

Gender and University Support towards Psychological Well-being: An Exploratory Study in Malaysia

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Abstract

The aim of this study was to investigate the relationship between university support and psychological well-being among postgraduate students in Malaysian public universities. The second aim of this study was to investigate the gender as the moderators in the model. Convenience sampling method was used in this study. Data were gathered from a sample of 335 postgraduate students selected from 13 Malaysian public universities. An online survey was sent out to postgraduate students via postgraduate groups. PLS-SEM version 3.3.7 software package was used to analyse the data. Findings showed positive effect of university support on postgraduate students' psychological well-being. However, this study revealed no significant differences between male and female groups with university support on postgraduate students' psychological well-being. Moreover, the findings of this study will be useful in the creation of policies and programmes aimed at improving the well-being of postgraduate students in the future. The findings of this study will be valuable in the development of policies and programmes targeted at enhancing the well-being of postgraduate students, in the future.

Keyword: Postgraduate Students, Psychological Well-being, Gender, University Support, Malaysian Public Universities

Introduction

The high prevalence of mental health issues among university students is a big issue both for universities and their local communities (Baik et al., 2019). In this new era of globalisation, it should be noted that Malaysian universities have successfully extended their academic impacts, but mental health among Malaysian students remains a significant challenge (Kotera & Ting, 2019). Students with mental health issues are also less likely to persevere when dealing with difficulties and are more likely to drop out of their courses (Baik et al., 2019). Student's health outcomes, academic success and student retention and graduation rates can all be impacted by poor mental health on college campuses (Wyatt & Oswalt, 2013). According to Ismail and Dorloh (2020), learning at postgraduate level is widely acknowledged as more challenging than learning at undergraduate level. For example, the results showed that the chance of doctoral students' dropout increased among those students with experiences of burnout (Corner et al., 2017). In addition, Marais et al (2018)

stated that a large proportion of French postgraduate students in their study suffered from abnormal levels of anxiety (42%) and depression (54%). In sum, postgraduate students are more likely than undergraduate students to suffer from a lack of well-being as a result of the difficulties they experience in their task and their setting. For these reasons, it is also critical to investigate postgraduate students' psychological well-being issues in Malaysian public universities.

Gender-based analysis is necessary to improve the health and well-being of both males and females (Matud et al., 2019). Prakash and Flores (1985) revealed that the impact of individual sex role specificity differs in effect between men and women. Women experience higher rates of depression, anxiety disorders and somatization than men (Bener et al., 2010). According to Debowska et al (2020), female students scored significantly higher on depression, anxiety and stress than male students in university. In addition, female reported much higher levels of dissatisfaction with social life than male (Bener et al., 2010). Also, gender had a statistically significant impact on the severity of depression, with females reporting greater depression than males (Ryba & Hopko, 2012). In contrast, female postgraduate students were reported to have higher level in psychological well-being (Panahi et al., 2013).

In sum, gender-related differences in well-being are not consistently addressed in research. However, gender and psychological well-being were found to be significantly positively related through satisfaction of basic needs (Gómez-Baya et al., 2018). Findings of the study on gender differences would be used to provide additional support and programmes for depressed postgraduate students, particularly when taking the gender of postgraduate students into consideration.

Apart from that, universities are responsible for setting up an atmosphere that promotes the well-being of postgraduate students (González-Betancor & Dorta-González, 2020). Supporting student's well-being is also important for universities to achieve their core goal of delivering high-quality educational experiences and successful graduation outcomes (Baik et al., 2019). Every institution should address problems that impact their students' well-being and academic performance (Schlesselman et al., 2020). Thus, universities are being pushed to build environments that actively foster student success and happiness (Ukeh & Hassan, 2018).

Falk et al (2019) claim that university systems need to support postgraduate students who do not feel they are getting the help they need, who think they are working under unreasonable circumstances, or who may need to change supervisors to complete their graduate research studies. Counselling, accommodation, research workshops, facilities and financial support are all critical elements of the university's position in promoting the well-being of the students. Another significant concern raised by students was the need to enhance access to resources and support such as counselling, academic skills and career advice (and eliminate barriers) (Baik et al., 2019). Other areas with greater mental health implications include career training and prospects, research experience, the effect of writing a thesis on health, and private life (Marais et al., 2018). Universities must play a key role in assisting students to improve their psychological well-being so that they can adjust to the difficulties of university life (Shahira et al., 2018). Nonetheless, there has been less research on the measures that universities could take to reduce environmental stressors and promote protective factors in the university environment (Baik et al., 2019).

According to previous studies, postgraduate students at local universities faced a variety of challenges during their education. This could be due to the fact that postgraduate students

have traditionally faced issues such as the lack of institutional support (Sidhu et al., 2013). University has a vital role in ensuring the well-being of postgraduate students to produce high-quality human resources and research. Besides, much of the research on university students' well-being has so far concentrated on determining the incidence of psychological distress and the usage of support services by students who experience mental health problems (Baik et al., 2019). However, in Malaysian public universities, there is still an unexplained gap between university support and psychological well-being among postgraduate students. It is also crucial to recognise that there are distinctions between males and females when developing effective techniques to assist them in improving their mental well-being.

Research Objectives

The aim of this study was to understand the gender and university support's influences on postgraduate students' psychological well-being.

- 1) To investigate the relationship between postgraduate students' university support and psychological well-being in Malaysian public university.
- 2) To find out the moderating effect of postgraduate students' gender differences that could cause any stronger or weaker relationships in the research model.

Research Questions

- 1) What is the relationship between university support and psychological well-being among postgraduate students in Malaysian Public University?
- 2) To what extent does postgraduate students' gender cause discrepancies in the relationships in the research model?

Literature Review

Psychological Well-being

The World Health Organization (WHO) which defines to mental health as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to her or his community" (World Health Organization, 2004). Likewise the word "mental health" has generally been used to refer to mental illness or a psychiatric condition, there is widespread agreement and has been gradually introduced that the concept of mental well-being should be characterised and interpreted more positively than simply as the absence of a diagnosable disorder or negative aspects (Abbott et al., 2008; Hernández-Torrano et al., 2020).

One of the most key concepts being considered today is psychological well-being (Bordbar et al., 2011) due to increased general awareness and understanding. Nowadays, individuals' psychological well-being is a precious asset for organizations and society (Wang et al., 2021). Apart from that, well-being and positive psychology are a major concern of many professionals in healthcare and education (Salavera et al., 2020). People's well-being can be characterized as how they make us feel on a personal and social level and how they assess their lives as a whole (Michaelson et al., 2012).

With the development of a constructive psychological perspective, research patterns linked to people's well-being gained traction (Akfirat, 2020). In today's culture, a lack of well-being is a pervasive and difficult task (Zuo et al., 2017). Thus, psychological well-being is an essential element that has a vital role to enhance students' optimal psychological functioning.

The investigation of students' psychological well-being is a key theoretical and practical challenge at the moment (Fomina et al., 2020).

University Support

Universities have a responsibility to consider their students' psychological health as a result of their workload and worries. University can develop a programme or activities that will increase the efficiency of their studies as well as their need for mental support, which will aid them in boosting their psychological well-being. Student services are offered as a responsibility of care from an institutional standpoint to assist students attain their objectives (Waight & Giordano, 2018). In general, how the university supports students in their pursuit of higher education and how it may be more supportive (Thomas, 2002). There are numerous problems that student service providers face right now. The followings are some of them: (a) rising higher education costs due to inevitable tuition increases, (b) changing student demographics, (c) demands for greater accountability and (d) ethical issues on campus. All of them necessitate careful consideration (Cadag, 2017).

In terms of operational support, institutions' resources (i.e., computer labs, PhD workspaces, etc.) helped talented postgraduate students in creating high-quality publications (i.e., high-impact journal articles indexed by ISI/Scopus) (Isa et al., 2016). Besides, students at universities have become more diverse, necessitating learning environments and support services that take into account all students' experiences, particularly those from non-traditional backgrounds (Heagneya & Bensonb, 2017). It is worth to highlight that student support and services can also contribute to their academic success and the quality of their learning experience (Ciobanu, 2013).

In sum, student services help to improve the quality of students' learning experiences and academic performance, as well as to the reduction of university dropout rates and the expansion of students' life diversity, by developing and promoting transparent methods for making rational choices and resolving disputes and by preparing students for active participation in the society (Ciobanu, 2013). For example, it is reasonable that when organisational members believe they are supported by their organisation, they feel more secure about their organisational status and expect their organisation to protect them (Cho & Yu, 2015).

Gender

Gender differences in psychological well-being are essential because of the numerous efforts being made in society today to empower everybody to reach self-actualization and utilise their full potentials (Ashok, 2017; Roothman et al., 2003). For instance, humans have been intrigued by psychological gender differences for centuries, believing that these differences are both vast and unchangeable (Hyde, 2014). Prevalence rates of certain mental health issues show significant differences between men and women (Ryba & Hopko, 2012). Gender differences have been investigated in psychology from a variety of perspectives, including sexual, biological, social and psychological (Prakash & Flores, 1985).

According to Bener et al (2010) there is strong consensus on the existence of gender differences in mental illness. Besides, large amounts of research have been conducted to investigate gender differences in a wide range of abilities and behaviours and to determine the potential implications of these differences on a number of outcome variables, including but not limited to academic performance, occupational status and mental health functioning (Ryba & Hopko, 2012).

Methodology

The research design is a cross-sectional quantitative survey research design. Convenience sampling method was used in this study as universities were unable to provide postgraduate students' email addresses. Online survey was administered to postgraduate students through postgraduate groups because a large bulk of postgraduate students were studying from home. Participation in this survey is voluntary, and all responses will be kept totally confidential. The PLS-SEM version 3.3.7 software package was used to analyse the data. A total of 335 postgraduate students from 13 Malaysian public universities took part in this survey.

Instrumentation

University Support

The instrument of university support was modified based on an instrument developed by Eisenberger and Huntington (1986) namely Survey of Perceived Organizational Support (short version) which contains 16 items. Mazzucchelli and Purcell (2015) hypothesised that the university setting would provide environmental elements similar to those found in employment settings and that these elements would contribute to university students' well-being. No item was deleted after the construct validity. Thus, this section comprised seven items. All the items were measured based on the seven-point Likert scale of 1 = "Strongly disagree" to 7 = "Strongly agree".

Psychological Well-Being

The instrument of perceived of psychological well-being measured based on a questionnaire developed by Ryff (1989); Dan Ryff and Keyes (1995) namely *Ryff's Psychological Well-Being Scale* was used in this study. The instrument was based on six dimensions namely (a) self-acceptance, (b) positive relationships with others, (c) autonomy, (d) environmental mastery, (e) purpose in life and (f) personal growth. It contained 42 items related to psychological well-being. The highly condensed version (3-item scales-18 items in total) of Ryff's Psychological Well-Being Scale is not recommended by Ryff as it has psychometric issues and does not adequately cover the content of the six well-being constructs. The 42-item version is hence a better choice. In 42-question version of Ryff's questionnaire, there are seven questions to assess each of the sub-scales. No items was removed after the construct validity. All these items were measured based on the six-point Likert scale of 1 = "strongly disagree" to 6 = "strongly agree".

Findings

Assessment of Measurement Model

All of the indicators showing factor loadings ranging from .71 to .91 are shown in Table 1. It is preferable to have indicator loadings (standardised) that are higher than .708 since this shows that the construct explains more than 50 % of the variance in the indication, which suggests that there is sufficient indicator reliability (Hair et al., 2021). In typically, a value of .50 for the average variance extracted value (AVE) is considered to be acceptable; an AVE value of .50 or higher indicates that the construct explains at least 50% of the variance in the indicators that comprise that construct. A general accepted norm is that α of .60-.70 represents a suitable degree of reliability and α of .80 or above represents a very good level of reliability (Ursachi et al., 2015). Besides, if the composite reliability is higher than 0.6, it indicates that all of the measurement items have a higher degree of internal consistency (Gu

et al., 2019). The cronbach's alpha is ranged from .89 to .95 and the composite reliability is ranged from .90 to .96. In general, the findings indicate that the constructs show acceptable levels both of internal consistency and convergent validity.

According to Hair et al (2014), the square root of each construct's AVE must be higher than its correlation with other constructs to achieve a well-established discriminant validity using the Fornell-Larcker Criterion. The Fornell and Larcker's (1981) Criterion for discriminant validity is shown in Table 2. The values of the square root of AVE of the variables used in this study ranged from .75 to .87. Overall, discriminant validity between the constructs is validated. Additionally, four items of psychological well-being were removed after measurement model.

Table 1
Result of Convergent Validity and Reliability

Constructs	Items	Convergent Validity		Reliability	
		Factor loadings	AVE (above 0.5)	Cronbach's Alpha	Composite Reliability
University Support			.76	.95	.96
	US1	.80			
	US2	.86			
	US3	.91			
	US4	.90			
	US5	.93			
	US6	.78			
	US7	.89			
Psychological Well-being-Self-acceptance			.69	.91	.93
	SA1	.82			
	SA2	.86			
	SA3	Deleted			
	SA4	.87			
	SA5	.83			
	SA6	.88			
	SA7	.72			
Psychological Well-being-Positive Relations with Others			.63	.90	.92
	PO1	.77			
	PO2	.83			
	PO3	.77			
	PO4	.77			
	PO5	.80			
	PO6	.85			
	PO7	.76			
Psychological Well-being-Autonomy			.56	.89	.90
	AU1	.71			
	AU2	.74			
	AU3	.77			
	AU4	.80			
	AU5	.78			
	AU6	.71			

	AU7	.72			
Psychological	EM1	Deleted	.67	.90	.92
Well-being-	EM2	.76			
Environmental	EM3	.75			
Mastery	EM4	.85			
	EM5	.85			
	EM6	.86			
	EM7	.84			
Psychological	PL1	Deleted	.75	.92	.94
Well-being-	PL2	.90			
Purpose in Life	PL3	.87			
	PL4	.88			
	PL5	.84			
	PL6	.83			
	PL7	Deleted			
Psychological	PG1	.79	.63	.90	.92
Well-being-	PG2	.84			
Personal Growth	PG3	.83			
	PG4	.81			
	PG5	.77			
	PG6	.76			
	PG7	.75			

Note. US= University Support, SA=Self-acceptance, PO=Positive Relations with Others, EM=Environmental Mastery, AU=Autonomy, PL=Purpose in Life, PG=Personal Growth

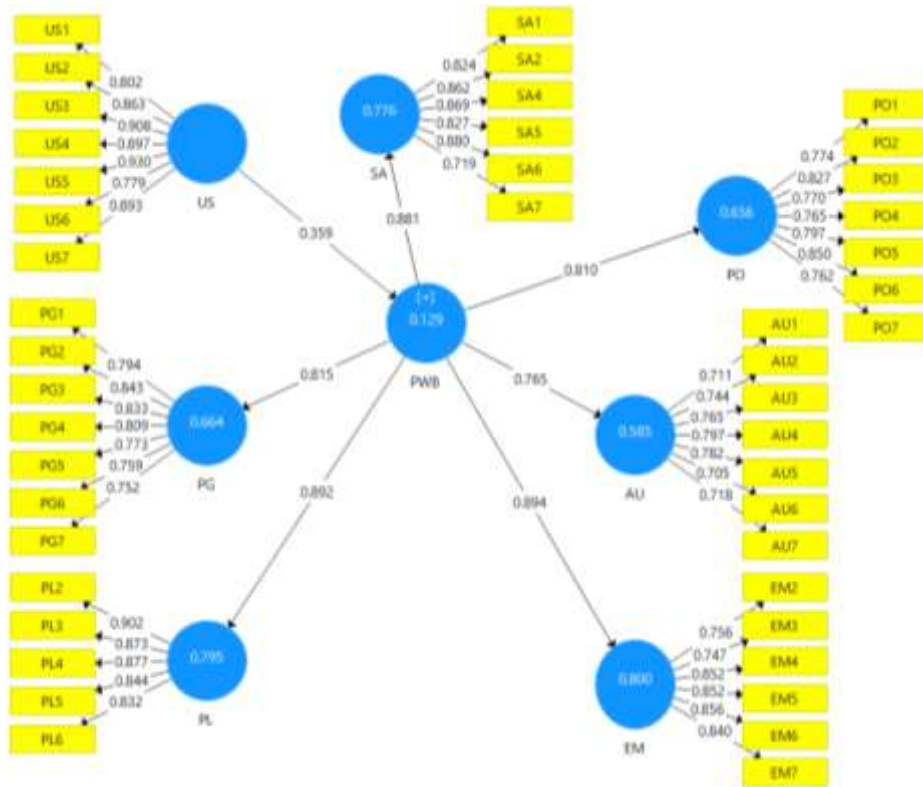


Figure 1: First Order Construct Measurement Model

Table 2

Fornell and Larcker's (1981) Criterion for Discriminant Validity (First Order Constructs Measurements)

	AU	EM	PG	PL	PO	SA	US
AU	.75						
EM	.62	.82					
PG	.53	.62	.80				
PL	.60	.80	.74	.87			
PO	.56	.70	.58	.61	.79		
SA	.62	.77	.64	.76	.64	.83	
US	.19	.33	.26	.33	.34	.35	.87

Note. AU=Autonomy, EM= Environmental Mastery, PG=Personal Growth, PL= Purpose in Life, PO=Positive Relations with Others, SA= Self-acceptance, US= University Support

Second Order Construct

Figure 2



Table 3
 Second Order Constructs Measurements

Latent Variables	Second Order Constructs	Convergent Validity		Reliability	
		Factors loading	AVE (above .50)	Cronbach's Alpha	Composite Reliability
LVS_AU	Psychological Well-being	.74	.71	.92	.93
LVS_EM		.90			
LVS_PG		.80			
LVS_PL		.90			
LVS_PO		.82			
LVS_SA		.89			

Note. LVS= Latent Variable Score, AU= Autonomy, EM= Environmental Mastery, PG= Personal Growth, PL= Purpose in Life, PO=Positive Relations with Others, SA= Self-acceptance

The findings of the inquiry into the convergent validity and reliability of second order construct assessment are presented in Table 3. The factor loading values range from .74 to .90, and the AVE is .71, indicating that the convergent validity is acceptable. Furthermore, the cronbach's alpha and reliability values are respectively .92 and .94, indicating that the internal consistency reliability is adequate. As can be shown in Table 4, there were no problems with discriminant validity in this study.

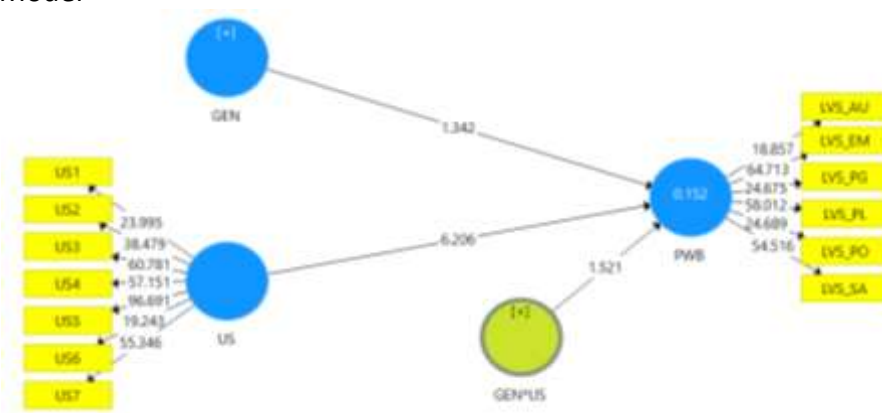
Table 4
 Fornell and Larcker's (1981) Criterion for Discriminant Validity (Second Order Constructs Measurements)

	PWB	US
PWB	.84	
US	.37	.87

Note. US= University Support, PWB= Psychological Well-being

Assessment of Structural Model

Figure 3
 Structural Model



The findings revealed that university support ($\beta=.37$, t -value= 6.21 $p < .05$) has an impact on the psychological well-being of postgraduate students as the t -value was higher than 1.645 for one-tailed test and the p -value was less than .05. Also, gender as a moderator was found

to be significant in this study as shown in Figure 3, indicating that there are no interaction effect in the relationship between university support and psychological well-being between male and female postgraduate students ($\beta = -.12$, t -value = 1.52, $p > .05$). Table 5 shows the results of the structural model. According to Cohen (1988), the following R^2 values are proposed for evaluating endogenous latent variables: .26 (substantial), .13 (moderate) and .02 (weak). In the present study, psychological well-being influenced by gender and university support and gender as a moderator has a R^2 value close to the moderate value of .15. This would mean that 15% change in psychological well-being.

Table 5

Overview of Structural Model Results

Hypothesis	β	t -value	p -value	Confidence Interval		Results
				5%	95%	
H1: US- PWB	.37	6.21	.00	.27	.47	Accepted
H2: GEN*US - PWB	-.12	1.52	.06	-.24	.05	Rejected

Note. GEN= Gender, US= University Support, PWB= Psychological Well-being

Discussion

The aim of this study is to investigate the relationship between university support and psychological well-being among postgraduate students in Malaysian public universities and the gender as the moderators in the model. The data revealed that gender had no influence on the relationship between university support and the psychological well-being of postgraduate students. It aligns with statistical analysis that shows gender has no significant impact on psychological well-being among postgraduate students (Ashok, 2017). However, according to Das and Sahoo (2012), male postgraduate students are more depressed than female postgraduate students. In contrast, regression analysis (ages ranged from 21 to 64 years) showed that masculinity was more associated with psychological well-being than femininity (Matud et al., 2019). In the present study, both male and female postgraduate students felt they were able of gauging and regulating their mental well-being.

Besides, the findings revealed that postgraduate students' psychological well-being is positively influenced by their university support. The researchers discovered that mature students used institutional support services infrequently because they were unaware of the types of assistances offered, were constrained by time and location or the types of assistance available were not of what they need (Waight & Giordano, 2018). For instance, students ask the questions "What can I do to enhance my well-being?" is a term that refers to a wide range of interactions within the university environment, including curricular activities, social life, student facilities and physical spaces (Baik et al., 2019). Besides that, higher education institutions have become increasingly involved in offering learning opportunities that strengthen and support student well-being (Stanton et al., 2016). Higher education institutions should provide a set of student-centred activities and services in support of academic instruction, with the goal of facilitating comprehensive student growth and active participation in nation-building (Cadag, 2017).

At various stages of graduate studies, each institution of higher learning should provide a variety of information and support such as a general information guide outlining the graduate process and many sources of information and support structures provided to assist

with initial progress as well as interactive sessions on library use, information management and scientific writing as well as proposal writing and research methodology (Abiddin et al., 2013). For example, student services, as essential aspect of educational package, must provide students with activities that help them manage family and job obligations (Cadag, 2017).

Some types of student support, such as mentoring and guidance should be available to help students in dealing with stress and educate them on the harmful effects of stress (Bamuhair et al., 2015). One of the roles of support services may be to increase student experience and retention rates by fostering emotional resilience in students (Waight & Giordano, 2018). If perceived as part of the problem-solving process, university support services will support students in managing their stressors (Julal, 2016). Making students aware of the available resources to them not only allows them to have the support they need, but also helps to de-stigmatize poor mental health (Turhan, 2018).

Suggestions for Future Research

To gain better understanding of university support system, it is possible that a mix-method approach will be used in the future to investigate the relationship between university support and postgraduate students' psychological well-being. It is also possible to utilise a moderator in the study to account for other demographic factors, such as the field of study and ages. In addition, it will be necessary to compare the impact of university support on psychological well-being at public and private universities in the future.

Limitation of the Study

There was no token of appreciation given to respondents in this study. The survey is voluntarily completed by postgraduate students (Master's and Doctoral students) who are interested in and appreciative of research that will improve postgraduate students' psychological well-being in the future. In this study, only a quantitative survey was used to collect data. Furthermore, universities are unable to give a list of postgraduate students' email addresses. As a result, convenient sampling (also known as non-probability sampling) was utilised to collect data for this study.

Implications

According to the findings of the current study, the factor that influences the psychological well-being of postgraduate students is an important component that enables the students to function well. The support offered by universities has a meaningful effect on the mental well-being of postgraduate students. Therefore, it is a positive way for university support to maintain their support quality to ensure that the well-being of their students gets improved and to bring out the positive outcomes. For instance, those postgraduate students who have a high level of psychological well-being are able to improve both the quality and quantity of their study. In addition, the findings could assist the Ministry of Education, counsellors, supervisors and university administrators in terms connected to university support in the development and implementation of an appropriate intervention programme to reduce psychological issues among postgraduate students. As a result of the findings, the knowledge base about the psychological well-being of postgraduate students at Malaysian public university has been significantly expanded.

Conclusion

In sum, with effective university support for postgraduate students, their studies will be well-progressed and they will be able to minimise their stress levels and improve their psychological well-being in the meantime. For instance, university support can improve its efficiency in dealing with the psychological issues of students and it can assist postgraduate students in improving both the quality and quantity of their publications.

References

- Abbott, R. A., Croudace, T. J., Ploubidis, G. B., Kuh, D., Wadsworth, M. E. J., Richards, M., & Huppert, F. A. (2008). The relationship between early personality and midlife psychological well-being: evidence from a UK birth cohort study. *Social Psychiatry and Psychiatric Epidemiology*, 43(9), 679–687. doi:10.1007/s00127-008-0355-8
- Abiddin, N. Z., Ismail, A., & Taniredja, T. (2013). Enhancing quality of higher education for graduate research students development. *International Journal for Educational Studies*, 5(2), 133-146.
- Akfirat, O. N. (2020). Investigation of relationship between psychological well-being, self esteem, perceived general self-efficacy, level of hope and cognitive emotion regulation strategies. *European Journal of Education Studies*, 7(9), 286-306.
- Ashok, K. S. (2017). Impact of gender on psychological well-being among post-graduate students. *Psychology and Behavioral Science International Journal*, 2(1), 1-3. doi:10.19080/PBSIJ.2017.02.555578
- Baik, C., Larcombe, W., & Brooker, A. (2019). How universities can enhance student mental wellbeing: The student perspective. *Higher Education Research & Development*, 38(4), 674–687. doi:10.1080/07294360.2019.1576596
- Bamuhair, S. S., Farhan, A. I. A., Althubaiti, A., Agha, S., Rahman, S. U., & Ibrahim, N. O. (2015). Sources of stress and coping strategies among undergraduate medical students enrolled in a problem-based learning curriculum. *Journal of Biomedical Education*, 2015575139(1-8). doi:10.1155/2015/575139
- Bener, A., Ghuloum, S., & Burgut, F. T. (2010). Gender differences in prevalence of somatoform disorders in patients visiting primary care centers. *Journal of Primary Care & Community Health*, 1(1), 37–42. doi:10.1177/2150131909353333
- Bordbar, F. T., Nikkar, M., Yazdani, F., & Alipoor, A. (2011). Comparing the psychological well-being level of the students of Shiraz Payame Noor University in view of demographic and academic performance variables. *Procedia - Social and Behavioral Sciences*, 29, 663 – 669. doi:10.1016/j.sbspro.2011.11.290
- Cadag, C. P. (2017). Student services and their influence to student development. *Asia Pacific Journal of Multidisciplinary Research*, 5(3), 63-70.
- Cho, J., & Yu, H. (2015). Roles of University Support for International Students in the United States: Analysis of a Systematic Model of University Identification, University Support, and Psychological Well-Being. *Journal of Studies in International Education*, 19(1), 11–27. doi:10.1177/1028315314533606
- Ciobanu, A. (2013). The role of student services in the improving of student experience in higher education. *Procedia - Social and Behavioral Sciences*, 92, 169 – 173. doi:10.1016/j.sbspro.2013.08.654
- Cohen, J. (1988). Set correlation and contingency tables. *Applied Psychological Measurement*, 12(4), 425–434. doi:10.1177/014662168801200410

- Cornér, S., Lofstrom, E., & Pyhalto, K. (2017). The relationships between doctoral students' perceptions of supervision and burnout. *International Journal of Doctoral Studies*, 12, 91-106.
- Das, P. P. P., & Sahoo, R. (2012). Stress and depression among postgraduate students. *International Journal of Scientific and Research Publications*, 2(7), 1-5.
- Debowska, A., Horeczy, B., Boduszek, D., & Dolinski, D. (2020). A repeated cross-sectional survey assessing university students' stress, depression, anxiety, and suicidality in the early stages of the COVID-19 pandemic in Poland. *Psychological Medicine*, 1-4. doi:10.1017/S003329172000392X
- Falk, L. L., Augustin, H., Torén, K., & Magnusson, M. (2019). Doctoral students' perceived working environment, obstacles and opportunities at a Swedish medical faculty: a qualitative study. *BMC Medical Education*, 19(250). doi:10.1186/s12909-019-1684-x
- Fomina, T., Burmistrova-Savenkova, A., & Morosanova, V. (2020). Self-regulation and psychological well-being in early adolescence: A two-wave longitudinal study. *Behavioral Sciences*, 10(67), 1-10. doi:10.3390/bs10030067
- Gómez-Baya, D., Lucia-Casademunt, A. M., & Salinas-Pérez, J. A. (2018). Gender differences in psychological well-being and health problems among European health professionals: Analysis of psychological basic needs and job satisfaction. *International Journal of Environmental Research and Public Health*, 15(1474), 1-17. doi:10.3390/ijerph15071474
- González-Betancor, S. M., & Dorta-González, P. (2020). Risk of interruption of doctoral studies and mental health in PhD students. *Mathematics*, 8(1695), 1-12. doi:10.3390/math8101695
- Gu, D., Guo, J., Liang, C., Lu, W., Zhao, S., Liu, B., & Long, T. (2019). Social media-based health management systems and sustained health engagement: TPB perspective. *International Journal of Environmental Research and Public Health*, 16(1495), 1-15. doi:10.3390/ijerph16091495
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. United States: SAGE Publications.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R*. Switzerland: Springer Nature Switzerland AG.
- Heagneya, M., & Bensonb, R. (2017). How mature-age students succeed in higher education: Implications for institutional support. *Journal of Higher Education Policy and Management*, 39(3), 216–234. doi:10.1080/1360080X.2017.1300986
- Hernández-Torrano, D., Ibrayeva, L., Sparks, J., Lim, N., Clementi, A., Almkhambetova, A., . . . Muratkyzy, A. (2020). Mental health and well-being of university students: A bibliometric mapping of the literature. *Frontiers in Psychology*, 11(1226). doi:10.3389/fpsyg.2020.01226
- Hyde, J. S. (2014). Gender similarities and differences. *The Annual Review of Psychology*, 65, 3.1–3.26. doi:10.1146/annurev-psych-010213-115057
- Ismail, A. M., & Dorloh, S. (2020). A qualitative analysis of factors affecting the successful completion of postgraduate studies. *PalArch's Journal of Archaeology of Egypt/ Egyptology*, 17(6), 12174-12190.
- Julal, F. S. (2016). Predictors of undergraduate students' university support service use during the first year of university. *British Journal of Guidance & Counselling*, 44(4), 371-381. doi:10.1080/03069885.2015.1119232

- Kotera, Y., & Ting, S.-H. (2019). Positive psychology of Malaysian university students: Impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction*. doi:10.1007/s11469-019-00169-z
- Marais, G. A. B., Shankland, R., Haag, P., Fiault, R., & Juniper, B. (2018). A survey and a positive psychology intervention on French PhD student well-being. *International Journal of Doctoral Studies*, 13, 109-138. doi:10.28945/3948
- Matud, M. P., López-Curbelo, M., & Fortes, D. (2019). Gender and psychological well-being. *International Journal of Environmental Research and Public Health*, 16(3531). doi:10.3390/ijerph16193531
- Mazzucchelli, T. G., & Purcell, E. (2015). Psychological and environmental correlates of well-being among undergraduate university students. *Psychological Well-Being*, 5(6), 1-18. doi:10.1186/s13612-015-0033-z
- Michaelson, J., Mahony, S., & Schifferes, J. (2012). *Measuring well-being: A guide for practitioners*. United Kingdom: New Economics Foundation.
- Isa, M. F., Othman, S. N., & Muhammad, N. M. (2016). Postgraduate students' recruitment strategies in Higher Education Institutions of Malaysia. *International Review of Management and Marketing*, 6(S8), 166-174.
- Panahi, S., Mohd Yunus, A. S., & Roslan, S. (2013). Correlates of psychological well-being amongst graduate students in Malaysia. *Report and Opinion*, 5(8), 39-49.
- Prakash, V., & Flores, R. C. (1985). A study of psychological gender differences: Applications for advertising format. *NA - Advances in Consumer*, 12, 231-237.
- Roothman, B., Kirsten, D. K., & Wissing, M. P. (2003). Gender differences in aspects of psychological well-being. *South African Journal of Psychology*, 33(4), 212-218.
- Ryba, M., & Hopko, D. R. (2012). Gender differences in depression: Assessing mediational effects of overt behaviors and environmental reward through daily diary monitoring. *Depression Research and Treatment*, 2012(865679), 1-9. doi:10.155/2012/865679
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69(4), 719-727.
- Salavera, C., Usan, P., Teruel, P., & Antoñanzas, J. L. (2020). Eudaimonic well-being in adolescents: The role of trait emotional intelligence and personality. *Sustainability*, 12(2742), 1-11. doi:10.3390/su12072742
- Schlesselman, L. S., Cain, J., & DiVall, M. (2020). Improving and restoring the well-being and resilience of pharmacy students during a pandemic. *American Journal of Pharmaceutical Education*, 84(6), 677-682.
- Shahira, M. N., Hanisshya, H., Lukman, Z. M., Normala, R., Azlini, C., & Kamal, M. Y. (2018). Psychological well-being among university students in Malaysia. *International Journal of Research and Innovation in Social Science*, 2(12), 133-137.
- Sidhu, G. K., Kaur, S., Chan, Y. F., & Wan Yunus, F. (2013). Postgraduate supervision: Exploring Malaysian students' experiences. *Procedia - Social and Behavioral Sciences*, 90, 133 - 141 doi:10.1016/j.sbspro.2013.07.074
- Stanton, A., Zandvliet, D., Dhaliwal, R., & Black, T. (2016). Understanding students' experiences of well-being in learning environments. *Higher Education Studies*, 6(3), 90-99. doi:10.5539/hes.v6n3p90

- Thomas, L. (2002). Student retention in higher education: the role of institutional habitus. *Journal of Education Policy*, 17(4), 423-442. doi:10.1080/02680930210140257
- Turhan, C. (2018). *Wellbeing in higher education: A GUILDHE research report*. London: GuildHE.
- Ukeh, M. I., & Hassan, A. S. (2018). The impact of coping strategies on psychological well-being among students of Federal University, Lafia, Nigeria. *Journal of Psychology & Psychotherapy*, 8(5), 1-6. doi:10.4172/2161-0487.1000349
- Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. *Procedia Economics and Finance*, 20, 679 – 686.
- Waight, E., & Giordano, A. (2018). Doctoral students' access to non-academic support for mental health. *Journal of Higher Education Policy and Management*. doi:10.1080/1360080X.2018.1478613
- Wang, H., Yang, J., & Li, P. (2021). How and when goal-oriented self-regulation improves college students' well-being: A weekly diary study. *Current Psychology*. doi:10.1007/s12144-020-01288-w
- World Health Organization. (2004). *Promoting mental health: Concepts, emerging evidence, practice (summary report)*. Geneva: World Health Organization.
- Wyatt, T., & Oswalt, S. B. (2013). Comparing mental health issues among undergraduate and graduate students. *American Journal of Health Education*, 44, 96-107. doi:10.1080/19325037.2013.764248
- Zuo, S., Wang, S., Wang, F., & Shi, X. (2017). The behavioural paths to wellbeing: An exploratory study to distinguish between Hedonic and Eudaimonic wellbeing from an activity perspective. *Journal of Pacific Rim Psychology*, 11(2), 1-13. doi:10.1017/prp.2017.1