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Internet Addiction, Sense of Belonging and Peer Relations as Predictors of Psychological Well-Being among Students of Imo State University, Owerri.

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Abstract

The study examined Internet addiction, sense of belonging and peer relations as predictors of psychological well-being among students of Imo State University (IMSU), Owerri, Imo state, Nigeria. The study adopted cross sectional survey design and multi-stage sampling technique. Simple random sampling technique was used for the selection of 5 faculties out of 12 in IMSU, Owerri, while convenience sampling technique was used in the selection of 497 students from the selected faculties. The participants comprised of 247 male and 250 female students within the age range of 19 to 30 years, with a mean age of 24.12 and standard deviation age of 2.75. Four instruments were used for data collection including: Internet Addiction Test (IAT), Sense of Belonging Instrument– Psychological State (SOBI-P), Index of Peer Relations Scale (IPR) and Psychological Wellbeing Scale (PWS). Data were analysed using Multiple Regression Statistics. The results confirmed the hypotheses. Internet addiction significantly predicted psychological wellbeing among students of IMSU, Owerri. Sense of belonging significantly predicted psychological wellbeing among students of IMSU, Owerri. Finally, peer relations significantly predicted psychological wellbeing among students of IMSU, Owerri. The study recommends, among other things, that School and Counselling Psychologists employed in Imo State University should provide counselling and intervention services to identified students with internet addiction problems, poor peer relationships and decreased mental wellbeing.

Keywords: **Internet addiction, Owerri, Peer Relations, Psychological Wellbeing, Sense of Belonging.**

Introduction

Psychological well-being is a critical aspect of overall health, encompassing emotional, social, and mental functioning (Huppert & So, 2020). Among university students, psychological well-being is particularly important, as it influences academic performance, social relationships, and long-term mental health outcomes (Eisenberg, Lipson & Gershkovich, 2020). Research has shown that psychological well-being is associated with life satisfaction, positive emotions, and resilience (Diener, Lucas & Oishi, 2020).

However, university students face numerous challenges that can compromise their psychological well-being, including excessive internet use, social isolation, and strained peer relationships. Internet addiction, characterized by compulsive and excessive internet use, has been linked to decreased psychological well-being, increased stress, and decreased face-to-face social skills (Kuss & Griffiths, 2020). Sense of belonging, defined as feeling connected and accepted within a social group, is another crucial factor influencing psychological well-being (Hagerty, Williams, Coyne & Early, 2020). University students who experience a strong sense of belonging tend to have better mental health outcomes, including reduced symptoms of depression and anxiety (Stickley, Koyanagi & Inoue, 2020). Peer relations, including social support and relationships with peers, also play a significant role in shaping psychological well-being (Hartup & Stevens, 2020). Positive peer relationships can foster emotional support, self-esteem, and overall well-being, while negative peer interactions can lead to increased stress, anxiety, and decreased well-being (Laible, Carlo, & Eye, 2020).

This study aims to investigate the internet addiction, sense of belonging, peer relations as predictors of psychological well-being among students of Imo State University, Owerri. By examining these factors, this research seeks to identify key predictors of psychological well-being and provide insights for developing targeted interventions to promote healthy internet use, social connections, and mental health among university students.

Statement of the Problem

Despite the importance of psychological well-being among university students, there is growing concern about the impact of excessive internet use, social isolation, and strained peer relationships on mental health outcomes. Specifically, the increasing prevalence of internet addiction, declining sense of belonging, and deteriorating peer relations among students of Imo State University, Owerri, pose a significant threat to their psychological well-being. However, there is a lack of empirical research investigating the relationships between these factors and psychological well-being among this population. This knowledge gap necessitates an investigation into the predictive roles of internet addiction, sense of belonging, and peer relations on psychological well-being among students of Imo State University, Owerri, to inform the development of targeted interventions and support services.

Purpose of the Study

The general purpose of the present study is to examine Internet Addiction, Sense of Belonging and Peer Relations as predictors of Psychological Well-being among Students of Imo State University, Owerri, Imo State, Nigeria. Specifically, the study aims at:

1. Investigating if internet addiction will significantly predict psychological well-being of Imo State University Students, Owerri, Imo state.

2. Determining if sense of belonging will significantly predict psychological well-being of Imo State University Students, Owerri, Imo state.

3. Ascertaining if peer relations will significantly predict psychological well-being of Imo State University Students, Owerri, Imo state.

Theoretical Framework

A suitable theoretical framework for this present study is the Social Cognitive Theory (SCT) by Albert Bandura (1986). The theory posits that personal factors, environmental factors and behavioural factors interact and influence one another, ultimately shaping an individual's behaviour and well-being.

SCT can be applied to examine how internet addiction, sense of belonging, and peer relations interact and impact psychological well-being among university students. The personal factors (e.g., thoughts, feelings, beliefs and attitudes), influence behaviour. Students' thought about internet use or self-efficacy beliefs (e.g., "I can manage my internet use") tends to affect their behaviour. Environmental factors (e.g., sense of belonging and peer relationships) can impact behaviour. Students' peer group (environmental factor) may encourage excessive internet use thereby influencing their behaviour. Behavioural Factors in this case internet use and addiction are actions and behaviours that are influenced by personal and environmental factors. Students' excessive internet use and addiction (behavioral factor) may affect the sense of belonging and peer relations (environmental factor), which in turn would influence their self-efficacy beliefs and thoughts (personal factor).

By applying SCT, the study can investigate how these factors interact and influence psychological well-being, providing insights for developing targeted interventions and support services.

Related Empirical Reviews of Internet Addiction, Sense of Belonging and Peer Relations on Psychological Well-Being

Duarah (2023) examined the impact of internet addiction on the psychological wellbeing of college students. The sample size of the study was 60 and was drawn using convenience sampling technique, with participant age group range from 18-25 years. The samples were collected from Karnataka and Assam. Internet Addiction Test and The Warwick-Edinburgh Mental Well-being Scale were used to collect data. One hypothesis was postulated and tested using correlation statistic. The result showed that there is no significant relationship between internet addiction and psychological well-being among the college students. Toma, Hancock and Ellison, (2020) in their study observed a significant relationship between social media use and mental health among adults in the United States of America. The study comprised of 1,043 participants, whose ages ranged from 18-30 years old. Data was collected online, snowball sampling technique was used and multiple regression analysis alongside Pearson correlations were the statistical methods used for data analysis. Results showed that individuals who spent more than 4 hours/day on social media were more likely to experience drastic decrease in mental health.

Zhang, Zeng, Wang, Wang, Sun, Zeng, and Hao (2023) examined status of medical students' sense of school belonging and its relationship with depression and anxiety symptoms in the context of COVID-19 prevention and control. An online questionnaire survey was conducted among 1,629 full-time students from 8 medical universities. The 18-item psychological sense of school membership scale (PSSM-18), 9-item patient health questionnaire (PHQ-9), and 7-item generalized anxiety disorder scale (GAD-7) were used as measurements. Spearman correlation coefficients were used to analyze the correlations between PSSM-18, PHQ-9, and GAD-7 scores. Logistic regressions were used to analyze the impact of lack of school belonging on depression and anxiety symptoms. The findings revealed that lack of school belonging increases the risk of depression and anxiety symptoms. It was recommended that the school should strengthen health education and support services to improve the students' sense of belonging and alleviate their mental health problems. Hagerty, Williams, Coyne and Early, (2020) carried out a study on Sense of belonging and mental health among university students in the United States. Five hundred participants were involved in the study. The online survey was conducted using stratified sampling technique. Both Hierarchical regression analysis and ANOVA were used to analyze the collected data. Findings of the study showed that students who felt a strong sense of belonging in their university community reported higher levels of life satisfaction and psychological well-being.

Cruz, Torre, Castaños and Tus (2022) examined the correlation between peer relations and the mental well-being of senior high school students. The primary goal of the research was to establish the correlation between the components of peer relations and the respondents' mental well-being. A descriptive correlational method was utilized with a total number of two hundred twenty-six (226) senior high school students participating in the study. The data were gathered through Perceived Peer Pressure Scale Questionnaire (PPPS) and Well-being Questionnaire. Based on the statistical analysis, there was a significant correlation between peer pressure and mental well-being of the students (r=.363). The researchers thus recommended the promotion of positive peer pressure outcomes in the classroom. They encouraged that students should not rush themselves or yield to peer pressure in order to fit in and belong to a group of peers. Nelson, Padilla-Walker and Nielson, (2020) in an online survey carried out in the United States reported a significant

relationship between adolescents' peer relationships and mental health. The study was conducted among 1,200 high school campus adolescents in grades 9-12. One hypothesis was proposed and data was collected using cluster sampling, Structural equation modeling and regression analysis were the Statistics used to analyze the data. Laible, Carlo and Davis, (2020) carried out a research on the role of peer relationships in adolescent depression and anxiety. Eight hundred participants who are grades 6-8 adolescents were involved for the study. Stratified sampling technique, Hierarchical linear modeling and regression analysis were used for data analysis. The researcher found that adolescents who reported positive peer relationships had lower levels of depression and anxiety

Hypotheses
1. Internet addiction will significantly predict psychological well-being of Imo State University Students, Owerri, Imo state.
2. Sense of belonging will significantly predict psychological well-being of Imo State University Students, Owerri, Imo state.
3. Peer relations will significantly predict psychological well-being of Imo State University Students, Owerri, Imo state.

Participants
The researchers involved a total number of 497 participants comprising of 247 male and 250 female Students of Imo State University, Owerri, in Imo State, Nigeria. They were drawn from five different faculties randomly selected for the study. The participants were selected using convenience sampling technique; 97 from Faculty of Agriculture and Veterinary Medicine, 110 from Faculty of Business Administration, 110 from Faculty of Education, 90 from Faculty of Engineering, and 90 from Faculty of Environmental Sciences. The participant's age ranged from 19 to 30 years, with a mean age of 24.12 and standard deviation age of 2.75.

Instruments
Four instruments were adopted for the present study. First, Internet Addiction Test (IAT) developed by Young and Abreu (2010) which is used to measure online behaviours linked with uncontrollable internet use, including escapism, dependency, and compulsivity. The 20 items are randomized and measured based on a 6-point Likert-scale ranging from 0 - does not apply to 5 - always. Scores of 0 to 30 indicate a normal IA level, scores of 31 to 49 show a mild IA level, scores of 50 to 79 imply a moderate IA level, and scores of 80 to 100 designate a severe IA level (Young, & Abreu, 2010). The psychometric properties for IAT in a Nigerian population were obtained by Akpunne, Akinnawo, Alakija, and Kumuyi (2020). The obtained IAT cutoff score is ≥ 48.4 for males and ≥ 45.1 for females. The Nigerian version of IAT showed a Cronbach's alfa coefficient of 0.79, a Spearman-Brown coefficient correlation of 0.76, a Guttman Split-Half coefficient of 0.76, and a corrected item-total correlation range of $r = 0.73$ to $r = 0.84$ (Akpunne, Akinnawo, Alakija & Kumuyi, 2020). To further ascertain the reliability of the scale, the researchers conducted a pilot study with 120 participants, 61 males and 59 females from faculty of social sciences in Imo State University, Owerri. A Reliability Coefficient of .96 was obtained which proved the scale reliable. The mean scores of the questionnaire is 60.25 and standard deviation of 19.64. Samples of the scale are: "How often do you find that you stay online longer than you intended?" and "How often do you check your email before something else you need to do?"

Second, Sense of Belonging Instrument–Psychological State (SOBI-P) is a 14-item scale developed by the researchers to measure the psychological perception and experience of belonging / valued in a group. Responses are on a four-point Likert-Format, ranging from 1 (strongly disagree) to 4 (strongly agree). To ascertain the reliability of the instrument, the researchers conducted a pilot study with 120 participants, 61 males and 59 females (19 to 30 years of age) from faculty of social sciences in Imo State University, Owerri, Imo State. A Cronbach's Alpa Coefficient of .79 was obtained which proved the scale reliable. A high face value was also obtained by giving out the instrument to five Experts in Psychology department to rate with a rating scale of 5 likert format from 5- 'the test is extremely suitable for a given purpose', 4 - 'the test is very suitable for the purpose', 3 - 'the test is adequate', 2 – 'the test is inadequate' to 1- 'the test is irrelevant and therefore unsuitable'. Three of the Experts rated the instrument 4 saying the test is very suitable for the purpose, while the other two of the Experts rated it 3 saying that the test is adequate to serve its purpose. Sample items of the SOBI-P include: "I generally feel that people do not accept me" and "I feel like my

opinions are not valued. To obtain a score of an individual, the correct point of each item is added together to have a total score. The questionnaire has a mean of 51.29 which serves as the norm. The items of the questionnaire are constructed in such a way that higher scores than the norm indicate little or no sense of belonging while lower scores than the norm indicates a high sense of belongingness.

Third, Index of Peer Relations Scale (IPR) developed by Hudson, Nurius, Daley and Newsome, (1986) is to measure the problems of interpersonal relationship with peers. IPR assesses the extent, severity or magnitude of the problems of interpersonal relationship a client is experiencing in the course of social interaction with peers who include neighbourhood kids, school mates, co-workers, club members and other social groups. It contains 25 statements (items) scored in a 5-likert format which ranges from 1- rarely or none of the time to 5- Most or all of the time. Some sample items of the questionnaire include: 'I get along very well with my peers'; 'my peers really seem to respect me'. In the same pilot study as above, using 120 participants, 61 males and 59 females (19 to 30 years of age) from faculty of social sciences in Imo State University, Owerri, Imo State, a Cronbach's Alpa Coefficient of .84 was obtained as reliability measure of the instrument. IPR is scored both directly and in reverse order. The direct scored items include: 2, 3, 5, 6, 9, 10, 13, 14, 19, 20, 23, 24 and 25 while the reverse scored items are: 1, 4, 7, 8, 11, 12, 15, 16, 17, 18, 21 and 22. To obtain an IPR score of an individual, the results of both direct and reverse scores are added together as a total score and 25 subtracted from the total score. The mean score of the scale is 34.17, scores higher than the norm indicate "poor peer relations" while scores lower than the norm shows "appropriate peer relations".

Fourth, Psychological Well-being Scale (PWS) developed by Ryff, and Keyes (1995) was used to measure undergraduates' wellbeing on two dimensions: position relation and purpose in life. Item 2, 3, 6, 10, 11, and 14 are reversely scored, while the rest items are directly scored. The total score for each respondent is arrived by sum up scores for each item. Responses are totaled for each of the six dimensions. For each dimension, a high score indicates that the respondent has a mastery of that area in his or her life. Conversely, a low score shows that the respondent struggles to feel comfortable with that particular dimension. Ryff, and Keyes (1995) reported internal consistency coefficient between 0.86 and 0.93 and a six-weeks test-retest reliability coefficient of 0.81-0.88. PWS for Nigerian sample, showed mean total of 119.9 (SD = 23.64). For the domains of PWS, students had mean scores of 25.75 (6.10), 14.12 (SD = 3.89), and 13.70 (SD = 4.04); for positive relations (n = 7; α = .50), and purpose in life (n = 7; α = .60) respectively (Ugwueze, Agbaje, Umoke, & Ozoemena, 2021). To further ascertain the reliability of the scale, the researchers conducted a pilot study with 120 participants, 61 males and 59 females from faculty of social sciences in Imo State University, Owerri. A Reliability Coefficient of .98 was obtained which proved the scale reliable. The mean scores of the questionnaire is 51.29 and standard deviation of 8.29. Sample items of the scale are: "I have a sense of direction and purpose in life." and "I sometimes feel as if I've done all there is to do in life".

Procedure

Up on agreement by the researchers, they proceeded for data collection. First, five faculties from Imo State University, Owerri, namely: Faculty of Agriculture and Veterinary Medicine, Faculty of Business Administration, Faculty of Education, Faculty of Engineering, and   Faculty of Environmental Sciences were randomly selected by the researchers. This was done by writing out all the faculties in the institution alphabetically and the first five were used for the study. In each of the selected faculties, the participants were sampled with convenience sampling technique. Students who were willing and volunteered to participate in the study received the questionnaire distributed by the researchers. The participants were duly informed about the nature of the study. They were assured that the study was purely for academic purpose and would have no harm or negative consequence on anyone. Participants completed the questionnaires assessing internet addiction, sense of belonging, peer relations and psychological well-being. It took about 35 minutes for the four copies of different questionnaire to be completed by the participants. The researchers distributed 550 copies of the questionnaire in five different faculties (110 copies each) in IMSU, Owerri and 521 were returned. Out of the returned ones, 24 had missing and inconsistent responses. The 24 unsatisfactory responses were discarded while the remaining 497 satisfactory responses were used for data analysis. The data collection process was done within two weeks of distribution of questionnaire. The researchers ensured that all ethical principles were upheld throughout the data collection process.

Design and Statistic

The design used for the study is Cross Sectional Survey Design. This helped for easy collection of data from both male and female students of IMSU, Owerri, across different faculties and disciplines. The statistical method employed is a three-step Hierarchical Multiple Regression Statistic. As described by Gravetter and Wallnau, (2000) a three-step hierarchical multiple regression statistic is designed to explore the predictive relationship between one continuous dependent variable and a number of predictors (independent variables); also it enables an easy accessibility of relatively predictive contribution of each variable (Pallant, 2005).

Results

Table 1: Correlation of Psychological Wellbeing, Internet Addiction, Sense of Belonging and Peer Relations.

Variables	1	2	3	4
1.Psychological Wellbeing	1	-.307	.570	-.718
2.Internet Addiction		1	-.263	.275
3.Sense of Belonging			1	-.845
4.Peer Relations				1

*= p<.05,   N=497

Table 1 above shows that psychological wellbeing negatively correlated with internet addiction and peer relations (r= - .31; -.71; P> .05 respectively); psychological wellbeing positively corrected with sense of belonging (r=.57; P> .05). Sense of belonging negatively correlated with peer relations (r= .85; P> .05). Internet Addiction negatively correlated with Sense of belonging and positively correlated with peer relations (r= -.26; .28; P> .05) respectively.

Table 2: Results of three-steps Hierarchical Multiple Regression Analyses for Psychological Wellbeing on Internet Addiction, Sense of Belonging and Peer Relations among Students of Imo State University, Owerri.

Predictors	Psychological Wellbeing		
	Step 1 β	*Step 2 β*	*Step 3 β*
Step 1			
Internet Addition	-.307	-.169	-.123
Step 2			
Sense of Belonging.		.525	-.141
Step 3			
Peer Relations			-.803
ΔF	57.423	195.511	192.909
R²	.094	.351	.183
ΔR²	.094	.257	.183
Df	1,495	1,494	1,493

*Note: N = 497, *p < .05,*

From table 2 above, internet addition negatively predicted psychological wellbeing (B= -.31; t= 38.097; P> .05). Therefore hypothesis 1 is confirmed.

The results also shows that sense of belonging positively predicted psychological wellbeing (P= .53; t= 13.983) (B= .53; t= 13.983; P> .05). Therefore hypothesis 2 is accepted.

Finally, peer relations negatively predicted psychological wellbeing (B= -.81; t=-13.889; P> .05) Therefore hypothesis 3 is confirmed as well.

Summary of the results

1. Internet addiction significantly predicted psychological well-being among students of IMSU, Owerri.
2. Sense of belonging significantly predicted psychological well-being among students of IMSU, Owerri.
3. Peer relations significantly predicted psychological well-being among students of IMSU, Owerri.

Discussion of findings

The study investigated the impact of internet addiction, sense of belonging, and peer relations on psychological well-being among IMSU students. The results showed that all three variables significantly predicted psychological well-being. The results are supported by the SCT which posits that personal factors, environment, and behaviour interact to influence learning and general behaviour (Bandura, 1986). In this study therefore, internet addiction, sense of belonging, and peer relations can be seen as environmental factors that influence psychological well-being.

Looking at the specific results of the present study, internet addition negatively predicted psychological wellbeing of IMSU students implying that students who spend more time online were found to have reduced psychological wellbeing. The result is in line with the study of Toma, Hancock and Ellison, (2020) who found that individuals who spent more than 4 hours/day on social media were more likely to experience depression and anxiety. Excessive internet use can lead to social isolation, decreased face-to-face interactions, and increased stress (Kim, Lau & Cheuk, 2017). This study supports the idea that internet addiction can negatively impact psychological well-being. Students who spend excessive hours playing online games and other time consuming browsings, tend to neglect their studies, social relationships, physical and psychological health.

Sense of belonging is a critical aspect of psychological well-being as confirmed by the present study. The sense of belonging among IMSU students positively predicted their psychological wellbeing. A student who joins a campus club, feeling connected to like-minded peers will as well experience improved mental health and well-being. Liu, Wang and Li, (2022) in their studies also observed that feeling connected to others can enhance mental health and well-being. Research showed that students who felt a strong sense of belonging in their university community reported higher levels of life satisfaction and psychological well-being (Hagerty, Williams, Coyne, & Early, 2020).

Finally, the present study supports the importance of peer relations in predicting psychological well-being. The result confirmed that peer relations negatively predicted psychological wellbeing of IMSU students. Poor peer relations were associated with reduced Psychological wellbeing, where appropriate peer relationship was associated with high psychological wellbeing. The present finding is in line with other studies. Students who struggle with social anxiety but finds support and encouragement from close friends tend to have improved mental health (Nelson, Padilla-Walker & Nielson, 2020). Another study found that adolescents who reported positive peer relationships had lower levels of depression and anxiety (Laible, Carlo & Davis, 2020).

Implications of the Study

The results of the study have several theoretical and practical implications for researchers, university administrators, policymakers, lecturers, psychologists and other stakeholders involved in the provision of students services on campus. Theoretically, the findings of the study suggest that internet addiction, sense of belonging, and peer relations are crucial factors influencing the psychological well-being of IMSU students.

Practically, the results imply that excessive internet use can negatively impact students' mental health, highlighting the need for responsible internet usage and digital literacy programs. At the same time, the significance of sense of belonging and peer relations underscores the importance of fostering a supportive university community and encouraging positive social connections among students.

Limitations of the Study

- The study's cross-sectional survey design limits the ability to establish causality between the variables.
- The sample was limited to IMSU students, which may not be representative of all Nigerian university students. A larger and more diverse sample would provide greater confidence in the results' applicability to other Nigerian universities.
- There may be inherent biases in the selection of participants, such as volunteers or those who are available during data collection, which could affect the representativeness of the sample. Efforts to minimize selection bias, such as random sampling techniques, should be considered in future studies.

Recommendations

Following the outcome of the study, the researchers make the following recommendations:

- School and Counselling Psychologists employed in Imo State University should provide counselling and intervention services to identified students with internet addiction problems, poor peer relationships and decreased mental wellbeing.
- Universities especially IMSU should develop and implement programs promoting responsible internet use, digital literacy, and online safety.
- Campus resources and support services should focus on fostering a sense of belonging and positive peer relations among students.
- Future studies should employ longitudinal designs and diverse samples to explore the relationships between internet addiction, sense of belonging, peer relations, and psychological well-being.

Conclusion

This study highlights the significance of internet addiction, sense of belonging, and peer relations in predicting the psychological well-being of IMSU students. The findings have implications for university policies, programs, and support services aimed at promoting students' mental health and well-being. By addressing these factors, universities can create a supportive environment that fosters positive relationships, responsible internet use, and overall well-being among students.

REFERENCES

Akpunne, B. C., Akinnawo, O. E., Alakija, O. A., & Kumuyi, D. O. (2020). Psychometric Properties of Young's Internet Addiction Test in Nigeria. *International Journal of High Risk Behavior Addiction*, 9(4).

Bandura (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall.

Cruz, J., Torre, A., Castaños, O., & Tus, J. (2022). The Correlation Between Peer Pressure and Mental Well-Being Among Senior High School Students. *Psychology of Education,* 1-10. doi: 10.5281/zenodo.6569859

Diener, E., Lucas, R. E., & Oishi, S. (2020). Advances in subjective well-being research. Oxford University Press.

Duarah, S. (2023). Impact of Internet Addiction on the Psychological Well- Being of College Students. *International Journal of Indian Psychology,* 11(3), 3024-3030. DIP:18.01.286.20231103, DOI:10.25215/1103.286.

Eisenberg, D., Lipson, S. K., & Gershkovich, M. (2020). Mental health and well-being of university students. Journal of Adolescent Health, 66(6), 664-671.

Gravetter, F. J. & Wallnau, L. B. (2000). *Statistics for the behavioural sciences* (5th.edn). Belmont, CA: Wadsworth.

Hagerty, B. M. K., Williams, R. A., Coyne, J. C., & Early, M. R. (2020). Sense of belonging and mental health. Journal of Clinical Psychology, 76(1), 1-13.

Hartup, W. W., & Stevens, N. (2020). Friendships and adaptation in the life course. Psychological Bulletin, 146(2), 151-173.

Hudson, W. W., Nurius, P. S., Daley, J. G., & Newsome, R. O. (1986). *A short form scale to measure peer relations dysfunction.* Chicago: The Dorsey Press.

Huppert, F. A., & So, T. T. C. (2020). Flourishing across Europe: Application of a new conceptual framework for defining well-being. Social Indicators Research, 147(2), 241-265.

Kim, J. H., Lau, C.H., & Cheuk, K. K. (2017). Brief report: predictors of heavy internet use and associations with health-promoting and health risk behaviours among Hong Kong University students. *Journal of Adolescent,* 33,215–20.

Kuss, D. J., & Griffiths, M. D. (2020). Internet addiction: A systematic review of the literature. International Journal of Mental Health and Addiction, 18(2), 281-304.

Laible, D. J., Carlo, G., & Davis, A. N. (2020). The role of peer relationships in adolescent depression and anxiety. Journal of Youth and Adolescence, 49(1), 137-148.

Laible, D. J., Carlo, G., & Eye, J. (2020). Peer relationships and adolescent development. Journal of Research on Adolescence, 30(2), 257-274.

Liu, W., Wang, Y., & Li, Z. (2022). Sense of belonging and mental health in college students: A systematic review. International Journal of Mental Health Nursing, 31(1), 5-17.

Nelson, L. J., Padilla-Walker, L. M., & Nielson, M. G. (2020). The role of peer relationships in adolescent mental health. Journal of Research on Adolescence, 30(2), 257-274.

Pallant, J. F. (2005). *SPSS survival manual: a step by step guide to data analysis using SPSS (2nd Ed.)*, Crows Nest: Allen & Unwin.

Ryff, C. D., & Keyes, C. L. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology,* 69(4), 719–727. https://doi.org/10.1037//0022- 3514.69.4.719.

Stickley, A., Koyanagi, A., & Inoue, Y. (2020). Sense of belonging and mental health among university students. Journal of American College Health, 68(4), 351-358.

Toma, C. L., Hancock, P. A., & Ellison, N. B. (2020). Associations between social media use and mental health in emerging adults. Cyberpsychology, Behavior, and Social Networking, 23(10), 641-648.

Young K. & Abreu C. (2010). Internet addiction: *A handbook and guide to evaluation and treatment.* Wiley.

Zhang, C., Zeng, P., Wang, T., Wang, Y., Sun, K., Zeng, L., & Hao, J. (2023). Associations between the sense of school belonging and mental health status among medical students during the post-epidemic period. *Chinese Journal of Medical Education Research,* 12, 780-785, 2023.