Well-being and Psychological Distress Status during Covid-19 Pandemic; Nursing Students' Experience from a Saudi Arabian University

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Abstract: **Background: All academic activities especially at the higher education level seemed to affect students' psychological condition in general. The Covid-19 pandemic including all other measures imposed upon humanity must have further affected these students as academic activities continued and have just shifted to the online format. Providing these measures of well-being and distress status would and may provide a new perspective in trying to understand better their condition.**

Aims: The purpose of the study was to explore diverse variables/factors that might have an association with the well-being and distress conditions of nursing students during the Covid-19 Pandemic especially emphasizing the Saudi Arabian experience.

Methods: A total of 324 participated in the approved online survey sent to all enrolled nursing students during the months of June-October 2020 in a premier university in Saudi Arabia. Descriptive statistics and the Chi-square test of association were utilized.

Results: The well-being index among the participants was Mn=3.01/SD=0.867 while the psychological distress scale's status was Mn=2.81/SD=0.484. Well-being ratings came as significantly associated with sex (p=.001), birth order (p=.037), leisure activity (p=.005), year level (p=.003), and average daily rest time (p=.041). While psychological distress status came with a significant relationship with sex (p=.001), leisure activity (p=.004), and average daily study time (p=.001).

Conclusion: Students' academic experience amidst a pandemic scenario affected their well-being and further complicated their psychological condition. Certain variables surely aggravated their conditions and must warrant enough attention from both academicians and parents alike to sustain non-failing, functional experiences.

Keywords: **Well-being, psychological distress, Covid-19 Pandemic experience, Saudi nursing students.**

I. INTRODUCTION

Different levels of education may have joint and, at the same time, different factors affecting their distinct kinds of learners. Higher education has various challenges and assorted forms of competition faced by college students from different levels of learning programs (Santrock, 2020). The educational system, not just at the higher education level, was proven to be "batter grounds" for students and academicians, and perhaps, the same environment where studies could be made to be able to understand these unique conditions better for the benefit of all concerns (e.g., learners, teachers, parents, and academic managers).

In a more extensive study (James et al., 2019) involving students from the US, Australia, and the UK, higher education studies concerning student well-being never had their downturn in the research study outputs. It also showed how faculty as facilitators of the educational process seemed to poise that strong position to influence students' conditions. The Brooker & Woodyatt (2019) study even articulated the scope of student mental well-being conditions and psychological distress by proposing different cohorts, similar to their study involving international students and even refugees). Higher education or college-level educational experience requires an early adult developmental stage from students that might even propose that they all are resilient and behaviorally robust to survive. However, there are specific conditions that might need special attention just like those previously mentioned, especially during the pandemic period such as the present. An emphasis on a supportive stance was even expressed (van Agteren et al., 2019) for a comprehensive need to measure students' mental health, including psychological distress through possible "positive and adaptive" states of well-being and resilience. Looking into the different possible factors from previous studies affecting well-being conditions and possible psychological distress situations of students, an abundance of varying publication outfits is available. A succeeding review would reverse the most recent internationally published studies. In Yağcı (2022) study, several factors were identified to be correlated to students' mental health status in general, including socioeconomic status, parents' age, and educational background. These were examples of variables classified in this study as personal and family-related variables. Another study also mentioned an academic variables like attendance and study time allocated by the student regularly (Foroughi et al., 2021). These academic variables were known to predict actual student performance, mainly referred to as GPA or Grade Point Average. Travel time spent by students, mostly in urbanized areas, seemed to correlate with GPA, according to Akhter & Rahaman (2020) as concurred with Singh (2016) study results. However, teachers as facilitators of the learning process, including all related factors, came as a significant influence on the wide-ranging possibilities, starting from maintaining well-being to manifesting psychological distress from students as learners and recipients of the learning instructions (Amoldeep et al., 2020). Considering studies done pre-pandemic period, the preceding are studies showing a handful of results clarifying further the focus of their separate and independent published studies. School climate, guidance, and counseling services were examples of school-related factors. Personal factors like socioeconomic status, ethnicity, and age of respondents, as concluded by Akamba et al. (2016) study significantly correlated to academic performance. Physical activity was also found relevant as a factor (Hagarty & Currie, 2012). This study chose different possible conditions ranging from outgoing/very sociable type to homebody and reclusive form. Students manifesting positive attitude, motivation, and concentration were also identified to make a difference in terms of academic performance, according to West & Sadoski (2011) article. Just as expected, vices like alcohol consumption and illicit drugs negatively affected GPA (Giordano et al., 2008). Coincidentally, any romantic relationship was also studied in that endeavor, though it was not found to have any correlational value. Other personal determinants like learning facilities, communication skills, and direct parental involvement (Okpala et al., 2001), including general health conditions and dyslexia (Frederickson & Jacobs, 2001), carried the same situation.

The Covid-19 pandemic had a significant impact on various aspects of everybody's lives, affecting more than the majority of the world's population regardless of race, creed, economic condition, and geographic boundaries. It also brought many new challenges, directly and indirectly, affecting all aspects of the educational process, not just at the higher level but at all levels of education. The expectation is to adopt (Meneghel et al., 2019). It must start from learning how it affected college students' well-being condition that might have resulted in them developing psychological distress while thriving in the "new normal" period utilizing online learning or its other variations.

II. BODY OF ARTICLE

Research Objective. Thus, this current study's aims were as follows: to examine the respondents' well-being status, as well as the psychological distress condition felt during the data gathering months, which incidentally were within the Covid-19 pandemic period; to recognize different variables (personal, academic, and family-related) that could show significant association from the respondents' well-being and psychological distress conditions; and lastly, to ascertain the effect size, if there are identified variables, of significantly associated variables from the different identified and chosen demographic features of participants.

Method. This study utilized a cross-sectional descriptive design whose actual data gathering happened during the months of June to October of 2020, when the Covid-19 pandemic affecting the entire Kingdom of Saudi Arabia suspended all classroom-based academic activities and utilized the online format.

Sample and data collection. Due to the prevailing conditions following newly implemented social distancing measures, participants preliminarily determined to be nursing students were supposed to be chosen through the non-probability sampling method. As the approval from the Ethics Committee stated, no personal data gathering using questionnaires was allowed and instead shifted to online data gathering now through convenience sampling. The research questionnaire was transformed into Google form and sent to all nursing students of different levels. Of the 800+ students who received the invitation to participate, 324 completed participations came back in almost three months of sending and re-sending.

Measuring the variables. The Google form-based questionnaire sent to nursing student participants consisted of three (3) parts. The first part contained items intended to gather information about the participants divided into three groupings; personal variables (age in years, sex, civil status, birth order, leisure activities), academic variables (GPA or grade point average, year level, course choice, reason for the course choice, average daily study time in hours, and average daily rest time in hours), and family-related variables (student's living arrangement, family residence, and family socioeconomic status). Part two utilized the WHO-5 Well-being index by the World Health Organization published in 1998 as part of its initial report on the matter released for public use and guide practitioners and researchers. Of the five items describing a condition, participants were asked to rate as follows: 1-sometimes, 2-half of the time, 3-more than half of the time, 4-most of the time, and 5-all the time. This instrument was described as "a pure generic scale" for measuring general well-being (Hall et al., 2011) that additionally carried a coherent measure of its focus dimension (e.g., well-being) according to its construct validity results. Part three utilized the Kessler Psychological Distress Scale by Professor Kessler of Health Care Policy from Harvard Medical School, published in 2001, intended for global use for both practitioners and researchers. Just the same, this particular instrument asks for negatively felt conditions as described and rated by participants: 1-sometimes, 2-half of the time, 3-more than half of the time, 4-most of the time, and 5-all the time.

Statistical analysis. IBM SPSS Statistics for Windows version 23.0 (IBM Corp., Armonk, NY, USA) was utilized for all statistical analyses in this study. Descriptive measures were utilized like frequency and percentages for all nominal-categorical variables, while the mean and standard deviation for scale variables were found mainly in the demographic features of respondents. Scale variables were also tested for normality through the Kolmogorov-Smirnov Test, considering Shapiro-Wilk's Test for its significance. Well-being index and psychological distress scale ratings were computed with mean and standard deviation, which were later on transformed into their equivalent categorical values. Ratings used by respondents had the following rating guides: 1-sometimes, 2-half of the time, 3-more than half of the time, 4-most of the time, and 5-all the time.

Ethical consideration. This research endeavor was conducted after it had obtained approval from the Institutional Review Board of King Saud University – Deanship of scientific research with approval number E-20-4760 dated 05 March 2020. It was emphasized that no personal and face-to-face data gathering would be done on such consent. Instead, it directed researchers to transform the printed questionnaire into its digital form sent via the Google Form. A short letter was part of its preface explaining that participation by actually answering the questions within the electronic form will be equivalent to giving consent. Anonymity and withdrawal from participation in all the different phases of the research process remained an actual prerogative of the student participants. An extension request from the same committee was asked because of the new challenges faced by researchers during the pandemic period. Social distancing and all health-related measures from the host institution following the general guidelines from the government were strictly adhered to by all participating researchers.

Results. The results of this study are presented as following successions. Characteristics of the participants were obtained in clustered variables like (1) personal variables, which included age, sex, civil status, birth order, and leisure activities, (2) academic variables, which included GPA (grade point average), year level, course choice, course choice reason, average daily study, and average daily rest time, and (3) Family-related variables which included students' living arrangement, family residence, and family socioeconomic status. The respondents' evaluation of their well-being and psychological distress status with equivalent ratings was done afterward. Another significant result is the possible relationships between demography and research utilization or the barriers. The last results included were differences in the ratings given on the identified dependent variables considering bivariate demographic features.

Demography. Table 1 shows the basic characteristics of the participants grouped into personal, academic, and family-related variables. By personal characterization, the age of the participants ranged from 18-25 years (Mn=20.48, SD=1.49) and was found to be normally distributed on both Kolmogorov-Smirnov and Shapiro-Wilk Tests with skewness of 0.783 (SE=0.135) and kurtosis of 3.93 (SE=0.101; p=.001). Additionally, participants were female-dominated (f=171/52.8%), mostly single (f=298/92.0%), mostly middle child (f=155/47.8%), and fairly outgoing or sociable (f=105/32.4%). Regarding the student participants' academic variables, GPA had Mn=4.16 and SD=0.50 and was normally distributed on both Kolmogorov-Smirnov and Shapiro-Wilk Tests with skewness of -0.89 (SE=0.135) and kurtosis of 0.587 (SE=0.27; p=.001). Also, participants were mostly from 2nd year (f=96/29.6%), course choice as first (f=124/38.3%), whose course appeared as a childhood dream (f=123/38.0%), spending an average daily study time of 4.07 hours (SD=2.28), and average daily rest time of 7.02 hours (SD=1.72). On the family-related variables, student participants live with their families (f=828/87.0%), mostly urban dwellers (f=246/75.9%), and middle-income families (f=294/90.7%). All scale measures from different variables resulted in normality using Kolmogorov-Smirnov Test with a p=.001 level of significance using the Shapiro-Wilk Test.

Table 1: Participants' Demography

Criteria	f	%	Mn	SD
Personal Variables:				
Age (Years)	--	--	20.48	1.49
Sex (Female)	171	52.8	--	--
Civil Status (Single)	298	92.0	--	--
Birth Order (Middle Child)	155	47.8	--	--
Leisure Activities (Outgoing/Sociable)	105	32.4	--	--
Academic Variables:				
GPA	--	--	4.16	0.50
Year Level (2nd Year)	96	29.6	--	--
Course choice (1st Choice)	124	38.3	--	--
Course choice reason (childhood dream)	123	38.0	--	--
Average daily STUDY time (hours)	--	--	4.07	2.28
Average daily REST time (hours)	--	--	7.02	1.72
Family-related Variables:				
Student's living arrangement (Family)	828	87.0	--	--
Family Residence (Urban)	246	75.9	--	--
Family Socio-Eco Status (Mid Income)	294	90.7	--	--

N=324

Well-being and distress measurements. According to the results, as presented in Table 2 on well-being index measurement and Table 3 on psychological distress conditions, ratings from the participants were analyzed with the following results. The well-being index showed an average rating of 3.04 with SD=0.867, meaning participants had experienced well-being "more than half of the time." On that condition, they all felt that "life has been filled with things that interest them" (Mn=3.16; SD=1.176), "active and vigorous" (Mn=3.07; SD=1.092), and "felt calm and relaxed" (Mn=2.91; SD=1.121). Rating guide and range intervals for interpretations are all itemized in the same table. The psychological distress measurements got an overall scale rating average of 2.81 (SD=0.848) which meant participants had experienced this distressed condition "more than half of the time." On that condition, they also felt "nervous" (Mn=3.12; SD=1.120), "tired out for no reason" (Mn=3.06; SD=1.123), and "everything was an effort" (Mn=3.03; SD=1.035). The lowest-rated component was the feeling of "being so nervous that nothing can calm" them (Mn=2.48; SD=1.218), which was "half of the time."

Table 2. WHO-5 Well-being Index

Categories	Mn	SD
1. I have felt cheerful in good spirits.	2.24	1.13
2. I have felt calm and relaxed.	2.91	1.12
3. I have felt active and vigorous.	3.07	1.09
4. I woke up feeling fresh and rested.	2.84	1.15
5. My daily life has been filled with things that interests me.	3.16	1.18
WHO-5 Wellbeing Index Average	*3.04*	*0.867*

n=324

Rating Guide: 0- At no time; 1-Sometimes; 2- Half of the time;
3-More than half of the time; 4-Most of the time; 5-All the time.

Range Intervals: 1.00-1.75 Sometimes; 1.76-2.50 Half of the time
2.51-3.25 More than half of the time; 3.26-4.25 Most of the time
4.26-5.00 All the time

Table 3. Kessler Psychological Distress Scale (K10)

Categories	Mn	SD
1. How often did you feel TIRED out or no reason?	3.06	1.12
2. How often did you feel NERVOUS?	3.12	1.12
3. How often did you feel SO NERVOUS that nothing calms you?	2.48	1.22
4. How often did you feel HOPELESS?	2.73	1.22
5. How often did you feel RESTLESS or fidgety?	2.92	1.09
6. How often did you feel SO RESTLESS you could not sit still?	2.62	1.09
7. How often did you feel DEPRESSED?	2.82	1.28
8. How often did you feel that everything was an EFFORT?	3.03	1.04
9. How often did you feel SO BAD that nothing could cheer you?	2.71	1.20
10. How often did you feel WORTHLESS?	2.56	1.23
K10 Psychological Distress Scale Average	*2.81*	*0.84*

n=324

Rating Guide: 0- At no time; 1-Sometimes; 2- Half of the time;
3-More than half of the time; 4-Most of the time; 5-All the time.

Range Intervals: 1.00-1.75 Sometimes; 1.76-2.50 Half of the time
2.51-3.25 More than half of the time; 3.26-4.25 Most of the time
4.26-5.00 All the time

Testing for associated variables. Several personal, academic, and family-related variables were tested for significant association with well-being and psychological distress ratings, as shown in Table 4. A Chi-square test of independence was performed. Well-being ratings were found to be significantly associated with sex $x^2(4, N=324) =32.769$, p=.001, birth order $x^2(12, N=324) =22.092$, p=.037, and leisure activities $x^2(12, N=324) =28.375$, p=.005 among the personal variables. Well-being ratings were significantly associated with year level $x^2(20, N=324) =41.527$, p=.003, and average daily rest time $x^2(12, N=324) =21.743$, p=.041 among the academic variables. No family variables were found to be associated with well-being ratings. As regards the psychological distress ratings when tested for association, personal variables sex $x^2(4, N=324) =34.011$, p=.001 and leisure activities $x^2(12, N=324) =29.139$, p=.004 showed significance. While, only average daily study time $x^2(12, N=324) =42.125$, p=.001 was significantly associated. No family variables were found to be associated with psychological distress ratings. Effect sizes were determined for the significantly associated variables through Cramer's V considering IBM Cognos Analytics' interpretation of effect size. Well-being ratings and sex (V=.318) had a moderate association. In contrast, well-being ratings and leisure activities (V=.171), birth order (V=.151), year level (V=.179), and average rest time (V=.150) were all found to have weak associations. On the other hand, psychological distress ratings had a moderate association with sex (V=.324) and average study time (V=.208), while leisure activity (V=.173) had an only weak association.

Page | 34

Table 4. Test of Associations between demography and rating scales

Demography	WHO-5 Well-being Rating				K10-PDS Rating			
	X^2	df	p	V	X^2	df	p	V
Personal Variables:								
Sex	32.769	4	0.001	0.318	34.011	4	0.001	0.324
Civil Status	4.083	4	0.395		3.600	4	0.463	
Birth Order	22.092	12	0.037	0.171	17.497	12	0.132	
Leisure Activities	28.375	12	0.005	0.151	29.139	12	0.004	0.173
Academic Variables:								
GPA	15.273	12	0.227		7.670	12	0.810	
Year Level	41.527	20	0.003	0.179	26.412	20	0.153	
Course Choice	18.635	16	0.288		20.769	16	0.188	
Course Choice Reason	21.602	16	0.157		10.925	16	0.814	
Average daily study time (Hrs)	9.345	12	0.673		42.125	12	0.001	0.208
Average daily rest time (Hrs)	21.743	12	0.041	0.150	16.399	12	0.174	
Family Variables:								
Living Arrangement	14.860	12	0.249		12.762	12	0.387	
Family Residence	7.397	4	0.116		9.010	4	0.061	
Family Socio-Eco Status	14.757	8	0.064		8.491	8	0.387	

n=324   α - .05

Abbreviations: WHO=World Health Organization
            K10-PDS = Kessler 10 Psychological Distress Scale
            GPA=Grade Point Average

Effect Size (ES) from IBM Cognos Analytics 11.1.X:
ES ≤ 0.2 = weakly associated
0.2 < ES ≤ 0.6 = moderately associated
ES > 0.6 = strongly associated

III.   DISCUSSION

College life is where students can expect and have experienced different ups and downs from various academic, non-academic, and para-academic causes (Beiter et al., 2015; Taylor et al., 2013; Zhang et al., 2013). It is a time for these learners to search for the meanings and form their values relevant to their existence influenced by their past, molded in their present, and hopefully manifest in their self-determined future. Their present situation is a critical time, significantly when it is being affected by the current pandemic out of the ordinary. The increasing clamor was felt to recognize the need for health and academics to improve college student's well-being (e.g., physical, social, emotional, and even spiritual) in the hope of influencing their general performance and condition (Baldwin et al., 2017; Marley & Wilcox, 2020; Young et al., 2015) favorably. Looking at this situation, this current study proposed and caused to present a limited and partial picture hoping to contribute and make a larger and more complete view of the situation focused on the well-being and psychological distress conditions of tertiary-level learners. There were already a lot of studies on the topic-specific to nursing students internationally (Al-Ani, 2020; Ara et al., 2021; Chow et al., 2018; Jin & Kim, 2017; Mazzucchelli & Purcell, 2015; McSharry & Timmins, 2017).

Reviewing available literature on the topic, the following are presented to substantiate findings or provide contrasting views as other researchers might have found a product of their research studies. Again, to reiterate the present study results, the well-being status of respondents and their psychological distress condition were the "more than half of the time" experience despite the Covid-19 pandemic. This condition was significantly associated with sex or gender, leisure activity, birth order, year level in their academic program, and average rest periods. Pre-pandemic literature presented the following regarding sex/gender and well-being/psychological distress (WB/PD). Few results came professing that sex/gender differences seemed to have an equal association with WB/PD (Rasim, 2015; Tekletsadik, 2019) and even emphasizing that such condition is even proper with stress factors. One study from Damota (2019) spoke of males having a higher association with self-esteem that promoted well-being experience for them, while Heller & Sarmiento (2016) study underlined this gender as more connected with psychological distress because of what the study termed as "risky behaviors" about substance abuse,

heavy alcohol consumption, reckless driving, tobacco/cigarette use and others (Ridner et al., 2015; Ruthig et al., 2011). However, it was contradicted by Hall et al. (2006) study, which claimed that males have higher stress tolerance leading to a lower distress level experience or condition, while Alansari (2019) identified female students as having more association with well-being because of religiosity. Interestingly, some studies showed that general conditions were connected with different sorts of academic, social, and related concepts in their realities as adult learners. The survey done by Young et al. (2015) presented this finding of no difference in the status of well-being and experience of academic difficulties considering both genders or sexes. Remarkably, "student resilience" seemed to affect well-being (Chow et al., 2018) positively. In contrast, the Idris et al. (2019) study provided a tangible way to measure it and concurred that the student's level of resilience reflects a positive correlation with general well-being condition. Another concept called "psychological inflexibility" was mentioned in the study of Mazzucchelli & Purcell (2015) that explained well-being was heightened by "student's perception of physical security."

On the same topic of well-being having associated with gender/sex, it is understandable that available and relevant references on this topic researched might be low during the pandemic period. In the Alnahdi & Aftad (2020) study, female gender/sex experienced more stressors of different variables, which came under one concept heading as psychological distress. That same study even pointed out that female students were more associated with academic stress, including "hooking up" (e.g., sexual activities and relationships), which lowers well-being. During this health crisis, some studies were published stating different concepts affecting well-being and psychological distress in students. Having been forced to practice social distancing and physical isolation, psychological distress impacted students through depression, anxiety, and stress (Al-ani, 2020), pointing to more prolonged social media exposure (Lane, 2020). The use of social media among university students seemed to have intensified and affected the "subjective well-being," according to a later study by Park (2021). It was concurred by the Bunz (2021) study introducing the term "negative well-being" with substantial predictive value to social media use emphasizing the manner and time elements, and another coined as PSMU or "problematic social media use" by Schivinski et al. (2020). Looking at leisure activity, there were many studies pre-pandemic that focused on social media and internet addiction (Chern & Huang, 2018). Additionally, these forms of social activities were found to cause harm like sleep problems (Kwon et al., 2019), usually coupled with drinking or smoking activities (Ruthig et al., 2011), resulting in academic failure. To Vendel (2015) study, extraversion was found to negatively affect academic achievement or performance. This condition has been found to exacerbate depression (Chern & Huang, 2018) that directly affects well-being resulting in its equivalent form of any and available psychological distresses. Many studies are still expected on these topics during the pandemic period.Body of article gives the complete description of research work. It includes problem statement, methodology used for solving problem, proposed solution of given problem, conclusion of complete research.

IV. SUMMARY AND CONCLUSION

The present study confirmed a moderate level or, as the proper remarks following the tools utilized "more than half of the time" would state, well-being condition was generally pervading among the respondents, including the same situation when they described the level of experience in terms of psychological distress. These findings were similarly concurred by cited studies and bore the necessity of its importance to parents/guardians, educators and academic managers, and most especially to higher education learners. Cursory identification of variables as extraordinarily affected during a pandemic situation just as the present one showed very little and minimal differences and therefore necessitates further study in the coming years to allow more concurrent, relevant studies. In a more focused result, sex and leisure activity appeared to have an appreciable correlation with well-being and psychological distress. Incidentally, family-related variables seemed not to appear relevant to the same previously mentioned dependent variables that appeared to be a concern in some studies. As expected, well-being is related to average daily rest time, while psychological distress is similar to average daily study time. These independent variables having their own unique and dynamic relationship with different identified dependent variables can significantly provide the necessary evidence in designing and reviewing higher education programs or curricula or in defining particular interventions that could help tertiary level students and educators cope with the "normal" and epidemic-like demands of the teaching-learning process.

Limitations of the Study. The following were identified as some of the limitations of this study. Because of the cross-sectional design, this study was limited to not include any causality application and related considerations. Though the size

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seemed more than adequate from the computed value compared to the actual output, it could have been better to increase and include all other related institutions. Additionally, the study's data gathering procedure done online and via a free online application might have affected even less the reliability compared to the usual personal approach. Be it known that the last two limitations were due to the pandemic social-health restrictions given by government authorities.

Authors' Contributions

GMP: Study design, data analyses, and manuscript writing.

RPC: Study design, communications, and IRB documentation.

IMR: Related studies review, manuscript drafting, and analyses.

The authors read and approved the final manuscript.

Availability of data and materials. The datasets obtained and used in this research endeavor may be made available upon request from the primary and corresponding author and conveniently accessed in the Synapse Repository with Synapse ID: syn28345100 and DOI: 10.7303/syn28345100.

Ethics approval and research consent. The Institutional Review Board of the King Saud University at the College of Medicine deemed the application to conduct research was consented to and approved through Research Project No. E-20-4760 dated 03/05/2020 with approved extension request for another year due to the pandemic complications and challenges.

Conflict of Interest. The authors declare NO competing interests whatsoever.

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