiatry*, *16*(1), 416. https://doi.org/10.1186/s12888-016-1131-z

Jun, W. (2015). An analysis study on correlation of internet addiction and smartphone addiction of teenagers. *2015 2nd International Conference on Information Science and Security (ICISS)*, 1–3. https://doi.org/10.1109/ICISSEC.2015.7370978

Kartini, S. (2019). *Krisis percaya diri*. Mutiara Aksara.

Kibona, L., & Mgaya, G. (2015). Smartphones' effects on academic performance of higher learning students. *Journal of Multidisciplinary Engineering Science and Technology (JMEST)*, *2*(4), 777–784. https://www.jmest.org/wp-content/uploads/JMESTN42350643.pdf

Kumar S., G. (2014). Quality of life and its associated factors using WHOQOL- BREF among elderly in Urban Puducherry, India. *Journal of Clinical and Diagnostic Research*, *8*(1). https://doi.org/10.7860/JCDR/2014/6996.3917

Kurt, D., & Uçanok, Z. (2020). Yaşam boyu gelişimde motivasyon kuramı çerçevesinde kontrol stratejilerinin incelenmesi. *Psikoloji Çalışmaları / Studies in Psychology*, *40*(1), 187–215. https://doi.org/10.26650/SP2019-0040

Kwon, M., Kim, D.-J., Cho, H., & Yang, S. (2013). The smartphone addiction scale: Development and validation of a short version for adolescents. *PLoS ONE*, *8*(12), e83558. https://doi.org/10.1371/journal.pone.0083558

Lahelma, E., Pietiläinen, O., Rahkonen, O., & Lallukka, T. (2015). Common mental disorders and cause-specific disability retirement. *Occupational and Environmental Medicine*, *72*(3), 181–187. https://doi.org/10.1136/oemed-2014-102432

Machfiroh, R., Sapriya, S., & Komalasari, K. (2018). Characteristics of young Indonesian citizenship in the digital era. *Proceedings of the Annual Civic Education Conference (ACEC 2018)*. https://doi.org/10.2991/acec-18.2018.2

Mahendra, W. S. (2019). *Hubungan antara kecanduan smartphone terhadap kualitas hidup mahasiswa kedokteran Universitas Sebelas Maret* [UNS (Sebelas Maret University)]. https://digilib.uns.ac.id/dokumen/detail/72294/Hubungan-antara-kecanduan-smartphone-terhadap-kualitas-hidup-mahasiswa-kedokteran-Universitas-Sebelas-Maret

Mascia, M. L., Agus, M., & Penna, M. P. (2020). Emotional intelligence, self-regulation, smartphone addiction: Which relationship with student well-being and quality of life? *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.00375

McNeil, J. J., Woods, R. L., Nelson, M. R., Reid, C. M., Kirpach, B., Wolfe, R., Storey, E., Shah, R. C., Lockery, J. E., Tonkin, A. M., Newman, A. B., Williamson, J. D., Margolis, K. L., Ernst, M. E., Abhayaratna, W. P., Stocks, N., Fitzgerald, S. M., Orchard, S. G., Trevaks, R. E., … Murray, A. M. (2018). Effect of Aspirin on disability-free survival in the healthy elderly.

New England Journal of Medicine, *379*(16), 1499–1508. https://doi.org/10.1056/NEJMoa1800722

Mulyati, T., & Frieda, N. R. H. (2019). Kecanduan smartphone ditinjau dari kontrol diri dan jenis kelamin pada siswa SMA Mardisiswa Semarang. *Jurnal Empati*, *7*(4), 1307–1316. https://doi.org/10.14710/empati.2018.23438

Octari, T. E., Suryadi, B., & Sawitri, D. R. (2020). The role of self-concept and health locus of control on quality of life among individuals with diabetes. *Jurnal Psikologi*, *19*(1), 80–94. https://doi.org/10.14710/jp.19.1.80-94

Parmuarip, L., Muslim, W., & Mulyani, Y. (2012). *Alasan penggunaan smartphone di kalangan mahasiswa Politeknik Negeri Bandung*. Politeknik Negeri Bandung.

Pramesona, B. A., & Taneepanichskul, S. (2018). Factors influencing the quality of life among Indonesian elderly. *Journal of Health Research*, *32*(5), 326–333. https://doi.org/10.1108/JHR-08-2018-037

Undang Undang Republik Indonesia Nomor 4 Tahun 1997 Tentang Penyandang Cacat, (1997).

Undang-Undang Republik Indonesia Nomor 8 Tahun 2016 tentang penyandang disabilitas, Pub. L. No. 8 (2016).

Solis, A. C., & Lotufo-Neto, F. (2019). Predictors of quality of life in Brazilian medical students: a systematic review and meta-analysis. *Brazilian Journal of Psychiatry*, *41*(6), 556–567. https://doi.org/10.1590/1516-4446-2018-0116

Sulaiman, A. I. (2017). Konstruksi makna dampak media internet penggunaan media internet oleh pelajar di Kota Purwokerto Kabupaten Banyumas. *Jurnal Penelitian Komunikasi*, *14*(1), 53–62. https://doi.org/10.20422/jpk.v14i1.168

Supraba, N. P., Widarini, N. P., & Ani, L. S. (2016). Hubungan antara fungsi sosial dengan kualitas hidup lanjut usia di Kota Denpasar. *Public Health and Preventive Medicine Archive*, *4*(2), 126–129. https://doi.org/10.15562/phpma.v4i2.69

Supratiwi, M., Yusuf, M., & Anggarani, F. K. (2021). Mapping the challenges in distance learning for students with disabilities during COVID-19 pandemic: Survey of special education teachers. *International Journal of Pedagogy and Teacher Education*, *5*(1), 11. https://doi.org/10.20961/ijpte.v5i1.45970

Thompson, K., Kramarchuk, M., Yagnatovsky, M., Kunichoff, D., Zacchilli, M., Campbell, K. A., Alaia, M., Jazrawi, L., & Strauss, E. (2020). Pain catastrophizing is associated with increased physical disability in patients with anterior knee pain. *Journal of Orthopaedics*, *21*, 283–286. https://doi.org/10.1016/j.jor.2020.04.021

Wong, W., Li, Y., Sun, X., & Xu, H. (2014). The control processes and subjective well-being of Chinese teachers: evidence of convergence with and divergence from the key propositions of the motivational theory of life-span development. *Frontiers in Psychology*, *5*. https://doi.org/10.3389/fpsyg.2014.00467

World Health Organization. (2012). *WHOQOL user manual: Programme on mental health*. World Health Organization.

Yan, C., Liao, H., Ma, Y., Xiang, Q., & Wang, J. (2021). Association among multimorbidity, physical disability and depression trajectories: a study of urban–rural differences in China. *Quality of Life Research*, *30*(8), 2149–2160. https://doi.org/10.1007/s11136-021-02807-3