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Navigating the COVID-19 Storm: Assessing Well-being in University Students from Lower-Income Backgrounds

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Abstract: The COVID-19 pandemic has had severe repercussions on individuals' lives, with particularly detrimental effects on those from economically disadvantaged backgrounds. The quality of life and overall well-being of this vulnerable demographic have been profoundly shaken. In the context of increasing research segmentation based on specific population profiles, this study is designed to investigate the well-being of university students hailing from lower-income groups during the pandemic, particularly when stringent movement control orders were in effect. Furthermore, this research scrutinizes variations in well-being with respect to gender and locality. A quantitative comparative approach was employed, and data were collected through a convenient online survey sampling method. The assessment of the subjects' quality of life was carried out using a standardized WHO-QOL BREF questionnaire, consisting of 26 items that measure various domains encompassing environment, physical health, psychological well-being, and social relationships. Furthermore, the WHO well-being measure was also used to assess the respondents' general well-being. Multigroup analysis (MGA) and partial least squares structural equation modeling (PLS-SEM) were used to analyze the data. 305 students made up the study cohort, of whom 112 lived in urban regions and 193 in rural ones. The results show significant differences between male and female students in the areas of physical and psychological health. The study also found that among rural students, environmental characteristics and well-being were significantly correlated, although this was not the case for their urban counterparts.

Keywords: *Well-being; Quality of Life; Higher Education; Psychological Health; Lower-income group, Sustainable Development Goal, COVID-19 Pandemic.*

1. Introduction and Background

The pandemic was first detected in November 2019 in Wuhan, China and the World Health Organization (WHO) declared the disease as an outbreak in just two months as it spread rapidly worldwide. This pandemic attacks the respiratory system, and the infected patients may exhibit symptoms such as mild fever, dry cough, and runny nose (Gralinski, & Menachery, 2020). Some patients may suffer from severe pneumonia, kidney failure, septic shock and acute respiratory tract infection which are fatal (Huang, Wang, Li, Ren, Zhao, Hu, & Cheng, 2020). In contrast, some patients do not develop any symptoms and feel healthy. Currently, in December 2020, the statistics showed that there are 68,845,368 confirmed cases all over the world and the number of deaths keeps increasing up to 1,570,304 cases (WHO, 2020). Most countries take precautionary measures by implementing social distancing, self-isolation, closure of schools, and travel restrictions. Due to that reason, a reduction of the workforce across all economic sectors occurs. In Malaysia, the first case was detected in January 2020. The local outbreaks started in March 2020 due to the massive gathering connected to Tabligh Jumaat (Spiritual gathering). With no alternative solution to escape from the COVID pandemic, the government took prompt action to implement the Movement Control Order (MCO) to curb the outbreak from 18 March to 12 May 2020 (MDBC, 2020). All social, religious, sporting, and cultural gatherings were banned except for essential services (Abdullah, Murad, Teoh, & Mohamad, 2020). During the MCO, people were confined for a certain period of social isolation (Sundarasen, Chinna, Kamaludin, Nurunnabi, Baloch, Khoshaim& Sukayt, 2020).

The pandemic has impacted people's lives in many ways and the lower-income group is one of the worst affected groups due to the disruption of economic activities, leading to the reduction of labor forces and productivity (Fan, Jamison, & Summers, 2018; Gassman-Pines, Ananat, & Fitz-Henley, 2020). The pandemic affects the economy of the countries and causes psychological and social impacts, especially among the

students. Few countries have reported an alarming number of mental health problems such as depression, anxiety, and sleep disorders (Gritsenko, Skugarevsky, Konstantinov, Khamenka, Marinova, Reznik, & Isralowitz, 2020). In response to this, this study is conducted to disclose the psychological well-being issues among undergraduate students in Malaysia. For the students, their learning activities are also disrupted due to the temporary closure of universities. Students were exposed to the new teaching and learning norms whereby they were responsible for their learning process guided by the lecturers using online platforms (Gonzalez, Rubia, Hincz, Comas-Lopez, Subirats, Fort, & Sacha, 2020). This transition can be both exciting and stressful because the students need to perform well (Burns, Dagnall and Holt, 2020) despite the shortage of equipment, non-conducive learning environment and unfamiliarity with digital technologies (Lim, 2020).

A previous study conducted in the United States among lower-income undergraduate students revealed negative online learning experiences due to a sudden transition (Aucejo, French, Araya, & Zafar, 2020). While another study conducted by Abdullah et al. (2020) disclosed that even when the MCO ended in May 2020, university students in Malaysia tended to exhibit lower psychological and social relationships. Another study conducted in India and Spain also revealed the negative impact of COVID-19 on individual emotions as the respondents develop feelings of loneliness, sadness, anxiety, and frustration (Grover, Sahoo, Mehra, Avasthi, Tripathi, Subrahmanyan, & Chakraborty, 2020: Odriozola-González, Planchuelo-Gómez, Irurtia & de Luis-García, (2020).

In recent years, the student well-being sphere has started to embrace core tenets of the positive psychology approach. Therefore, the importance of promoting health within the university environment is high, owing to the subsequent gains achieved resulting from improved well-being. This study addresses SDG Goal 3 in ensuring healthy lives and promoting well-being for university students during pandemic outbreaks, specifically the socio-psychological well-being among the rural and urban, and low-income undergraduate students in Malaysia. To date, data on well-being and QoL in university students in response to the COVID-19 pandemic are limited. Hence this study was conducted to [1] to determine a significant difference of gender in the well-being of the lower-income group university students [2] to determine a significant difference in the well-being of the lower-income group university students between urban and rural origin. It is hoped that the result will provide insight into coping strategies among undergraduate students and the development of policy among the universities to support the students in this pandemic. The impact of COVID-19 will be considered in alignment with well-being and how student well-being may be affected by the global pandemic.

2. Literature Review

Quality of life (QoL) is a multidimensional concept that measures a person's well-being (Grabowska, Antczak, Zwierzchowski, & Panek, 2022). The concept of QoL has evolved over time and its range has widened to encompass life satisfaction, self-actualization, and adopting and coping with the environment. QoL is a complex concept that is interpreted in several ways in various disciplines. Despite 40 years of research in QoL, there is a continuing debate about the definition of QoL and what should be measured. Until now, there is no uniform definition of the concept. The most cited definition of QoL is the one provided by the World Health Organization QoL working groups which is "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (WHO QoL Working Groups, 1998). The concept of QoL encompasses the dimensions of an individual's physical and psychological health, social relationships, and environmental conditions. The World Health Organization (WHO) declared a Public Health Emergency of International Concern in January 2020 due to COVID-19 (WHO, 2020). Universities across the world have closed their campuses to protect their students and staff from contracting the virus. The consequences of these decisions have an impact on the delivery of teaching and learning. As a result, university students have to adapt to a new learning environment. The global pandemic poses both direct and indirect threats to student well-being, specifically to poor psychological outcomes, as there is a reduction in the social context that students now cope with (Burns, Dagnall, & Holt, 2020).

The WHO defined well-being as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948). Well-being has a complex role to play as a predictor of outcomes for students, such as their academic performance (El Ansari & Stock, 2010). Student well-being can be defined

as a population-level term encompassing positive emotion and the inner capacity for an individual to cope with the challenges of day-to-day life and their academic journey (Barkham et al., 2019). Well-being stresses the importance of the individuals' living environment and how this impacts individual well-being, such as the places where we work and live (Beaumont, 2011). The drastic shift in the environment that students experienced before COVID-19 is one of the most significant potential contributors to poor student well-being. Students from lower economic status are likely to spend their quarantine time in a more stressful environment than those from higher economic backgrounds (Di Pietro, Biagi, Costa, Karpinski, & Mazza, 2020). Apart from the environment, gender shapes health and well-being (Kennedy et al., 2020). The average life expectancy at birth was 70 years for males and 72 for females. Females tend to live longer than males. This suggests that there are gender differences with regard to well-being. A previous study reported that females had experienced greater frequency and intensity of positive and negative emotions than males (Matud, López-Curbelo, & Fortes, 2019).

3. Research Methodology

Research Design, Procedure, and Sample: The study was conducted as a self-administered survey. Since the design requires the respondents to complete the questionnaire without the researchers' intervention, special care must be taken (Lavrakas, 2008). The item measurements were adopted from the translated version of the World Health Organization (WHO) quality of life assessment (Hasanah, Naing & Rahman, 2003) and it was formatted to avoid measurement error. A pilot test was conducted as suggested by Salkind (2010) with the main objective to discover problems that may arise before the main study so that corrective actions to improve the research process could be taken. Data for the pilot study were analyzed to assess the measurement reliability and the results suggested the item's internal consistency for each construct was assumed. Actual data collection spanned from December 2021 to December 2022, encompassing a year-long Period. An online survey form was created for the actual data collection, and invitations to university students to participate in the study were made based on a convenience sampling procedure. In total, 305 data were obtained. Initial approval of the research ethics was obtained from the researchers' institution, Universiti Teknologi MARA Shah Alam (REC/09/2021 (MR/805).

Instrument Design: The study was conducted using a questionnaire which was based on the WHOQOL BRIEF to assess the four domains of quality of life, which are social relationship, physical health, psychological health, and environment. These items were measured on a five-point Likert scale, ranging from 1 (not at all) to 5 (very true). Items to measure social relationships include personal relations and practical social support. The scale to evaluate physical health consisted of seven items (e.g. pain and discomfort, energy and fatigue, sleep and rest, dependent on medication and mobility). The scale to measure psychological health consisted of six items (e.g. positive feelings, negative feelings, self-esteem, body image, and concentration). The scale to measure the environment consisted of eight items (e.g. financial resources, information and skills, recreation and leisure, home environment, access to health and social care, physical safety and security, the physical environment, and transport). For practicality and easy understanding, the translated version of WHO-BRIEF by Hasanah et al. (2003) was used. In addition, the well-being measure was adopted from the World Health Organization (WHO) well-being index (World Health Organization, 1998) that consisted of five items (e.g. felt cheerful and good spirit, calm and relaxed, active and vigorous, woke up feeling fresh and daily life filled with things that interest me).

Respondents Profile: The participants of the study comprised university students from the lowest income category. In Malaysia, this income group is known as B40, indicating the bottom of the household economic hierarchy. The score of the household economic hierarchy is 20:40:40 which is 20% for the top or highest income, 40% for the middle-income group, and 40% for the lowest income group. The sample of the study consisted of 34.10% male (n = 104) and 65.9% female (n = 201) university students. Their distribution of origins is 36.7% from the urban (n = 112) and 63.3% from the rural area (n = 193). There seems to be a consistent distribution for the number of siblings, for 4, 5, and more than five siblings. Only 3.6% of the respondents were the only child in the family (n = 11), and 5.9% of the respondents had two siblings (n = 18). In assessing the distribution of the father's employment status, 28.2%, the highest percentage (n = 86), was self-employed, followed by 26.2% full-time employment (n = 80) and 20.7% others (n = 63). Others include not working at all or not being related because the parents were separated. Likewise, the distribution of

mothers' employment status shows the highest percentage of 68.5% (n = 209) for others that include the mother being a housewife or not related. Only 14.5% of the respondent's mothers work full-time (n = 44). The social demographic profiles of the respondents are shown in Table 1.

Table 1: Descriptive Analysis

Variable	N	(%)	Variable	N	(%)
Gender			Father's employment status		
Male	104	34.1	*Full time*	80	26.2
Female	201	65.9	*Part-time*	4	1.3
Origin			*Self-employed*	86	28.2
Urban	112	36.7	*Retired*	62	20.3
Rural	193	63.3	*Not working (health factor)*	10	3.3
			Others	63	20.7
Number of Siblings					
1	11	3.6	Mother's employment status		
2	18	5.9	*Full time*	44	14.4
3	57	18.7	*Part-time*	8	2.6
4	73	23.9	*Self-employed*	25	8.2
5	66	21.6	*Retired*	17	5.6
> 5	80	26.2	*Not working (health factor)*	2	0.7
			Others	209	68.5

Measurement Model: Loadings, Composite Reliability, and AVE of Specific Results.

The data was run for both the measurement and structural model by using SmartPLS ver 3.3 and the analysis follows the suggestions from Benitez, Henseler, Castillo and Schuberth (2020). The data group was generated based on gender (male and female) and place of origin (urban and rural). As the measurement was built based on the reflective model, the constructs were evaluated for composite reliability, convergent validity, indicator reliability and discriminant validity. The results of the measurement model for the four groups are shown in Table 2. The composite reliability of greater than 0.707 can be regarded as reasonable, as more than 50% of the variance in the construct scores can be explained by the latent variable (Nunally, 1994). The results of the composite reliability range from 0.849 to 0.955 for the male group, from 0.820 to 0.945 for the female group, from 0.840 to 0.946 for the urban group and from 0.818 to 0.948, indicating reliable construct scores.

The convergent validity using the value of the average variance extracted (AVE) was evaluated to assess that indicators to one latent variable measure the same construct (Benitez et al., 2020). The AVE should be larger than 0.5 to provide evidence for convergent validity. The results from the analysis suggest the lowest score is 0.501 for the female group, indicating the convergent validity requirement is met. The indicator reliability can be assessed through the factor loading estimates with values greater than 0.707, which indicates more than 50% of the variance in the single indicator can be explained by the corresponding latent variable (Benitex et al., 2020). However, lower values will not be problematic when the construct validity and reliability are met. In this study, three items to measure physical health and one item to measure psychological health were deleted to improve the validity and reliability scores. These items are PH1 (pain and discomfort), PH2 (dependence on medication), PH4 (mobility), and PS6 (negative feelings).

Table 2: Loadings, Composite Reliability, and AVE of Gender and Origin-Specific Results

	Loading			
	Male	**Female**	**Urban**	**Rural**
Environment				
EV1	0.755	0.720	0.705	0.738
EV2	0.831	0.836	0.836	0.838
EV3	0.663	0.690	0.654	0.697

EV4	0.650	0.625	0.731	0.594
EV5	0.693	0.584	0.590	0.638
EV6	0.804	0.752	0.717	0.803
EV7	0.696	0.736	0.815	0.680
EV8	0.723	0.689	0.676	0.716
Cronbach's Alpha	*0.873*	*0.857*	*0.865*	*0.864*
Composite Reliability	*0.900*	*0.888*	*0.895*	*0.893*
Average Variance Extracted (AVE)	*0.532*	*0.501*	*0.518*	*0.514*
Physical Health				
PH3	0.805	0.772	0.762	0.807
PH5	0.749	0.723	0.681	0.773
PH6	0.789	0.702	0.799	0.672
PH7	0.712	0.755	0.824	0.652
Cronbach's Alpha	*0.765*	*0.733*	*0.772*	*0.720*
Composite Reliability	*0.849*	*0.827*	*0.852*	*0.818*
Average Variance Extracted (AVE)	*0.584*	*0.545*	*0.590*	*0.531*
Psychological Health				
PS1	0.859	0.796	0.817	0.819
PS2	0.819	0.764	0.815	0.766
PS3	0.826	0.835	0.817	0.838
PS4	0.845	0.783	0.857	0.772
PS5	0.825	0.869	0.834	0.861
Cronbach's Alpha	*0.892*	*0.870*	*0.886*	*0.871*
Composite Reliability	*0.920*	*0.905*	*0.916*	*0.906*
Average Variance Extracted (AVE)	*0.697*	*0.657*	*0.686*	*0.660*
Social Relationship				
SR1	0.853	0.862	0.849	0.860
SR2	0.905	0.805	0.852	0.848
Cronbach's Alpha	*0.710*	*0.564*	*0.619*	*0.629*
Composite Reliability	*0.872*	*0.820*	*0.840*	*0.843*
Average Variance Extracted (AVE)	*0.773*	*0.696*	*0.724*	*0.729*
Well-being				
WB1	0.901	0.891	0.919	0.876
WB2	0.936	0.912	0.935	0.909
WB3	0.939	0.924	0.920	0.930
WB4	0.818	0.845	0.830	0.841
WB5	0.895	0.821	0.795	0.875
Cronbach's Alpha	*0.940*	*0.926*	*0.928*	*0.932*
Composite Reliability	*0.955*	*0.945*	*0.946*	*0.948*
Average Variance Extracted (AVE)	*0.808*	*0.773*	*0.777*	*0.786*

The discriminant validity procedure follows Sarstedt, Henseler and Ringle (2011) using the Fornell-Lacker criterion and the indicator's cross-loading. The results are in Appendix A and Appendix B. Both analyses indicate the constructs exhibit discriminant validity. In addition, the HTMT procedure was also assessed. The HTMT of the strict threshold requires the value to be less than 0.85. A more lenient threshold of 0.90 or significantly smaller than 1.0 is acceptable (Franke & Sarstedt, 2019). In our study, the one-sided 95% percentile confidence of HTMT does not cover 1, which is significantly different from 1 (Franke & Sarstedt, 2019). Thus, the overall results provide support for the discriminant validity.

4. Results and Discussion

Analysis of Path Coefficient: The results of the structural model evaluation for all groups are presented in Table 3 and Table 4. The bootstrap analyses using 1,000 samples show mixed results of significant relationships. The well-being of the male students is predicted by only one factor, which is psychological well-being (β = 0.723, t = 7.369). On the other hand, the well-being of the female students is explained by psychological health (β = 0.441, t = 5.843), physical health (β = 0.270, t = 4.176) and environment (β = 0.135, t = 2.131). Nevertheless, the well-being variance of the male students of 0.633 is slightly higher than the female students of 0.618.

Table 3: Path Analysis of Male and Female Subsamples

	Male				Female			
Path relationship	**Coefficient**	**STDEV**	**t-value**	**p-value**	**Coefficient**	**STDEV**	**t-value**	**p-value**
Environment -> Well-being	-0.005	0.105	0.044	0.482	0.135	0.063	2.131	0.017
Physical Health -> Well-being	0.053	0.088	0.597	0.275	0.270	0.065	4.176	0.000
Psychological Health -> Well-being	0.723	0.098	7.369	0.000	0.441	0.075	5.843	0.000
Social Relationship -> Well-being	0.058	0.085	0.679	0.249	0.079	0.073	1.082	0.140

R^2 male: 0.633, R^2 female: 0.618

The results of the path analysis for urban students suggest their well-being is predicted by psychological well-being (β = =0.526, t = 8.042) and physical health (β = 0.288, t = 4.021) whereas the well-being of students who come from the rural area is explained by psychological health (β = 0.494, t = 5.270), environment (β = 0.164, t = 2.257) and physical health (β = 0.166, t = 2.136). The well-being variance for students who come from the urban area is higher than the students with a rural background, with 0.694 and 0.570, respectively. In general, the social relationship does not indicate any significant relationship to the well-being of all groups.

Table 4: Path Analysis of Urban and Rural Subsamples

	Urban				Rural			
Path relationship	**Coefficient**	**STDEV**	**t-value**	**p-value**	**Coefficient**	**STDEV**	**t-value**	**p-value**
Environment -> Well-being	0.070	0.078	0.893	0.186	0.164	0.073	2.257	0.012
Physical Health -> Well-being	0.288	0.071	4.021	0.000	0.166	0.078	2.136	0.016
Psychological Health -> Well-being	0.526	0.065	8.042	0.000	0.494	0.094	5.270	0.000
Social Relationship -> Well-being	0.077	0.074	1.039	0.150	0.033	0.081	0.407	0.342

R^2 urban: 0.694, R^2 rural: 0.570

Multigroup Comparison Test Result: A comparison of the gender and place of origin suggests several differences in the effects as presented above. However, whether the numeric differences for the groups are statistically different requires further examination. Thus, the multigroup comparison procedure as suggested by Sarstedt, Henseler and Ringle (2011) was followed. The results are presented in Table 5 and Table 6.

Table 5: Multigroup Comparison Test Results Between Male and Female

Relationship	**[diff]**	**$t_{Parametric}$**	**$p_{Permutation}$**
Environment -> Well-being	-0.14	1.208	0.073
Physical Health -> Well-being	-0.218	1.986**	0.020**
Psychological Health -> Well-being	0.282	2.237***	0.006***

Social Relationship -> Well-being	-0.021	0.178	0.439

Notes: *Significant at 0.10, **significant at 0.05, ***significant at 0.01

Table 5 shows the differences between male and female students, whereas Table 6 shows the results of the differences for urban and rural students based on the parametric approach. The results generally show there exists a significant difference ($p \leq 0.05$) between male and female subsamples in terms of physical health and well-being relationships and between psychological factors and well-being relationships. The comparison between the urban and rural subsamples suggests no significant difference in any of the relationships

Table 6: Multigroup Comparison Test Results Between Urban and Rural

Relationship	[diff]	$t_{Parametric}$	$p_{Permutation}$
Environment -> Well-being	-0.094	0.840	0.176
Physical Health -> Well-being	0.122	1.057	0.156
Psychological Health -> Well-being	0.032	0.239	0.398
Social Relationship -> Well-being	0.044	0.366	0.381

Notes: *Significant at 0.10, **significant at 0.05, ***significant at 0.01

Bias-corrected 95% Confidence Intervals and Multigroup Comparison Results: Table 7 shows the bias-corrected 95% confidence intervals approach, as well as the multigroup analysis results, which are based on Sarstedt, Henseler and Ringle (2011). Overall, in terms of significant differences, only the relationship between physical health and well-being and psychological health and well-being in comparing the male and female students are supported.

Table 7: Bias-corrected 95% Confidence Intervals and Multigroup Comparison Results

Relationship	Confidence Interval				Comparison	Sig
	Male	Female	Urban	Rural		
Environment -> Well-being	[-0.184, 0.149]	[0.015, 0.230]	[-0.076, 0.190]	[0.037, 0.278]	Male vs Female	Nsig.
					Urban vs Rural	Nsig.
Physical Health -> Well-being	[-0.097, 0.192]	[0.165, 0.375]	[0.156, 0.393]	[0.030, 0.287]	Male vs Female	Sig.
					Urban vs Rural	Nsig.
Psychological Health -> Well-being	[0.585, 0.899]	[0.301, 0.545]	[0.405, 0.620]	[0.333, 0.634]	Male vs Female	Sig.
					Urban vs Rural	Nsig.
Social Relationship -> Well-being	[-0.084, 0.187]	[-0.035, 0.202]	[-0.05, 0.196]	[-0.080, 0.195]	Male vs Female	Nsig.
					Urban vs Rural	Nsig.

As positive aspects, we would highlight the representativeness of the student sample in every state in Malaysia and the use of a cross-cultural instrument, which had been validated in the local environment, to measure QOL in its subjective and cross-cultural aspects. There are, however, acknowledged limitations of this study. First, this is a cross-sectional study that limits the interpretation of the causal direction of the study variables. Second, the use of self-report measures may also pose common method variance in the gathered data. Third, the measures used were made by Asian authors which may cast uncertainty on the relevance of the measures to the local setting. The findings, therefore, may have to be viewed with care. It is then recommended that future researchers attempt to conduct research that will help define and investigate well-being and quality of life that are culturally specific to the local experience. Further research is needed to explore the relationship between the QoL of students and the other variables not investigated here, as already mentioned above, as well as the use of the triangulation of quantitative and qualitative methods to understand better some of the results obtained in the light of the objectives, expectations, standards, and concerns of university students.

Discussion: This study's findings provide important insights into the relationship between many characteristics and the quality of life (QoL) of university students, particularly those from lower-income families, during the COVID-19 epidemic. This section will go into the relevance and significance of these findings, as well as acknowledge the study's shortcomings and offer future research directions. The study found significant gender disparities in well-being predictors among university students. Female students'

well-being was determined by a combination of psychological health, physical health, and the environment, but male students' well-being was predominantly driven by psychological health. This distinction is critical because it implies that specific therapies may be required to meet the individual well-being difficulties that males and females encounter (Gestsdottir et al., 2021).

Understanding gender differences is critical for educators and policymakers to provide adequate support to students. Counseling services and mental health programs for male students may benefit from treatments aimed at improving psychological well-being. Female students, on the other hand, may require a more comprehensive approach that tackles both physical health and environmental concerns, which may include initiatives linked to healthcare access and campus resources. Chao (2023) Chao's (2023) study in Taiwan supports these considerations, revealing that a higher proportion of female students have health-related majors, while more non-health-related students live in on-campus dormitories, reinforcing the need for tailored support strategies

The study also analyzed well-being predictors between urban and rural students. The well-being of urban students was highly influenced by psychological well-being and physical health, whereas the well-being of rural students was also influenced by the environment. Interestingly, despite these variations, urban students had higher overall well-being than rural students. These findings are consistent with a study published in Nature by Ochnik, Rogowska, and Kuśnierz, et al. (2021), which examined mental health prevalence and predictors among university students in nine countries during the COVID-19 pandemic. The study found that the place of residence was a significant predictor of high perceived stress, anxiety, and depression among students. Specifically, students from rural areas exhibited lower levels of depression compared to students from urban areas. The findings imply that the urban environment may inherently bring certain benefits to student's well-being. Urban regions often provide better access to healthcare, educational resources, and job possibilities. Policymakers should investigate methods to bridge urban-rural divides, such as increasing rural infrastructure and access to key services.

Multigroup analyses of male and female students, as well as urban and rural students, revealed significant disparities in the influence of physical and psychological health on well-being. These findings underscore the importance of establishing interventions and support systems that consider the diverse needs of student populations. Additionally, these results emphasize the significance of tailoring treatments based on gender and place of origin. Therefore, universities and educational institutions should adopt a more nuanced approach to support, addressing the various challenges faced by different student groups. This could involve the development of gender-specific mental health services and well-being initiatives aimed at mitigating urban-rural disparities. These findings are consistent with Graves et al.'s (2021) study, which found that females reported higher levels of perceived stress and used more emotion-focused coping strategies than males. The study highlights the necessity for gender-specific interventions targeting coping strategies to enhance the overall well-being of both male and female students.

5. Managerial Implications and Recommendations

While this study provides useful information, numerous limitations should be noted. For starters, the study's cross-sectional design limits our ability to demonstrate causal correlations between factors. Longitudinal research could help us understand how these characteristics change over time. Second, the use of self-report measures involves the risk of common method bias, which may influence the data collected. Third, while the study's measurements were validated in the local context, they were developed by Asian writers, raising concerns about their relevance to the specific local situation.

Future studies should investigate the cultural distinctiveness of well-being and QOL measures within the local environment to solve these constraints. Investigating the links between student QOL and hitherto unknown characteristics such as family support, financial stability, and access to technology for remote learning could provide useful insights. Furthermore, combining quantitative and qualitative data in a mixed-methods approach can provide a more comprehensive picture of the complex interaction of factors influencing students' well-being.

Conclusion: Finally, this study sheds light on the influence of the COVID-19 pandemic on the health and well-being of university students, with emphasis on gender and region of origin. Notably, significant inequalities in physical and psychological health were found between male and female pupils. However, there were no differences in the four dimensions of quality of life between students from urban and rural backgrounds. These findings have a number of significant consequences. For starters, they emphasize the varied character of student well-being during a global crisis, emphasizing the necessity for personalized support systems that consider the unique issues experienced by various student groups. Male and female students, for example, may benefit from different ways to address their individual well-being needs. Furthermore, the findings are consistent with SDG Three, underlining the need to promote sustainable health for all. Monitoring students' health and well-being is critical during the epidemic, not just for immediate reaction but also for determining long-term policies and plans. These insights can be used by higher education institutions and policymakers to improve student support mechanisms, both during the present pandemic and in preparation for any future crises. In essence, this study sheds light on the complexities of the university student well-being landscape in the face of a global epidemic. As educators and policymakers work to improve student well-being, it is critical to implement solutions that address disparities and promote long-term health for all, thereby contributing to the larger societal aim of nurturing well-being.

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