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Factors Associated with Depressive Symptoms Among Community-Dwelling Older People in East-Coast Malaysia

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Abstract

Older people are increasing in number globally, and they are likely to have mental health problems, including depression. In this population, the risk of having depressive symptoms is very high due to multidimensional factors, but these symptoms are often undertreated. This study aimed to determine the prevalence and associated factors of depressive symptoms among community-dwelling older people living on the East Coast of Malaysia. A cross-sectional study was conducted in several areas of the state of Terengganu based on multilayered stratified sampling. A total of 240 participants were randomly selected. Several instruments were employed, such as the Geriatric Depression Scale, University of California Los Angeles Loneliness Scale, Pittsburgh Sleep Quality Index, Elderly Cognitive Assessment Questionnaire, Multidimensional Scale of Perceived Social Support, Duke University Religion Index, Barthel Modified Index, and Instrumental Activities of Daily Living Scale. The prevalence of depressive symptoms was 24.6%. The results of the multivariate logistic regression model also revealed that being a single elderly (adjusted odd ratio [aOR] = 4.42; Confidence Interval [CI] = 1.22; 15.96), poor social support (aOR = 3.06; CI = 1.18; 7.93), loneliness (aOR = 21.11; CI = 9.87; 45.18), impaired functional status (aOR = 3.39; CI = 1.22; 9.39), impaired instrumental function (aOR = 6.09; CI = 1.95; 19.0), and having asthma (aOR = 14.14; CI = 2.83; 70.5) were associated with depressive symptoms. Thus, screening older people during primary care is needed for early detection of depression and initiation of community-based interventions to address the psychological aspects of this disorder.

Keywords: aging, community dwelling, depression, elderly, factor, mental health

Abstrak

Faktor-Faktor yang Berkaitan dengan Gejala Depresi pada Kalangan Lansia di Pantai Timur Malaysia*. Jumlah penduduk lanjut usia di seluruh dunia semakin meningkat, dan mereka cenderung mempunyai masalah kesehatan mental, termasuk depresi. Pada populasi ini, risiko terjadinya gejala depresi sangat tinggi karena faktor multidimensi, namun gejala tersebut seringkali tidak tertangani. Penelitian ini bertujuan untuk mengetahui prevalensi dan faktor-faktor yang berhubungan dengan gejala depresi di kalangan lansia yang tinggal di Pantai Timur Malaysia. Sebuah studi* cross-sectional *dilakukan di beberapa wilayah negara bagian Terengganu* berdasarkan multilayered stratified sampling. *Sebanyak 240 peserta dipilih secara acak. Beberapa instrumen yang digunakan antara lain* Geriatric Depression Scale, University of California Los Angeles Loneliness Scale, Pittsburgh Sleep Quality Index, Elderly Cognitive Assessment Questionnaire, Multidimensional Scale of Perceived Social Support, Duke University Religion Index, Barthel Modified Index, *dan* Instrumental Activities of Daily Living Scale. *Prevalensi gejala depresi adalah 24,6%. Hasil* multivariate logistic regression model *juga mengungkapkan bahwa menjadi lansia tunggal (*adjusted odds ratio *[aOR] = 4,42;* Confidence Interval *[CI] = 1,22; 15,96), dukungan sosial yang buruk (aOR = 3,06; CI = 1,18; 7,93), kesepian (aOR = 21,11; CI = 9,87; 45,18), gangguan status fungsional (aOR = 3,39; CI = 1,22; 9,39), gangguan fungsi instrumental (aOR = 6,09; CI = 1,95; 19,0), dan menderita asma (aOR = 14,14; CI = 2,83; 70,5) berhubungan dengan gejala depresi. Oleh karena itu, memeriksa lansia selama perawatan utama diperlukan untuk deteksi awal depresi dan inisiasi intervensi berbasis komunitas yang dapat mengatasi aspek psikologis dari gangguan ini.*

Kata Kunci: *depresi, faktor, kesehatan mental, lansia, penuaan, tempat tinggal komunitas*

Introduction

Depressives are frequently reported among older people and the symptoms mimic the normal features of aging (Jha et al., 2019). According to the American Psychiatric Association (2013), common symptoms of depression in the elderly include persistent sadness, feeling slowed down, excessive worries about finances and health problems, frequent tearfulness, feeling worthless or helpless, changes in weight, pacing or fidgeting, difficulties in concentration, sleeping, somatic complaints such as unexpected physical pain, gastrointestinal problems, and withdrawal from social activities. The World Health Organization (2017) reported that depression occurs in 7% of the elderly population and in 5.7% of the years of life lost due to disability in the age group 60 and older. The prevalence of depression among older people has been assessed worldwide. Most studies were conducted in West Africa (Kugbey et al., 2018), while one study was carried out in East Africa (Mirkena et al., 2018). Two studies were conducted in the Middle East (El-Gilany et al., 2018; Tanjanai et al., 2017), and one was carried out in Australia (Mohebbi et al., 2019). Numerous epidemiological studies were conducted in South Asian countries, and they reported a prevalence of depressive symptoms among older people ranging from 19.3% to 34.6% (Aznan et al., 2019; Bhamani et al., 2013; Charoensakulchai et al., 2019; Cherry et al., 2012; He et al., 2016; Li et al., 2015; Pilania et al., 2019; Putri & Fitriyani, 2016).

Many studies found that older females were more likely to have depression compared to older males (Ashe & Routray, 2019; Bae, 2020; Dai et al., 2019; Disu et al., 2019; El-Gilany et al., 2018; Fatima et al., 2019; Kavithai et al., 2018; Mirkena et al., 2018; Tanjanai et al., 2017). This may be because women carry the burden of household responsibilities and face numerous conflict events throughout their lives. Being unmarried, widowed, or divorced was found to be significantly associated with depressive symptoms because the elderly feel lonelier when they live alone (Rajapakshe et al., 2019). In one study Rashid and Tahir (2015), severe depression was reported among participants who had completed primary school and were unemployed.

Several biological factors, such as being female (Aznan et al., 2019), old age (Rashid & Tahir, 2015), and chronic illnesses (e.g., hypertension, osteoarthritis, and swallowing problems) (Vanoh et al., 2016), have been found to be significantly associated with depressive symptoms. Furthermore, somatic symptoms such as sleep disturbance (Jha et al., 2019), comorbid diseases, poor physical status, and cognitive impairment due to structural changes in the brain have been linked to depression (The Best Practice Advocacy Centre New Zealand, 2011). Depressive symptoms have been reported among older people who are unable to carry out activities of daily living (ADL) (Cong et al., 2015; Disu et al., 2019; Konda et al., 2018; Manandhar et al., 2019; Shao et al., 2017; Simkhada et al., 2018).

Psychological conditions such as living alone, being socially isolated, having few social interactions, and having recent functional dependence may cause depressive symptoms among the elderly (Yánez et al., 2019). Several studies conducted in Malaysia have documented depression among older people at rates ranging from 13.7% (Hamzah et al., 2018) to 19.3% (Aznan et al., 2019). One study found that older individuals living in rural areas were more depressed than those living in urban areas (Economic Research Institute for ASEAN and East Asia, 2019). This finding might be due to young adults migrating to urban areas, which leads to an increasing number of older people experiencing empty-nest syndrome. This syndrome involves feelings of grief and loneliness for elderly parents whose children have left home for the first time, and it may increase the probability of depression among said parents (Md Nor & Ghazali, 2016).

Spirituality is an important element in older

people's lives; it underpins religious practices and beliefs. El-Gilany et al. (2018) found that older individuals who exhibited higher religiosity had lower depressive symptoms. Furthermore, in Winahyu and Sari's (2017) study, religiosity was significantly associated with depression and religious activity, showing the strongest relationship in the study ($r = 0.71$, $p < 0.01$). Thus, religiosity may lowest depression symptoms among older people who engaged with the religious activities at the mosque or church or attending the religion classes.

Scholars have reported the individual factors associated with depressive symptoms among community-dwelling older people, and the prevalence of depression is widely known. However, the evidence concerning multiple factors—bio-psychosocial and spiritual ones—is still inconsistent. The variables of sleep quality and spirituality as factors is minimal, and it only focuses on bio-psychological factors. In previous studies of community-dwelling elderly, multiple bio-psychosocial and spiritual factors have been addressed. Moreover, several of these studies have looked at countries in the Middle East (El-Gilany et al., 2018). The cultures, belief systems, and outlooks of the populations living in these countries, though, are significantly different from those of Muslims in Malaysia. To fill these gaps in the literature, we added sleep quality and spirituality as variables to measure the factors associated with depression; this will ensure that this study will conduct a comprehensive assessment with appropriate tools.

Additionally, there is a need to identify depression among community-dwelling older people living on the East Coast of Malaysia, particularly in Terengganu. The population of this state consists overwhelmingly of Malay Muslims (90%), who dedicate their last years of life to Allah. According to one study (Ismail et al., 2012), 77% of locals reported being keen to participate in religious and social activities in daily life. This study aimed to determine the prevalence and associated factors of depression among community-dwelling elderly living on the East Coast of Malaysia due to the paucity of data on depressive symptoms in this population.

Methods

A cross-sectional, door-to-door survey was conducted in a selected district in Kuala Terengganu, with multilayered stratification carried out in a number of subdistricts. The primary sampling unit was Terengganu. The second layer of sampling involved the selection of districts within the region, and Kuala Terengganu was chosen due to the high number of older people living there. The third layer of sampling entailed the selection of subdistricts within Kuala Terengganu; the lottery method was used to randomly select three subdistricts. The study lasted from December 2021 to July 2022. In total, 240 individuals aged 60 years or above agreed to participate. The participants were recruited based on the name lists given by the person in-charge of the selected subdistricts. The inclusion criteria were being aged 60 years or above, being a Malaysian citizen, and having lived in the Kuala Terengganu district for a minimum of three months. The exclusion criteria were residing in nursing homes or receiving respite care and having aphasia, deafness, and articulation disorders due to speech and communication difficulties. Older people with dementia or psychotic disorders were also excluded.

To collect data, this study used interviews based on a validated questionnaire that consisted of sections on sociodemographic characteristics; health status; cognitive, psychosocial, and functional factors; sleep patterns; and religious practices. The sociodemographic characteristics included age, gender, marital status, education level, living arrangements, and monthly income. Information on health status was obtained by asking the participants whether they had common chronic diseases; this could be verified based on the medical-appointment notebooks.

Depressive symptoms were assessed with the 15-item Geriatric Depression Scale, with a reliability of 0.68 (Teh & Hasanah, 2004). A score higher than five indicated a high-risk symptom.

Cognitive status was evaluated with the Elderly Cognitive Assessment Questionnaire, which has been validated in Singapore and employed as a screening tool among the elderly. A score of five or less indicates cognitive impairment with "probable" dementia. The sensitivity was 85.3%, and the specificity was 91.5%, with a Cronbach's alpha value of 0.73 (Kua & Ko, 1992). The short University of California Los Angeles Loneliness Scale (UCLA-8) was used to assess the level of loneliness, with a reliability of 0.85 (Swami, 2009). The Multidimensional Scale of Perceived Social Support (MS PSS-M) was employed as a brief measure of the social support perceived by an individual. MSPSS-M showed strong reliability, with Cronbach's alpha values of 0.77 and 0.76 for the Family-Significant Others and Friends subscales, respectively (Din et al., 2018). Functional status was measured using the ADL, which had a reliability of 0.85. Instrumental activities of daily living (IADL) had a reliability of 0.76 (Harith & Tan, 2020). The Pittsburgh Sleep Quality Index was employed to measure the quality and patterns of sleep among the participants, and it had a reliability of 0.74 (Farah et al., 2019). The Malay version of the Duke University Religion Index was used to assess religious involvement in daily life, with a reliability of 0.70 (Nurasikin et al., 2010).

SPSS Statistics for Windows, version 210 was utilized for data entry and analysis. Frequencies and percentages were calculated for the demographic data and dependence status. The categorical data were summarized as numbers and percentages. The Chi-square test determined the associated factor, while the phi value was used to determine the correlations among the categorical data. Binary logistic regression was applied to determine significant values. The variables with *p*-values lower than 0.05 at the bivariate level were introduced into the multivariable model.

The Ethics Committee of the International Islamic University of Malaysia (IIUM) approved this study on January 8, 2022 (reference number: IIUM/504/14/2/IREC 2022-003). The permission to conduct this study were sought from the Mukim officer on March 2, 2022, and the head villagers gave permission on March 10, 2022. Consequently, all the participants were briefed about the study and asked to provide written informed consent before the interviews. Therefore, the study followed all relevant ethical principles.

Results

A total of 240 individuals agreed to participate in this study. Table 1 shows the characteristics of the participants. Their ages ranged from 60 to 105 years. Females were more numerous (62%; n = 149) than males (38%; n = 91). The most common marital status was married (57%; n = 137), followed by widowed (35%; n = 84), divorced (5%; n = 12), and single (3%; n = 7). Most participants had received formal education (60%; n = 145), having attended at least primary school. The majority were not working (53%; n = 126) and living with their children (47%; n = 112), and their financial resources were less than RM 1,000 (62%; n = 149). Most of the participants had been diagnosed with hypertension (68%; n = 164), diabetes mellitus (45%; n = 109), and hyperlipidemia (33%; n = 79). Almost all were nonsmokers (93%; n = 223). All the participants were Malay Muslims and nondrinkers (100%).

Table 2 presents the depressive symptoms found among the participants. The symptoms' classification (normal to severe) is based on the scores of the Geriatric Depression Scale. The total prevalence of depressive symptoms in the sample was 24.6%. Among those who reported depression, 14.2% had mild symptoms, while 8.3% and 2.1% had moderate and severe symptoms, respectively.

Table 1. Demographic Characteristics of the Participants

Characteristics	Frequency (n)	Percentage
Gender		
Male	91	38%
Female	149	62%
Age group		
60–69	106	44%
70–79	100	42%
80 and above	34	14%
Marital status		
Married	137	57%
Single	7	3%
Widowed	84	35%
Divorced	12	5%
Education level		
No formal education	43	18%
Primary	145	60%
Secondary	36	15%
Tertiary	16	7%
Occupation		
Retired	89	37%
Unemployed	126	53%
Employed	25	10%
Financial status		
Less than RM 1,000	149	62%
RM 1,000–1,900	71	29.5%
RM 2,000–3,900	18	7.5%
RM 4,000–5,999	2	1%
Living status		
Living alone	22	9%
Nuclear family	101	42%
Living with children	112	47%
Living with relative	5	2%
Smoking		
Smoker	17	7%
Nonsmoker	223	93%
Alcohol intake		
Yes	0	0%
No	240	100%
Health status		
Hypertension		
Yes	164	68%
No	76	32%
Diabetes mellitus		
Yes	109	45%
No	131	55%
Hyperlipidemia		
Yes	79	33%
No	161	67%
Hyper/hypothyroidism		
Yes	7	3%
No	233	97%
Anemia		
Yes	7	3%
No	233	97%

Characteristics	Frequency (n)	Percentage
Heart disease		
Yes	33	13%
No	208	87%
Asthma		
Yes	18	8%
No	222	92%
Upper- and lower-tract gastrointestinal problems		
Yes	27	11%
No	213	89%
Hepatitis		
Yes	14	6%
No	226	94%
Renal problems		
Yes	29	12%
No	211	88%
Arthritis		
Yes	31	13%
No	209	87%
Gout		
Yes	24	10%
No	216	90%
Stroke		
Yes	19	8%
No	221	92%
Seizures		
Yes	14	6%
No	226	94%

Table 2. Prevalence of Depressive Symptoms

Classification	Frequency (n)	Percentage
Normal	181	75.4%
Mild depression	34	14.2%
Moderate depression	20	8.3%
Severe depression	5	2.1%

Table 3 shows the factors significantly associated ($p < 0.05$) with depression based on single logistic regression. Older people who were single, divorced, and widowed (OR = 2.67; CI = 1.46; 4.87) exhibited depressive symptoms. Those who lived with a spouse (OR = 0.35; CI = 0.18; 0.69) and who had chronic illnesses, such as asthma (OR = 2.68; CI = 1.01; 7.15) and cognitive impairment (OR = 0.38; CI = 0.39; 0.19), had depressive symptoms. Older individuals who felt lonely (OR = 21.11; CI = 9.87; 45.18) and without social support (OR = 4.27; CI = 2.29; 7.92) were also found to show signs of depression. Furthermore, daily functional status (i.e., ADL) was found to be impaired (OR = 6.45; CI = 3.40; 12.24), and the results for instrumental daily functional status (i.e., IADL) were OR = 9.34, CI = 4.75, and 18.38. Finally, older people with low intrinsic religiosity (OR = 5.69; CI = 2.09; 15.49) exhibited depressive symptoms.

Table 4 presents the risk factors significantly associated with depression after controlling for confounders with forward and backward elimination based on the multivariable logistic regression model. This analysis eliminated the variable that improved the model and repeated this process until no further improvements were possible in order to obtain the final set of inde-

Table 3. Factors Associated with Depression Based on Simple Logistic Regression

Variables	B	Crude OR	95% CI	Wald	df	p
Marital status						
Married	-	-	-	-	-	-
Single	0.98	2.66	1.46; 4.87	10.10	1	0.001
Living arrangement						
Living with children	-	-	-	-	-	-
Nuclear family	−1.04	0.35	0.18; 0.69	9.11	1	> 0.003
Living with relative	−0.68	0.51	0.06; 4.69	0.36	1	0.55
Living alone	−0.71	0.76	0.26; 2.10	0.28	1	0.60
Asthma						
No	-	-	-	-	-	-
Yes	0.99	2.682	1.01; 7.15	3.89	1	0.05
Cognitive impairment						
Normal	-	-	-	-	-	-
Impaired	−0.95	0.39	0.39; 0.19	7.59	1	0.006
Loneliness						
Not lonely	-	-	-	-	-	-
Lonely	3.05	21.11	9.87; 45.18	61.74	1	0.001
Social support						
Good Social Support	-	-	-	-	-	-
Poor Social Support	−1.45	4.26	2.29; 7.92	20.90	1	0.001
Functional status (ADL)						
Good ADL	-	-	-	-	-	-
Impaired ADL	1.87	6.45	3.40; 12.24	32.60	1	0.001
Functional status (IADL)						
Good IADL	-	-	-	-	-	-
Impaired IADL	2.24	9.34	4.75; 18.38	41.88	1	0.001
Religiosity						
Abundant	-	-	-	-	-	-
Scarce	−1.74	5.70	2.09; 15.49	11.63	1	0.001

CI = confidence interval, df = degree of freedom.

Table 4. Factors Associated with Depression Based on Multiple Logistic Regression

Variables	B	aOR	95% CI	Wald	df	p
Marital status						
Single	1.49	4.42	1.22; 15.96	5.15	1	0.02
Asthma	2.65	14.14	2.83; 70.5	10.44	1	0.001
Lonely	3.05	21.11	9.87;45.18	61.74	1	0.001
Poor social support	1.12	3.06	1.18; 7.93	5.27	1	0.001
Impaired ADL	1.22	3.39	1.22; 9.39	5.49	1	0.01
Impaired IADL	1.81	6.09	1.95; 19.0	9.66	1	0.002

The Enter Multiple Logistic Regression model was applied.
Multicollinearity and interaction terms were checked and not found.
The Hosmer-Lemeshow test (p = 0.479), classification table (overall correctly classified percentage = 90.4%), and area under the Receiver Operating Characteristic (ROC) curve (93.7%) was applied to check the model fit.

pendent risk-factor variables for depression. The multivariate model revealed that an older person who was single risked having depression (aOR = 4.42; CI = 1.22; 15.96). Loneliness (aOR = 21.11; CI = 9.87; 45.18) and poor social support (aOR = 3.06; CI = 1.18; 7.93) were also significantly associated with depressive symptoms. Moreover, older individuals with impaired instrumental function (aOR = 6.09; CI = 1.95; 19.0), impaired functional status (aOR = 3.39;

CI = 1.22; 9.39), and asthma (aOR = 14.14; CI = 2.83; 70.5) were at risk of depression.

Discussion

The prevalence of depression among the participants was 24.6%, which is slightly higher than the figure reported by Aznan et al. (2019) (19.3%). This might be because the latter study was conducted in a structured-living residence and before the COVID-19 pandemic, which might have alleviated people's depressive symptoms. A previous community-based study reported a high prevalence of depression among older people in some South Asian countries, ranging from 34.4% in India (Pilania et al., 2019) and 40.6% in Pakistan (Bhamani et al., 2013) to 44.2% in Bangladesh (Cherry et al., 2012), 36.94% in China (He et al., 2016), 18.5% in Thailand (Charoensakulchai et al., 2019), and 34.6% in Singapore (Li et al., 2015).

In the present study, being single and a lack of social support were associated with depressive symptoms due to adverse life events such as losing a spouse or close friend. The people who find themselves in these situations lack companionship and family support (Rajapakshe et al., 2019; Rashid & Tahir, 2015; Thilak et al., 2016). The reduced presence of a family member, close friend, or significant other may cause a lack of social integration, which makes it difficult to share one's feelings, think positively, and interact. This can lead to depression (Ashe & Routray, 2019; Bincy et al., 2021; Khaltar et al., 2017; Manandhar et al., 2019; Rashid & Tahir, 2015; Konda et al., 2018). The studies by Li et al. (2015) and Widiani et al. (2023) discovered the greatest negative association between perceived social support and depressive symptoms among the elderly. Poor support can create a sense of insecurity among community-dwelling older people and might increase their risk of developing depression.

A lack of social interaction with and support from family members and the wider community will result in social isolation and loneliness. In the present study, loneliness was found to be significantly associated with depressive symptoms, with an almost 21-fold increase in the risk of developing the disorder. This finding is similar to the results of Hussein et al. (2021), who discovered that 32.6% of older people living in the community had experienced social loneliness and 39.9% had felt emotional loneliness. This evidence is also supported by Li et al. (2015), who found that loneliness was significantly associated with older individuals' depressive symptoms in their model; this demonstrates that older people who felt loneliness tend to become more depressed. Similar results have come from other countries in Asia (Ashe & Routray, 2019; Simkhada et al., 2018; Song et al., 2019). Furthermore, Shao et al. (2017) discovered that depression was significantly associated among older people who felt loneliness due to had lack of social interaction and had a problem with spousal relationships. Tanjanai et al. (2017) noted that about 48% of the older people who were spending their time at home rather than with their relatives and friends had. Other than that, the odds of depression in the elderly who met friends and relatives were less than 60% compared to the elderly who lived at home alone. This result was similar with the presents study that found that loneliness was significantly associated with depressive symptoms. Therefore, one practical implication is that loneliness should be targeted when treating depression in community-dwelling older people.

Asthma was found to be associated with a nearly fourfold increase in the risk of developing depression. This chronic illness has been found to be significantly related to depressive symptoms in several studies (e.g., Dai et al., 2019; Güzel & Kara, 2020; Park et al., 2016; Yadav et al., 2020). This could be due to asthma's symptoms and the prolonged use of medications that they entail, as well as the dependence on family members for ADL (Rashid & Tahir, 2015). Many scholars have found that impaired ADL is associated with depression in the elderly (Aznan et al., 2019; Kavithai et al.,

2018; Simkhada et al., 2018; Tanjanai et al., 2017). Two other studies (Disu et al., 2019; Shao et al., 2017), discovered that limited ADL were significantly associated with depressive symptoms in older people due to the degenerating processes that lead to physical frailty, chronic illnesses, and disability. The present study found that impaired ADL created a 3.39 times greater risk of having depression compared to being independent. Older people with impaired daily function tend to have negative emotions (Shao et al., 2017) and an inability to leave their homes (Manandhar et al., 2019). A longitudinal study conducted in Japan by Kiyoshige et al. (2019) reported that depressive symptoms were significantly associated with IADL decline in people aged 70 years and above. Similarly, the present study found that older people with impaired IADL status had a 6.09 times greater risk of having depression compared to those who did not have such status. This might be due to symptoms such as decreased energy, fatigue, loss of interest, and poor concentration, which are commonly found in the elderly who have depression (Hamzah et al., 2018). Vanoh et al. (2016) also reported that impaired IADL status was a risk for depressive symptoms and that IADL limitations were due to being burdened with chronic illnesses. Therefore, early screening for depression should be initiated during follow-up treatment in hospitals. The participation of family members is also important to reduce the depressive symptoms of older people who have impaired ADL and increase their quality of life (Puspadewi & Rekawati, 2017).

The strengths of this study include a high response rate, which was adequate to detect the prevalence of the associated factors, a strong methodology, and the use of trained enumerators for data collection. Unfortunately, the cross-sectional nature of the study design makes it impossible to determine causation. Still, the data can be used as an initial benchmark for further intervention studies aimed at improving the prevention of depression among the elderly. Furthermore, there might have been some recall bias because respondents were asked to retrieve events that happened in the past.

Conclusion

The prevalence of depressive symptoms in this study was moderately high compared to the previous studies conducted in Malaysia. Being single, having a chronic disease (asthma), having poor social support, being lonely, and having impaired functional status and instrumental function might contribute to the development of depressive symptoms among older people. Hence, screening for depression is crucial among the elderly as this population had a high risk for undetected depression which may lead to isolation, despair, and possibly suicide if not detected earlier. The data analyzed in this study can be used as a preliminary benchmark to guide the development of prevention programs aimed at reducing depressive symptoms among Malay community-dwelling older people. Understanding the biological, psychological, sociological, and spiritual factors that contribute to depression in older Malays can help nurses make careful decisions about the prevention strategies to be used. Based on the findings of the present study, prevention programs should use several strategies. For example, patients should learn to cope with feelings of loneliness and be encouraged to take part in activities that involve the community, including religious ones (e.g., prayer groups, Bible-focused study groups, and religious education), which have been shown to be effective in supporting patients in transforming their negative thoughts into positive ones. This can reduce the occurrence of depressive symptoms.

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Sleep Quality and Stress Levels Among Nurses: A Single Center Study

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Abstract

The issue of nurses' sleep quality, which has a significant impact on their mental health, has not received enough attention. Nurses' stress and mental health can affect patient care, so poor sleep quality in nurses can lead to stress and patient harm. Thus, this study examines the relationship between sleep quality and stress in nurses at a university hospital in Kuantan, Malaysia. This cross-sectional study used convenience sampling. A total of 101 nurses in the hospital were recruited to complete a series of questionnaires, including the Pittsburgh sleep quality index (PSQI) and the depression anxiety stress scale 21 (DASS21). SPSS version 23.0 was used to analyze the data. Hypothesis testing was conducted with an independent sample t-test. The mean age of the participants was 27.2 ± 4.15 years; 88.1% of the participants were Malay and 98.0% were female. A total of 86.1% nurses reported having poor sleep quality. Most (76.2%) had normal stress levels, 9.9% were mildly stressed, and 5.0% were moderately stressed. According to the findings, 5.0% of nurses had extremely severe stress, and 4.0% had severe stress. Poor sleepers had a higher stress score (t 93.984 = -6.395, p < .001). This study suggests that sleep quality may have an impact on the psychological wellbeing of nurses. Thus, hospital administrations must address this issue for nurses to help them provide high-quality patient care.

Keywords: nurses, psychological wellbeing, sleep quality

Abstrak

Kualitas Tidur dan Tingkat Stres di Kalangan Perawat: Studi Pusat Tunggal. *Masalah kualitas tidur perawat, yang memiliki dampak signifikan pada kesehatan mental mereka, belum mendapatkan cukup perhatian. Stres dan kesehatan mental perawat dapat memengaruhi perawatan pasien, sehingga kualitas tidur yang buruk pada perawat dapat menyebabkan stres dan bahaya bagi pasien. Oleh karena itu, penelitian ini menguji hubungan antara kualitas tidur dan stres pada perawat di sebuah rumah sakit universitas di Kuantan, Malaysia. Studi potong lintang ini menggunakan sampel kenyamanan. Sebanyak 101 perawat di rumah sakit direkrut untuk mengisi serangkaian kuesioner, termasuk Indeks Kualitas Tidur* Pittsburgh *(PSQI) dan Skala Depresi Kecemasan Stres 21 (DASS21). SPSS versi 23.0 digunakan untuk menganalisis data. Pengujian hipotesis dilakukan dengan uji t independen. Usia rerata partisipan adalah 27,2 ± 4,15 tahun; 88,1% dari mereka adalah orang Melayu dan 98,0% perempuan. Sejumlah 86,1% perawat melaporkan memiliki kualitas tidur yang buruk. Sebagian besar (76,2%) memiliki tingkat stres normal, 9,9% mengalami stres ringan, dan 5,0% mengalami stres sedang. Berdasarkan hasil, 5,0% perawat mengalami stres sangat parah, dan 4,0% mengalami stres parah. Orang dengan tidur buruk memiliki skor stres yang lebih tinggi (t 93,984 = -6,395, p < 0,001). Studi ini menyarankan bahwa kualitas tidur dapat berdampak pada kesejahteraan psikologis perawat. Oleh karena itu, administrasi rumah sakit harus mengatasi masalah ini untuk membantu perawat memberikan perawatan pasien berkualitas tinggi.*

Kata Kunci: *kualitas tidur, perawat, psikologis perawat*

Introduction

Nursing professionals must deal with a heavy workload, work–family conflict, irregular schedules, and task complexity in the provision of daily patient care. These challenges may have a negative impact on nurses' sleep quality (Djupedal et al., 2022; Eun & Shin, 2020; Hwang & Yu, 2021). Sleep is essential for every human being to ensure good physical and psychological health. According to Manzoli et al. (2018), sleep can be defined as a "physiological condi-

tion and has two essential patterns: non-rapid eye movement (NREM) sleep and rapid eye movement (REM) sleep, when rapid eye movements, muscular hypotonia, or atonia are present."

For nurses, having good-quality sleep can improve the quality of care given to their patients. Nurses are the hospital organization's backbone supporting the hospital's operations. Their role is vital, as they take care of the patients around the clock. Hence, sleep quality is crucial for nurses so that they can provide optimal patient care.

Nonetheless, the issue of sleep quality among nurses has historically been overlooked. Work-related factors have been found to be associated with sleep disturbances among nurses (Kim-Godwin et al., 2021). Haile et al. (2019) study revealed that 25.6% of nurses suffered from shift work sleep disorder. According to Dong et al. (2020), the prevalence of sleep disturbances among clinical nurses in general hospitals in mainland China is 55%. Furthermore, Roskoden et al. (2017) found that nurses who work in shifts suffer from low sleep quality compared to non-shift nurses. A study conducted in Iran found that 56% of nurses experienced poor quality sleep, and those in the surgery department had the highest rate of poor sleep quality (Bazrafshan et al., 2018). Olawale et al. (2017) found that 48.6% of nurses in Najran, Saudi Arabia, experienced sleep disturbances. A study in educational hospitals in Iran showed that 95.5% of nurses had sleep problems, and in Sarang et al. (2019), 63% of nurses had poor sleep quality. This is supported by Tarhan et al. (2018), who found that 61.9% of nurses had sleep problems. Overall, the evidence indicates that nurses' sleep quality is poor.

Nena et al. (2018) reported that employees in tertiary university hospitals in Greece who worked shift work hours often felt unhappy and in a bad mood compared to those on regular office hours (8 am to 5 pm). Similarly, Zhang et al. (2016) reported that more than 70% of nurses in Shanghai, China, had poor sleep quality, stress, and "rotating shift work-related symptoms." A study conducted among nurses at Cibinong Regional Public Hospital showed that 57% had poor sleep quality (Rizky & Hendra, 2018). Compromised sleep quality may increase the risk of poor psychological wellbeing and decrease quality of life (Musa et al., 2018). In general, the demanding nature of this profession, coupled with long work hours, compassion fatigue, and inadequate support, may take a significant toll on nurses' psychological wellbeing. This was supported by Shi et al. (2020), who stated that nursing is a high-risk occupation with high exposure to stress. A cross-sectional study of 102 nurses in Australia by Maharaj et al. (2018) found that the prevalence of stress was 41.2%. Tran et al. (2019) also reported that 18.5% of nurses in Vietnam had elevated levels of stress. Ghazwin et al. (2016) revealed that 8.5% of nurses in Iran displayed mild to severe stress levels, and a study in Egypt and Saudi Arabia showed that the prevalence of stress among nurses was 55.9%, ranging from mild to severe (Arafa et al., 2021). Pérez-Fuentes et al. (2019) found that nurses with short sleep durations were likely to have increased levels of stress. In brief, nurses are at a high risk of experiencing poor sleep quality and stress due to the demanding nature of their job, which often involves long shifts, high work-loads, and exposure to critical situations.

As a result of stress, nurses may be unable to deliver good patient care. According to Tran et al. (2019), workplace stress can result in accidents, decreased productivity, and poor judgment. There are numerous studies on psychological wellbeing in Malaysia (Chan et al., 2021; Ibrahim et al., 2021; Samsudin et al., 2021), but a relative lack of studies specifically on nurses. The lack of information regarding the possible relationship between sleep quality and stress levels among nurses in Malaysia may impede the development of effective management strategies for improving the quality of care provided to patients as a result of these factors. This study aimed to determine the sleep quality and stress levels of nurses and the rela-

tionship between them.

Methods

This study was conducted at a public state university hospital in the east coast region of Peninsular Malaysia. A total of 101 male and female nurses participated in this study and were recruited using a convenience sampling method. The inclusion criteria of the participants included registered nurses of any gender who were currently working in the hospital. The exclusion criteria were those with a medical history of mental illness and those currently on prescribed sleeping medication. Invitations to participate in the online survey were sent to all registered nurses through email and social media. Prior informed consent was obtained, and the participants were informed that their participation was strictly voluntary.

To evaluate the overall quality of sleep, the Pittsburgh Sleep Quality Index (PSQI) was utilized. It is a self-reported assessment consisting of 19 items that measure subjective sleep during the past month. The items are rated on a 4-point Likert scale, from 0 (not during the past month) to 3 (three or more times a week). The PSQI comprises seven components: duration of sleep, habitual sleep efficiency, sleep onset latency, sleep disturbance, use of sleep medication, and daytime dysfunction. The scores of these seven components are summed up to obtain a single global PSQI score, which ranges from 0 to 21. To classify sleep quality as "Good" (PSQI < 5) or "Poor" (PSQI ≥ 5), cut-off scores were used (Kim-Godwin et al., 2021).

The nurses' stress levels were determined using the depression anxiety stress scale 21 (DASS-21) questionnaire. Descriptive statistics were calculated using percentages and means. Independent sample t-tests were used to determine the association between sleep quality level and nurses' stress scores. A p-value less than 0.05 (two-sided) was defined as statistically significant. The Statistical Package for the Social Sciences (SPSS) version 26 software (IBM SPSS Inc., Chicago, IL, USA) was used. Ethical approval from the Institutional Review Board and the Clinical Research Center of the hospital was obtained prior to data collection.

Results

This study included 101 nurses from a university hospital in Kuantan, Malaysia. The participants' mean (standard deviation [SD]) age was 27.16 years (4.15). Most participants (88.1%) were female and of Malay extract (98.0%). Of the participants, 49.5% were single, 96% had a diploma, and 4% had obtained a bachelor's degree. Furthermore, 14.9% of the participants had a post basic certificate (Table 1).

Table 1. Sociodemographic Background of the Nurses

Variables		Frequency (%)	Mean (SD)
Age (years)			27.16 (4.15)
Gender	Male	12 (11.9)	
	Female	89 (88.1)	
Race	Malay	99 (98.0)	
	Others	2 (2.0)	
Marital status	Single	50 (49.5)	
	Married	49 (48.5)	
	Divorce	2 (2.0)	
Family history of mental illness	Yes	1 (1.0)	
	No	100 (99.0)	
Highest educational level	Diploma	97 (96.0)	
	Degree	4 (4.0)	
Post basic certificate	Yes	15 (14.9)	
	No	86 (85.1)	

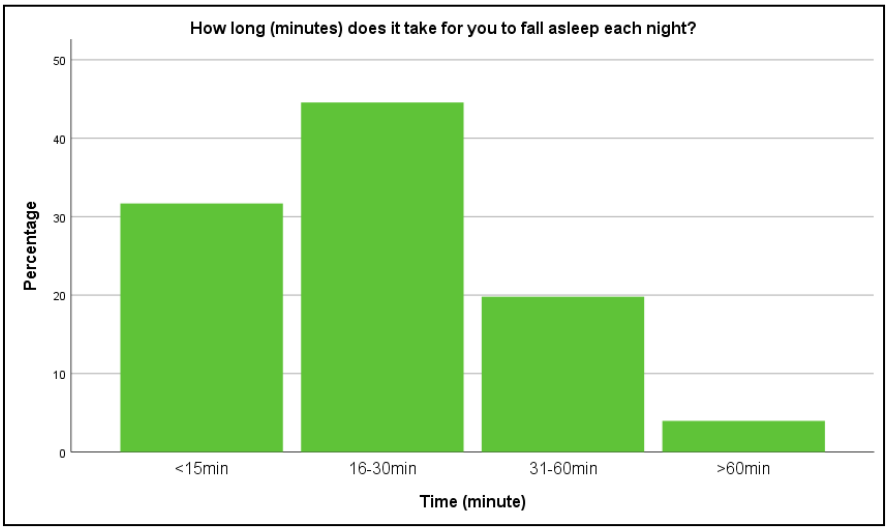

Figure 1. The Estimated Duration Between Going to Bed and Sleeping

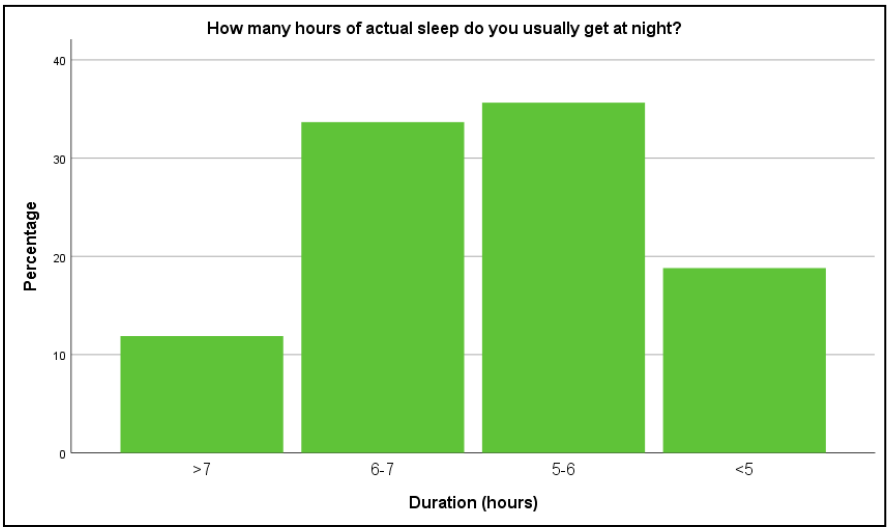

Figure 2. The Estimated Duration of Sleep (in Hours) of the Nurses (n = 101)

Figure 1 shows the estimated duration between going to bed and sleeping. The findings showed that most participants fell asleep after around 16 to 30 minutes of actually going to bed. Figure 2 shows the estimated duration of sleep (in hours) of the nurses (n = 101). The data shows that most participants slept 5 to 7 hours at night.

Table 2 describes the sleep quality among the nurses (n = 101). The findings revealed that most of the nurses felt that they had had relatively good sleep quality in the past month. The majority had experienced trouble sleeping once or twice a week due to the inability to fall asleep within 30 minutes of going to bed (38.6%) or waking up in the middle of the night or early in the morning (32.7%). Most of the nurses rarely experienced (less than once a week) trouble sleeping due to an urgent need to go to the toilet (31.7%) and feeling very hot (46.5%). The majority did not experience any trouble sleeping due to being unable to breathe comfortably (77.2%), feeling very cold (32.7%), coughing, or snoring loudly (62.4%), having nightmares

(57.4%), or having pain (79.2%). Although the nurses rated their sleep as fairly good, according to the PSQI, the majority of the nurses (86.1%) were suffering from poor sleep quality (Table 3).

Figure 3 shows the stress level distribution among nurses (n = 101). The findings demonstrate that most nurses (76.2%) had normal stress levels; 9.9% had mild stress and 5.0% had moderate stress. The findings also revealed that approximately 5.0% of the nurses experienced extremely severe stress, and 4.0% had severe stress.

Table 4 describes the association between sleep quality and stress scores among nurses. The findings showed that the nurses with poor sleep quality had significantly higher stress scores than those with good sleep, *t* (93.984) = -6.395,

Table 2. Sleep Quality of the Nurses (n = 101)

Variables	Frequency	Percentage
In the past month, how have you rated the overall quality of sleep?		
Very good	11	10.9
Fairly good	73	72.3
Fairly bad	17	16.8
In the past month, how often have you had trouble sleeping because you [cannot fall asleep within 30 minutes]		
Not during the past month	13	12.9
Less than once a week	26	25.7
Once or twice a week	39	38.6
Three or more times a week	23	22.8
In the past month, how often have you had trouble sleeping because you [woke up in the middle of the night or early in the morning]		
Not during the past month	7	6.9
Less than once a week	33	32.7
Once or twice a week	33	32.7
Three or more times a week	28	27.7
In the past month, how often have you had trouble sleeping because you [need to get up to go to the toilet]		
Not during the past month	24	23.8
Less than once a week	32	31.7
Once or twice a week	31	30.7
Three or more times a week	14	13.9
In the past month, how often have you had trouble sleeping because you [cannot breathe comfortably]		
Not during the past month	78	77.2
Less than once a week	19	18.8
Once or twice a week	4	4.0
In the past month, how often have you had trouble sleeping because you [cough or snore loudly]		
Not during the past month	63	62.4
Less than once a week	17	16.8
Once or twice a week	19	18.8
Three or more times a week	2	2.0
In the past month, how often have you had trouble sleeping because you [feel very cold]		
Not during the past month	33	32.7
Less than once a week	32	31.7

Table 2. Sleep Quality of the Nurses (n = 101)

Variables	Frequency	Percentage
Once or twice a week	27	26.7
Three or more times a week	9	8.9
In the past month, how often have you had trouble sleeping because you [feel very hot]		
Not during the past month	46	45.5
Less than once a week	47	46.5
Once or twice a week	7	6.9
Three or more times a week	1	1.0
In the past month, how often have you had trouble sleeping because you [have nightmares]		
Not during the past month	58	57.4
Less than once a week	28	27.7
Once or twice a week	11	10.9
In the past month, how often have you had trouble sleeping because you [are in pain]		
Not during the past month	80	79.2
Less than once a week	11	10.9
Once or twice a week	7	6.9
Three or more times a week	3	3.0
In the past month, how often have you taken medication (prescription/over-the-counter medication) to help you sleep?		
Not during the past month	97	96.0
Less than once a week	3	3.0
Once or twice a week	1	1.0

Table 3. Distribution of Sleep Quality Based on the PSQI Score Among Nurses

Variables	Frequency (%)
PSQI score: <5 good sleep quality	14 (13.9)
PSQI score: ≥5 poor sleep quality	87 (86.1)

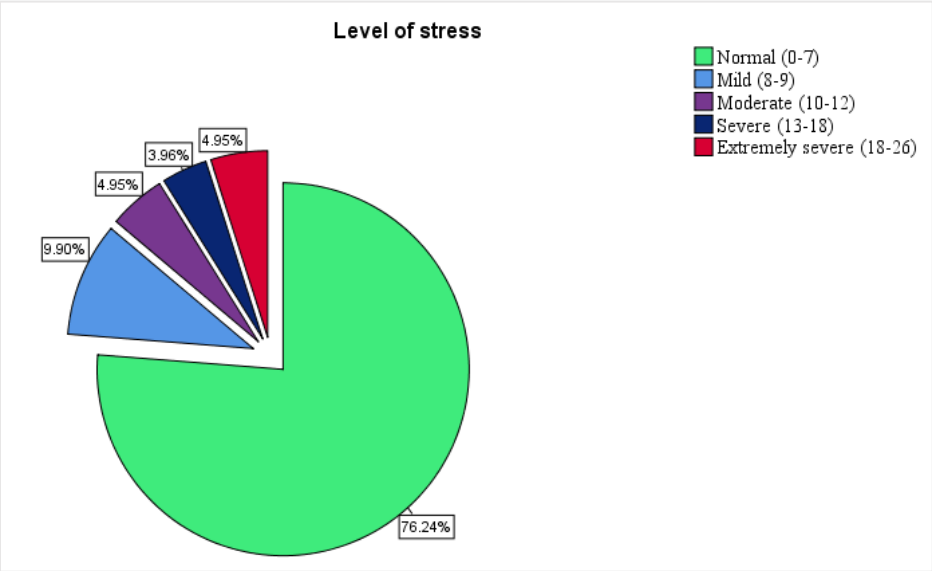

Figure 3. Level of Stress Among Nurses (n = 101)

Table 4. Association Between Sleep Quality and Stress Among Nurses (n = 101)

Sleep Quality (score)	N	Stress (score)		Independent Sample t-test			
		Mean	SD	t	df	p	Mean Difference
Good sleep quality (0–4)	14	0.57	1.158	-	93.984	<.001	-4.325
Poor sleep quality (≥5)	87	4.90	5.609	6.395			

($p < .001$). The average stress score for nurses with good sleep quality was 4.325 lower than the average stress score for nurses with poor sleep quality. Hence, we were able to accept the hypothesis that sleep quality was significantly associated with stress levels among nurses at a university hospital in Kuantan, Malaysia.

Discussion

Sleep quality is vital to human beings, as sleep is when we rest our bodies. According to Chatterjee and Saha (2018), good sleep quality means that an individual feels energetic and has enough sleep without any disturbances before waking up to resume daily living activities. The nature of the nursing profession, which includes numerous demands to meet patients' needs, working in shifts, and a lack of time, can seriously impact their psychological health (Maharaj et al., 2018). Chatterjee and Saha (2018) found that among nurses who had poor sleep quality, this was related to sleep duration and sleep latency. The COVID-19 pandemic may have played a role in affecting sleep duration among nurses. Djupedal et al. (2022) reported that the work scheduling among nurses in Norway during the pandemic was associated with increased reports of worse sleep quality (OR = 2.68, $p < .001$) and reduced sleep duration (OR = 4.56, $p < .001$). A similar study conducted a-mong Norwegian nurses revealed that 11.9% reported shorter sleep durations during the COVID-19 pandemic than before. There was also a significant increase in the proportion of nurses who reported sleeping fewer than six hours per night, from 11.0% before to 15.9% after the pandemic.

The findings of this study imply that sleep quality is significantly associated with elevated stress levels among nurses. In contrast, one study conducted among nurses in Kolkata showed no significant correlation between psychological health and sleep quality, possibly due to cultural or socioeconomic differences (Chatterjee & Saha, 2018). Nonetheless, various pieces of evidence support the findings that sleep quality is associated with the psychological wellbeing of nurses. A study by Tarhan et al. (2018) found a weak positive correlation between sleep quality and depression among nurses and a moderate positive correlation between sleep quality and anxiety. Similarly, a study among Hong Kong nurses found a significant correlation between poor sleep quality and depression (Cheung & Yip, 2016). A study in Tokyo also found that poor sleep quality, which included sleep satisfaction, efficiency, and duration, was significantly associated with depressive mood. Depression and anxiety are highly correlated with stress (Maharaj et al., 2018). In brief, the findings of this study support the current evidence that sleep quality is highly associated with psychological wellbeing among nurses.

There are a few plausible causes for the relationship between sleep quality and mental health in nurses. Sleep deprivation can be caused by a variety of factors, whether work-related or perso-nal, and it can aggravate symptoms of stress and burnout in nurses (Shah et al., 2021). As a re-sult, nurses may experience emotional exhaust-ion, resulting in diminished job performance and satisfaction. Chronic sleep deprivation may cause a decline in mental wellbeing and lead to symptoms such as anxiety and depression. The emotional resilience of nurses may also play a role in the relationship between sleep quality and mental wellbeing. The ability of a person to adjust in the face of hardship and persistent se-rious life stresses is known as resilience (Kantor et al., 2023).

According to Eun and Shin (2020), daytime fixed nurses were shown to be more re-silient than shift nurses. This might be due to the consistency of their work schedules, which allows for consistent sleep patterns and improved stress management strategies. Labrague (2021) also found that resilience reduced the effects of COVID-19 pandemic fatigue on clinical nurses' mental health and sleep quality. By recognizing the issues behind sleep quality and understanding the importance of emotional resilience among nurses, healthcare organizations may take proactive actions to assist their staff, thereby increasing the overall quality of patient care and nurses' mental wellbeing.

Various studies have been conducted to acknowledge the factors associated with sleep quality and mental health among nurses worldwide. Accordingly, interventions and innovations have been carried out to address this issue. According to a systematic review, the prevalence rate of low sleep quality among nurses during the COVID-19 pandemic was between 18% and 38%, while stress and anxiety were among the factors associated with low sleep quality (Sheykhangafshe et al., 2021). In another systematic review among healthcare workers during the pandemic, the results revealed that the prevalence of insomnia, a type of sleep disorder, was 38%; it was higher among women (29%) than men (24%), and the main factor was working in a high-risk environment (Serrano-Ripoll et al., 2021). Qiu et al. (2020) also found that being a female and a nurse increased the risk of sleep disturbances among Chinese healthcare professionals. In a study by Kang et al. (2020), several therapies, such as aroma-inhalation therapy, shift rotation modifications, physical exercise, and cognitive-behavioral therapy, were evaluated, with aroma-inhalation therapy demonstrating significant improvements in sleep quality for shift work nurses.

This study had two limitations. First, due to the COVID-19 pandemic in Malaysia, the survey was conducted via an online survey, which may have limited the participants' ability to ask for additional clarification. To address this, we included contact information on the online forms to communicate better with the participants. Second, this study used a convenience sample, which raises the possibility of sampling bias. Therefore, applying the inclusion and exclusion criteria in convenience sampling serves as a strategic measure to mitigate potential limitations, enhancing the reliability and validity of the study findings.

Conclusion

The relationship between stress levels and sleep quality among nurses cannot be overlooked because both aspects can be harmful to the nurses' health and the quality of care they provide. To achieve optimal psychological wellbeing, the importance of nurses' sleep quality should not be underestimated. Hospital administrators should consider designing psychological awareness programs and intervention programs to improve nurses' sleep quality and psychological wellbeing and should avoid understaffing. More research is needed to identify effective interventions for managing stress and sleep disturbances to address these issues for nurses. Addressing the issue of sleep quality and stress among nurses is critical to their wellbeing, job satisfaction, and the provision of high-quality patient care.

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Smoking Among Adolescents and Associated Factors in Rural Areas

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Abstract

Smoking among adolescents is the major health-related issues in Malaysia. However, information concerning recent smoking rates and how they correlate among adolescents in rural areas is still limited. This study aimed to determine the percentage of adolescent smokers among high school students, examine their level of nicotine dependence, and study the association between sociodemographic data and smoking status. A cross-sectional study was conducted at one of the high schools located in the rural area of Bandar Tun Abdul Razak, Pahang, Malaysia. A convenience sampling method was used to select the participants, as only Form 2 students were available during the data collection. In total, 113 respondents were recruited for the study. The data, which were collected using self-administered questionnaires were analyzed using chi-square analysis and Fisher's exact test analysis. The results showed that the prevalence of adolescent smokers among high school students was quite high (25.7%). Among the adolescent smokers, 65.5% had low nicotine dependence, and 34.5% had moderate nicotine dependence. Moreover, 21.4% of them admitted that they had tried other substances or drugs in addition to cigarettes. Peer pressure was the major factor in smoking (69.0%), followed by curiosity (27.6%), and then smoking family members' influence, stress or tension, and others (3.4% each). The only significant association ($p < 0.001$) was between gender and smoking status. These findings showed that the proportion of smokers among adolescents is increasing over the years; thus, effective strategies, such as peer advocacy of smoking cessation, may be needed among this population.

Keywords: adolescent, peer influence, rural areas, smoking, students

Abstrak

Merokok di Kalangan Remaja dan Faktor-faktor yang Memengaruhinya di Daerah Pedesaan. *Merokok di kalangan remaja adalah masalah kesehatan utama di Malaysia. Namun, informasi mengenai tingkat perokok saat ini dan korelasinya di kalangan remaja di daerah pedesaan masih terbatas. Penelitian ini bertujuan untuk mengetahui persentase remaja perokok di kalangan siswa sekolah menengah atas (SMA), mengetahui tingkat ketergantungan nikotin, dan mempelajari hubungan antara data sosiodemografi dengan status merokok. Sebuah studi* cross-sectional *dilakukan di salah satu SMA yang terletak di daerah pedesaan Bandar Tun Abdul Razak, Pahang, Malaysia. Metode* convenience sampling *digunakan untuk memilih peserta, hanya siswa* Form 2 *yang bersedia selama pengumpulan data. Sebanyak 113 responden direkrut untuk penelitian ini. Data yang dikumpulkan menggunakan kuesioner yang dikelola secara mandiri, dan dianalisis menggunakan analisis* Chi-square *dan analisis* Fisher's exact test. *Hasil penelitian menunjukkan bahwa prevalensi perokok remaja pada siswa SMA cukup tinggi (25,7%). Di antara remaja perokok, 65,5% memiliki ketergantungan nikotin tingkat rendah, dan 34,5% memiliki ketergantungan nikotin tingkat sedang. Terlebih, 21,4% di antaranya mengaku pernah mencoba zat atau obat lain selain rokok. Tekanan dari orang terdekat (teman) merupakan faktor utama dalam merokok (69,0%), diikuti oleh rasa ingin tahu (27,6%), dan pengaruh anggota keluarga yang merokok, stres atau ketegangan, dan lain-lain (masing-masing 3,4%). Satu-satunya hubungan yang signifikan ($p < 0,001$) adalah antara jenis kelamin dan status merokok. Temuan ini menunjukkan bahwa proporsi perokok di kalangan remaja meningkat dari tahun ke tahun; oleh karena itu, strategi yang efektif, seperti advokasi sejawat untuk berhenti merokok, diperlukan di kalangan populasi ini.*

Kata Kunci: *daerah pedesaan, merokok, pengaruh teman sebaya, remaja, siswa*

Introduction

Smoking among adolescents ranks among the major health-related issues in Malaysia. Multiple studies have been conducted regarding smoking among adolescents. Based on many sources, rural areas have higher smoking rates compared to urban areas. The National Health and Morbidity Survey: Adolescent Health Survey in 2017 recorded that the smoking prevalence was higher in rural areas (18.9%) compared to urban localities (13.6%) (Institute for Public Health Malaysia, 2017).

Several studies have stated that people generally begin smoking in the adolescence period when teenagers' brains are still developing (Abiola et al., 2016; Al-Naggar & Alshaikhli, 2018; Grapatsas et al., 2017; Patiño-Masó et al., 2019). In Malaysia, the prevalence of adolescents who smoke was 13.8% in 2019, which was higher than 11.5% in 2012, and most of these smokers were Malay, Muslim, and male (Ling et al., 2019; Institute for Public Health Malaysia, 2017). This percentage is quite alarming, as smoking might induce them to try other harmful substances, such as marijuana and other drugs, and they may be prone to engage in fighting and other risky behaviors in the future (World Health Organization [WHO], 2020).

In the United States, 83% of smokers began smoking before the age of 18 (Grapatsas et al., 2017). Furthermore, a study in a poor urban setting in Malaysia by Al-Naggar and Alshaikhli (2018) found that the mean age to start smoking was 11 years old. According to Abiola et al. (2016) and Patiño-Masó et al. (2019), the mean age for smoking initiation was 12 years old. According to these data, adolescents are exposed to smoking at a young age, which is a worrisome trend, as adolescents are more likely to continue smoking into adulthood once they initiate their smoking activity. This is due to nicotine dependence, which makes smoking cessation more difficult.

Other than age, gender, and race, there are many other correlates of smoking among adolescents. Cremers et al. (2014) stated that smoking is influenced by socioeconomic status (SES), as there is a higher prevalence of smoking in low SES groups, who are mostly predisposed to smoking due to the smoking habits of their father, mother, or other family members. This is complemented by the study by Lim et al. (2018), which found that individuals with higher incomes were less likely to be current smokers.

In addition, curiosity triggers high school students to take up smoking (Al-Naggar & Alshaikhli, 2018; Anjum et al., 2016). This is supported by the study of Abiola et al. (2016), which found that the adolescence period is the stage during which teenagers form their own identities and attempt to belong to a particular stratified social group. Moreover, peer influence is a factor contributing to smoking initiation (Abiola et al., 2016; Robalino & Macy, 2018). Adolescents' initiation of smoking is also caused by environmental factors, such as exposure to parents who smoke (Al-Naggar & Alshaikhli, 2018; Bobo et al., 2018; Grapatsas et al., 2017). Since parents are the closest people to adolescents from childhood onward, parents are undeniably among the most influential persons on whom teenagers model their behavior. As mentioned by Al-Zalabani (2015), family contextual factors, such as family structure, parental support, and parental supervision, also affect smoking behavior.

To summarize, more studies need to be conducted to determine the prevalence, factors, and sources of exposure to smoking among adolescents so that further prevention and treatment measures can be implemented. Early detection of adolescent smokers or adolescents who have the tendency to smoke can help us curb this emerging issue. Smoking rates among those who live in rural areas are more prominent compared to those in urban areas. Therefore, secondary school students from the rural area of Pahang, Malaysia, were chosen to participate in this study. This study adds to the pool of data regarding smoking among adolescents and

smoking in rural areas. The school examined in this study was chosen due to the school's concern about this issue and its need to obtain data regarding the prevalence of smoking at the school, as no study had yet been conducted at this school. Thus, this is the first time that a study regarding smoking was conducted in this setting. The study is also in line with the Sustainable Development Goal on "Good Health & Well-Being."

Methods

A cross-sectional study was conducted at one of the high schools located in a rural area: the Federal Land Development Authority (FELDA) settlement in Pahang, Malaysia. The FELDA is a Malaysian government agency that was founded to manage the resettlement of the rural poor in newly developed areas and to organize smallholder farms growing cash crops. A convenience sampling method was used to select the participants, as only Form 2 students were available during the data collection. Thus, 113 respondents were recruited for the study, with a response rate of 96.6%. The instrument used in this study was a self-administered questionnaire adapted from the *Pengendalian Murid Sekolah Merokok* Assessment Form (PMSM 1-2016), which is found in the PMSM Guidelines (Unit Kawalan Tembakau & Sekretariat FCTC, 2017). The questionnaires consisted of three parts: Part A (sociodemographic data), Part B (smoking behavior), and Part C (Fagerstrom Test for Nicotine Dependence form). Part A was answered by all the respondents, while Parts B and C were answered only by the respondents who smoked. This study obtained approval from the Kulliyyah of Nursing Postgraduate Research Centre (KNPGRC), the International Islamic University Malaysia Research Ethics Committee (IIUM IREC), the Ministry of Education (MOE), and the school. Informed consent was obtained from the respondents prior to their involvement in this study. The data collection was carried out during a workshop held at the school. Entitled Tobacco Free Together, the workshop was conducted by final Year 4 students in the Discovery of Specialization in Nursing: Smoking Cessation group. Students who met the inclusion criteria (smokers and non-smokers, Forms 3 and 4, and parental consent) were approached by the researcher and invited to voluntarily answer the self-administered questionnaire. Attached to the questionnaire was a consent form, which contained an explanation of the purpose and procedures of the study, the confidentiality mechanisms, and the right to withdraw, as well as the researcher's contact information. The analysis was conducted using Chi-square analysis and Fisher's exact test analysis.

Results

The study was conducted in 2020 among Form 3 and Form 4 students. Table 1 shows the descriptive statistics for the sociodemographic data among the students (N = 113).

Among the respondents, 46.9% were 15 years old, while 53.1% were 16 years old. There were more females compared to males (61.1% and 38.9%, respectively). As for race, a majority of the respondents were Malay (88.5%), and the rest were non-Malay, including Chinese (1.8%) and Indigenous (9.7%). The mean daily pocket money that they were given was 4.31 RM (± 1.12 RM). Approximately 80.5% of the respondents lived with both parents, 10.6% lived with one parent, and 8.8% lived with others. In addition, 39.8% of the respondents recorded having smoking family members, while 59.3% did not.

Among the 113 respondents, it was identified that there were 29 (25.7%) students who smoked and 84 (74.3%) who did not (Table 2). Among the 29 students who smoked, the mean Fagerstrom test score obtained was 2.480 (± 1.883). Based on the Fagerstrom test score categories, 19 (65.5%) had low nicotine dependence, and 10 (34.5%) had moderate nicotine dependence. However, there were no respondents who had high nicotine dependence (Table 3).

Table 1. Descriptive Statistics of Sociodemographic Data

Characteristics	Mean (SD)	Freq (%)
Age	15.53 (0.501)	
15		53 (46.9)
16		60 (53.1)
Gender		
Male		44 (38.9)
Female		69 (61.1)
Race		
Malay		100 (88.5)
Chinese		2 (1.8)
Indian		0 (0)
Indigenous		11 (9.7)
Daily pocket money	4.31 (1.12)	
Less than 5 RM		42 (37.2)
5 RM or above		67 (59.3)
Living with whom		
Parents		91 (80.5)
Father or mother		12 (10.6)
Others		10 (8.8)
Smoking family members		
Yes		45 (39.8)
No		67 (59.3)

Table 2. Percentage of Adolescent Smokers Among Students

Characteristics	Mean (SD)	Freq (%)
Smoking status		
Yes		29 (25.7)
No		84 (74.3)

Table 3. Level of Nicotine Dependence Among Students Who Smoke

Characteristics (n = 29)	Mean (SD)	Freq (%)
Fagerstrom test score	2.480 (1.883)	
Fagerstrom test score categories		
Low nicotine dependence (0–3)		19 (65.5)
Moderate nicotine dependence (4–5)		10 (34.5)
High nicotine dependence (6–10)		0 (0)

Table 4 provides a summary of the associations between the sociodemographic data and smoking status among the students. Based on the analysis, it was found that the only significant association was between gender and smoking status ($p < 0.001$). It was noted that a higher frequency of smokers were males compared to females (61.4% and 2.9%, respectively). Meanwhile, there was no significant association between smoking status and age, race, daily pocket money, living with whom, and family members smoking.

Based on the data obtained (Table 5), the mean age for initiating smoking among the respondents who smoked was 13 years old (± 2 years old). Most of the respondents who smoked obtained cigarettes through friends (48.3%) and usually smoked with friends (78.6%) and at gatherings (58.6%). The places where they

smoked also varied, but home (34.5%) and other places (34.5%), such as gathering places with friends, were the most popular. The major factor influencing smoking was peer pressure (69.0%), followed by curiosity (27.6%), and then smoking family members' influence, stress or tension, and others (3.4% each).

Among the respondents who smoked, 96.3% stated that they had tried to stop smoking, with a mean of 3 (± 0.524) attempts. Furthermore, 82.1% expressed that they wanted to quit smoking, and 42.9% needed help to quit. In addition, 21.4% admitted that they had tried other substances or drugs in addition to cigarettes.

Table 4. Summary of the Association Between Sociodemographic Data and Smoking Status Among Students

Variable	Smoking status		x^2	p
	Smoker Freq (%)	Non-smoker Freq (%)		
Age			0.067	0.795
15	13 (24.5)	40 (75.5)		
16	16 26.7)	44 (73.3)		
Gender			48.139	<0.001*
Male	27 (61.4)	17 (38.6)		
Female	2 (2.9)	67 (97.1)		
Race			0.814	0.509
Malay	27 (27)	73 (73)		
Non-Malay	2 (15.4)	11 (84.6)		
Daily pocket money			1.584	0.208
Less than 5 RM	14 (33.3)	28 (66.7)		
5 RM or above	15 (22.4)	52 (77.6)		
Living with whom			0.802	0.371
Both parents	25 (27.5)	66 (72.5)		
Single parent or others	4 (18.2)	18 (81.8)		
Family members smoking			2.170	0.141
Yes	15 (33.3)	30 (66.7)		
No	14 (20.9)	53 (79.1)		

*Chi-square test, $p < 0.05$

Table 5. Descriptive Statistics on Smoking Profiles of Students Who Smoke

Characteristics (n = 29)	Mean (SD)	Freq (%)
Age of smoking initiation	13.45 (2.384)	
Sources of obtaining cigarettes:		
Buy a pack		12 (41.4)
Buy per stick		5 (17.2)
Through friends		14 (48.3)
Through family members		1 (3.4)
Others		0 (0)
Factors that trigger smoking:		
Peer pressure		20 (69)
Family influence (smoker)		1 (3.4)
Stress/tension		1 (3.4)
Curiosity		8 (27.6)
Others		1 (3.4)
Places to smoke:		
At home		10 (34.5)
At school		0 (0)
At shopping complex		1 (3.4)

Characteristics (n = 29)	Mean (SD)	Freq (%)
At food stall		7 (24.1)
At bus stop		2 (6.9)
Others		10 (34.5)
When they usually smoke:		
When experiencing stress		2 (6.9)
When bored / no activity		4 (13.8)
After eating		8 (27.6)
When gathering with friends		17 (58.6)
When studying		3 (10.3)
Others		1 (3.4)
With whom they usually smoke:		
Alone		6 (21.4)
With family members		0 (0)
With friends		22 (78.6)
Others		3 (10.7)
Attempted to quit smoking		
Yes		26 (96.3)
No		1 (3.7)
Number of attempts at quitting smoking	3 (0.524)	
Intention to quit smoking		
Yes		23 (82.1)
No		5 (17.9)
Need help to quit smoking		
Yes		12 (42.9)
No		16 (57.1)
Tried any other substances/drugs		
Yes		6 (21.4)
No		22 (78.6)

Discussion

The smoking prevalence has continued to increase in adolescents over the world but more to urban area and limited studies on the rural area. A study done in the rural area at Yogyakarta Indonesia, revealed the prevalence rate of adolescents smoking were 22.8% (Ekawati et al., 2024). The prevalence rate is nearly similar with the current study as this was the first study that has been conducted in a school located in the FELDA settlement area of Bandar Tun Abdul Razak, Pahang, Malaysia, in a rural area. Based on the descriptive findings of the study, it was found that 25.7% of the respondents were smokers, which is a high prevalence of smoking. However, this percentage is lower than the prevalence of smoking among lower secondary school male students in Kota Tinggi district, Johor, which was 35.5% (Lim et al., 2015). This may be due to the different sample size, but this number of respondents who smoked cannot be ignored. In line with this finding, Lim et al. (2015) recorded that lower secondary students in schools located in FELDA settlement areas had twice the percentage of smoking prevalence (42.9%) compared to those in both rural and town schools (20.3%). The setting of this study was a school located in a rural area that was developed into a FELDA settlement area. Therefore, the students at the school were at higher risk of being influenced to smoke.

According to this study, the mean age to start smoking among the study respondents was 13 years old (± 2 years old). This is consistent with the findings of a national survey conducted in 2016 among Malaysian adolescents aged 10–19 years old (Tobacco and Electronic Cigarette Survey among Malaysian Adolescents [TECMA]), in which 78.7% of current smokers had their first cigarette before the age of 14 years (Tobacco Control Unit & FCTC Secretariat, 2016). This study also showed that the prevalence of

adolescent smokers among students was higher among males and Malays, which is similar to the findings of the National Health and Morbidity Survey: Adolescent Health Survey 2017, in which Malay males were found to dominate the smoking prevalence among adolescents in Malaysia (Institute for Public Health Malaysia, 2017). Several other studies also mentioned similar findings in terms of gender, including Lim et al. (2017), 27.9% males vs. 2.4% females; Al-Naggar and Alshaikhli (2018), 60% males vs. 40% females; and Jeganathan et al. (2013), 87.3% males vs. 12.7% females. In terms of Malays being the majority of smokers compared to other races, these data are supported by records from the National Health and Morbidity Survey 2015 (Institute for Public Health, 2015), in which Malays (24.6%) outnumbered Indians (19.7%) and Chinese (15.4%). These findings are also supported by a study in Shah Alam, Selangor, with 79.7% Malay smokers and 20.3% Indian smokers (Al-Naggar & Alshaikhli, 2018). They also correspond with a study conducted in Kinta, Perak, which found that Malays (60.0%) comprised the highest prevalence of smokers compared to Chinese (23.0%), Indians (10.8%), and others (6.3%) (Jeganathan et al., 2013). However, in this study, there was no significant association between race and smoking status among the students. This might be due to the non-normally distributed sample, which could have affected the findings.

Contrary to the findings of Cremers et al. (2014) and Lim et al. (2018), this study found no significant association between daily pocket money obtained and smoking status. Cremers et al. (2014) found that smoking rates were higher in low SES groups, while Lim et al. (2018) showed that those with higher incomes were less likely to be current smokers. This may be because those people with low SES have lower knowledge levels regarding smoking compared to those with high SES.

In terms of the living with whom variable, there was no significant association between this and smoking status. In other studies, no evidence has been found connecting adolescents who live with parents or others to smoking. This suggests that it does not matter with whom adolescents live as long as they are properly supervised to ensure that they do not become involved in this type of negative and harmful behavior.

There was also no significant association between family members' smoking behavior and smoking status. However, Al-Naggar and Alshaikhli (2018), Bobo et al. (2018), Grapatsas et al. (2017), and Kleinjan et al. (2015) found that environmental factors, such as exposure to parents smoking, influenced the initiation of smoking among adolescents. In this study, it is understandable that the family members' influence was not so significant, as this study emphasized that the main factor that influenced the students to smoke was peer influence, followed by curiosity and other factors. This finding is supported by a study of Abiola et al. (2016), which mentioned that peer influence was the most significant reason to begin smoking (21.9%). However, Al-Naggar and Alshaikhli (2018) and Anjum et al. (2016) reported different results, finding curiosity to be the main factor for adolescents to take up smoking.

Regarding the level of nicotine dependence, this can be classified into three categories: low nicotine dependence, moderate nicotine dependence, and high nicotine dependence. In this study, the percentage of adolescent smokers who had developed low or moderate nicotine dependence was high compared with the data from a national survey TECMA conducted in 2016 among Malaysian adolescents aged 10–19 years old (Tobacco Control Unit & FCTC Secretariat, 2016). That survey recorded that 28.5% of current adolescent smokers had already developed low nicotine dependence. The biggest concern in this study is that there are adolescents who have already developed moderate nicotine dependence. As nicotine dependence worsens over time, the fear is that the adolescent respondents will develop higher levels of nicotine dependence during adulthood.

In addition, this study found that most of the respondents who smoked obtained cigarettes through friends, and they usually smoked with friends during social gatherings. The places to smoke also varied, but the home and other locations, such as social gathering places with friends, were the most popular. This is a predisposing factor explaining why peer pressure was the most frequent reason for adolescents to smoke, as they spent a lot of their time with their friends compared to with others.

It was found that the majority of adolescent smokers had attempted to stop smoking and stated that they wanted to quit smoking. About half of them also mentioned that they needed help to stop smoking. According to a national survey conducted in 2016, almost 80% of former smokers quit without any professional intervention or assistance. Quitting without any professional assistance has the lowest success rate of the various approaches to becoming smoke free (The Royal Australian College of General Practitioners, 2021). That is why many smokers need seven or eight attempts before finally succeeding (Tobacco Control Unit & FCTC Secretariat, 2016).

Among the respondents in this study, a similar pattern was found, as the mean number of attempts to quit smoking was three. This showed that they had the desire to quit smoking and had already tried several times, but they had failed in becoming smoke free due to their nicotine addiction. It could be worse, as some of the smokers had also tried other substances or drugs that could do more damage to them. This is why proper assistance and aid need to be offered to help them liberate themselves from nicotine dependence and thus smoking.

A limitation of this study is that the findings could not be generalized, as this study contained a small sample size and a limited number of respondents, focusing only on Form 3 and Form 4 students. This was due to a specific school request, as the Form 5 students needed to be excluded from the study because of upcoming national examinations. As for the Form 1 and Form 2 students, they were partaking in evening school sessions and thus did not participate in the program held.

Conclusion

This cross-sectional study has achieved its objectives, which were to determine the percentage of adolescent smokers among high school students, examine their level of nicotine dependence, and study the association between the sociodemographic data and smoking status. The study showed that the prevalence of adolescent smokers among students located in the FELDA area was quite high, with males reporting a significantly higher prevalence of smoking than females. The fact that there were also females who smoked is crucial, as females may be future mothers. Therefore, a concern is that if females do not cease smoking and become pregnant in the future, their habit will harm their baby during pregnancy. Furthermore, there were also adolescent smokers who had already achieved a moderate nicotine dependence. Most of them had tried to quit smoking and stated that they wanted to quit smoking. Moreover, about half of them needed help to quit. Some of them also admitted that they had tried substances or drugs other than cigarettes, but to date, no formal intervention has been carried out to help them. Finally, this study determined that peer influence was the major correlated factor for smoking among these students. It is recommended that more programs regarding smoking be held among students to help them obtain proper information about smoking, including the various harmful effects to smokers and others around them. It is important to ensure that they understand their obligation to stay away from smoking, as prevention is better than cure. In addition, smoking cessation services and professional guidance should be introduced and offered to adolescents who are already involved in smoking behavior and substance abuse to assist them in quitting. Finally, guidelines and policies need to be established and implemented by the health authorities, and the whole

community needs to give its full support to control this issue. With such interventions, it is hoped that smoking rates among adolescents can be reduced.

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The Relationship of Self-Care Behaviours and Online Learning Engagement Among Nursing Students During the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic and the sudden switch from conventional to virtual classes allegedly raised students' risk of mental health illnesses, adversely influencing their academic engagement and learning outcomes. Nursing students in Malaysia, especially those enrolled in universities in Sabah, have traditionally been accustomed to a conventional face-to-face teaching and learning approach. Due to the COVID-19 pandemic, e-learning or online classes have become one of the learning methods for university nursing students in Sabah, either while they are on campus or at home, to obtain access for educational purposes. The purpose of this study was to assess the relationship between self-care behaviours and online class engagement among the university nursing students in Sabah throughout the pandemic. This study was a quantitative descriptive cross-sectional study that used the Mindful Self-Care Scale (MSCS) and the Online Student Engagement Scale (OSE). SPSS version 26. Pearson Correlation analysis showed moderate level of positive relationship ($r = 0.582$, $p = < 0.001$, $n = 120$). Adequate evidence exists to show that level of self-care is positively moderately related to the online classes' engagement behaviour among the nursing students in this study. Students should possess the self-control to set goals, effectively allocate their time, and avoid procrastination.

Keywords: online classes, online engagement, pandemic, self-care

Abstrak

***Hubungan Perilaku Perawatan Mandiri dan Keterlibatan Pembelajaran* Online *di antara Mahasiswa Keperawatan Universitas di Sabah Selama Pandemi* COVID-19.** *Pandemi* COVID-19 *dan peralihan tiba-tiba dari kelas konvensional ke kelas virtual diduga meningkatkan risiko penyakit kesehatan mental siswa, yang secara negatif memengaruhi keterlibatan akademik dan hasil belajar mereka. Mahasiswa keperawatan di Malaysia, khususnya mahasiswa keperawatan universitas di Sabah, telah terbiasa dengan pengajaran dan pembelajaran tatap muka. Di tengah pandemi* COVID-19, e-learning *atau kelas* online *menjadi salah satu metode pembelajaran bagi mahasiswa keperawatan universitas di Sabah, baik di kampus maupun di rumah, untuk mendapatkan akses untuk keperluan pendidikan. Tujuan dari penelitian ini adalah untuk menilai hubungan antara perilaku perawatan mandiri dan keterlibatan kelas* online *di kalangan mahasiswa keperawatan universitas di Sabah selama pandemi. Penelitian ini merupakan penelitian* cross-sectional *deskriptif kuantitatif dengan menggunakan* Mindful Self-Care Scale (MSCS) *dan* Online Student Engagement Scale (OSE). *SPSS versi 26* Pearson Correlation *menunjukkan tingkat hubungan positif sedang (r = 0,582, p = < 0,001, n = 120). Ada bukti yang memadai untuk menunjukkan bahwa tingkat perawatan mandiri secara positif terkait dengan perilaku keterlibatan kelas* online *di antara mahasiswa keperawatan dalam penelitian ini.*

Kata Kunci: *kelas* online, *keterlibatan* online, *pandemi, perawatan mandiri*

Introduction

The COVID-19 pandemic and the sudden switch from conventional to virtual classes have allegedly raised students' risk of mental health illnesses, adversely influencing their academic

engagement and learning outcomes, stated Cleofas (2021). Nursing students in Malaysia, especially those enrolled in universities in Sabah, have traditionally been accustomed to a conventional face-to-face teaching and learning approach. Due to the COVID-19 pandemic, e-learning or online classes have become one of the learning methods for university nursing students in Sabah, either while they are on campus or at home, to obtain access for educational purposes. While the COVID-19 pandemic has significantly subsided, Malaysia's public higher education institutions continue to offer approximately 30% of their classes online. This blended approach to education reflects both a preference for remote learning and ongoing precautions, even as pandemic-related restrictions have eased.

However, most students are facing the challenges of unexpectedly switching to online classes, such as distractions and time management, adapting to unfamiliar technology, and staying motivated to keep up with their rapidly changing needs. Nevertheless, because of the pandemic, students are required to become familiar with online classes, which adds to their stress. Hence, self-care is not something that should be underestimated by a person, especially for university students since practicing self-care can help protect students from psychological challenges and improve student outcomes.

Furthermore, Oketch-Oboth (2021) found that the main issues that students were worried about were an unsuitable learning environment, internet connectivity problems, a lack of instruction on how to use online learning platforms, unstable electricity supply, the cost of internet bundles, and a lack of online learning tools like laptop computers, especially during exams. Additionally, Wu et al. (2021) found that during the pandemic, there was a higher-than-normal prevalence of depression, anxiety, psychological discomfort, and insomnia among students in various parts of the world. According to Chiu (2021), these pandemic-related mental health problems as well as students' lack of experience with online learning environments can pose difficulties for student involvement. Therefore, according to Brouwer et al. (2021), adopting healthy self-care is essential for mental well-being and a means of mitigating psychological distress. According to Matarese et al. (2018), self-care is a process that includes the mental, physical, social, and spiritual care that a person uses to enhance their own well-being. In addition, according to Cook-Cottone and Guyker (2018), self-care behaviours can enhance academic results and overall school productivity. Thus, this study set out to assess the relationship between self-care behaviours and online class engagement among the university nursing students in Sabah throughout the COVID-19 pandemic.

Methods

This study was a cross-sectional study that was conducted in the Faculty of Medicine and Health Science, Universiti Malaysia Sabah. The sample for this study consisted of 120 students from 1st year, 2nd year, and 3rd year of the nursing programme at the Faculty of Medicine and Health Science (FMHS), Universiti Malaysia Sabah, based on the calculation of the minimum sample size required. A random sampling technique was conducted to choose the students.

This questionnaire was found to have good validity and reliability (Hotchkiss et al., 2023). MSCS is a 33-item scale, with each question assessed using a five-point Likert scale that inquires about the frequency with which each behaviour was performed in the preceding week. The answer selections are Never (0 days), Rarely (1 day), Sometimes (2–3 days), Often (4–5 days), and Regularly (6–7 days). In order to measure the respondents' self-care behaviours, the scoring that was used was 1 for never, 2 for rarely, 3 for sometimes, 4 for often, and 5 for regularly. The MSCS items were developed to align with a set of actionable practices that promote positive embodiment and well-being, according to Cook-Cottone and Guyker (2018). While the OSE is the scale that is used to meas-

ure student respondents' engagement in online classes. The OSE is a 19-item, unidimensional, five-point Likert scale (1-not at all characteristics of me, 2-not really characteristic of me, 3-moderately characteristic of me, 4-characteristic of me, 5-very characteristic of me) that assesses students' skills, emotions, involvement, and performance in online classrooms. The OSE scale offers an easy, valid, and reliable way to measure students' engagement in online courses (Dixson, 2015).

The completion of this study occurred over the course of nine months, starting in September 2021 and concluding in May 2022. The data of the respondents was collected through questionnaires by using these three different sections of questionnaires: demographic information, Cook-Cottone and Guyker's Mindful Self-Care Scale (MSCS) (2018), and Dixson's Online Student Engagement (OSE) (2015). This research was conducted through the distribution of Google Forms questionnaires. The link to the Google Form was created and distributed via WhatsApp to year 1, year 2, and year 3 nursing students at Universiti Malaysia Sabah's Faculty of Medicine and Health Science. SPSS version 26 was used to analyze the data in this study.

Ethical approval to conduct the study was obtained from the Ethical and Scientific Committee of the Faculty of Medicine and Health Science, Universiti Malaysia Sabah [JKEtika3/21 (8)]. Consent was considered obtained once the participant agreed voluntarily to the online consent form, while detailed explanations about the nature of the study, including the confidentiality of their responses, were assured.

Results

The respondents' demographic data shows that 85% of respondents are female, as nursing courses are still monopolised by women, and 79% are aged between 18 and 21 years old, as this is a diploma in nursing course. The Mindful Self-Care Scale and the Online Student Engagement Scale are both using a 5-point Linkert scale, with

Table 1. Demographic Data

Total: 120	Year 1	Year 2	Year 3	Frequency	Percentage (%)
Gender					
Male	7	3	8	18	15
Female	24	28	50	102	85
Age					
18–21	27	26	42	96	79.2
22–25	4	5	15	23	20
26–28	0	0	1	1	0.8
29 and above	0	0	0	0	0
Current year of study					
Year 1	31			31	25.8

Table 2. MSCS Frequency

		Mindful Relaxation	Physical Care	Self-compassion & Purpose	Supportive Relationship	Supportive Structure	Mindful Awareness	General
Valid	Never	0	4	2	1	1	1	1
	Rarely	14	36	3	9	11	8	12
	Sometimes	51	52	44	24	44	36	47
	Often	40	22	42	52	46	53	38
	Regularly	15	6	29	34	18	22	22
	Total	120	120	120	120	120	120	120

Table 3. OSE Frequency

		Skill	Emotion	Participation	Performance
Valid	not at all characteristics of me	3	3	3	2
	not really characteristic of me	19	15	21	16
	moderately characteristic of me	52	52	48	49
	characteristic of me	37	39	36	39
	very characteristic of me	9	11	12	14
	Total	120	120	120	120

Table 4. Pearson Correlations

		Self-care	Online student Engagement
Selfcare	Pearson Correlation	1	.582**
	p-value		<.001
	N	120	120

**. Correlation is significant at the 0.01 level (2-tailed)

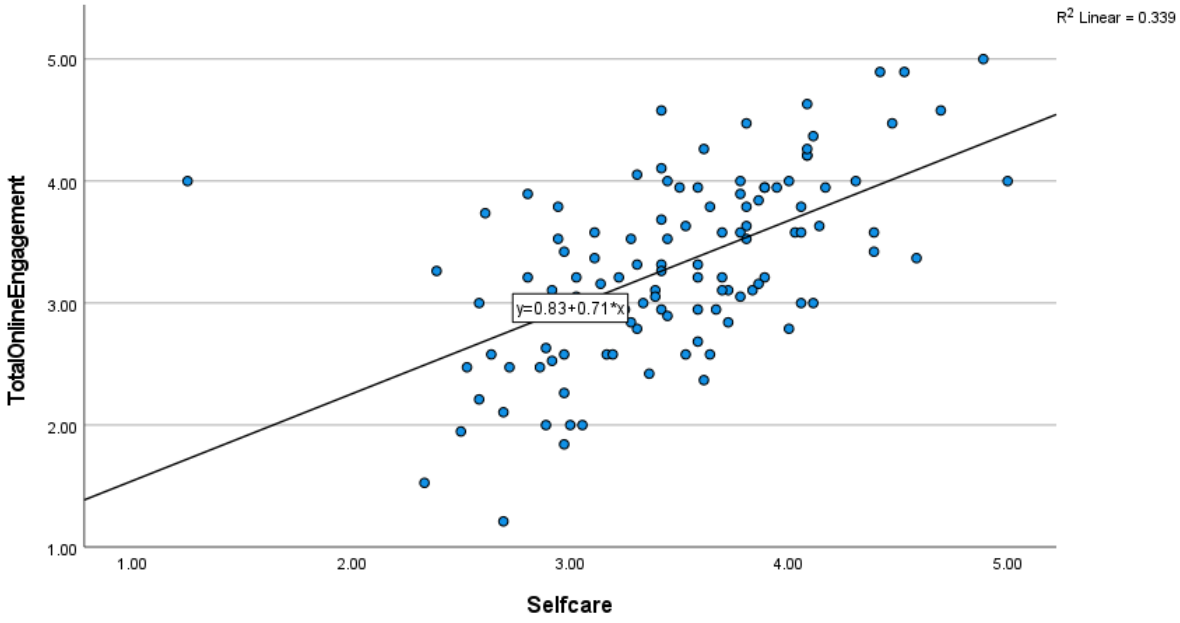

Figure 1. The scatter plot showing the relationship between online student's engagement and self-care

1 score being the lowest, 5 score being the highest, 1 score being the least reflecting the respondent and 5 score being the most reflecting the respondent.

Generally, the demographic data in Table 1 provides a snapshot of the gender distribution, age distribution, and current year of study among a total of 120 students. It indicates a predominantly female student population, with the majority falling within the 18–21 age group and a significant proportion in Year 1 of their studies.

Overall, the descriptive analysis of the MSCS frequency (Table 2) suggests that respondents' engagement in these dimensions related to mindfulness, physical care, self-compassion, pupose, relationships, structure, mindful awareness, and general well-being varied. "Sometimes" and "Often" were the most common response categories across most dimensions, indicating that many respondents reported engaging in these

behaviours or attitudes at least occasionally. "Rarely" and "Regularly" were less common response categories, and "Never" was the least chosen option in most dimensions.

Whilst, the descriptive analysis of the OSE Frequency (Table 3) suggests that respondents' self-perceptions vary across these dimensions related to skills, emotions, participation, and performance. "Moderately characteristic of me" was a common response category for most dimensions, indicating that many respondents felt moderately confident in these areas. However, there were also significant proportions of respondents who characterized themselves as "characteristic of me" or "not really characteristic of me" for each dimension. The "very characteristic of me" and "not at all characteristics of me" categories had fewer respondents.

The Person Correlation show moderate level of positive relationship ($r = 0.582$, $p = < 0.001$, and $n = 120$, relationship between online student engagement and self-care) since the probability value (Pearson Correlation) (< 0.001) is less than the predetermined alpha value (0.05), thus the null hypothesis was rejected. Adequate evidence exists to show that level of self-care is positively moderately related to the online engagement behaviour among the nursing students, as presented in Table 4. This conclusion is made at the significant level, $\alpha = 0.05$ (5%) or confidence level (95%).

The above scatter plot graph shows a better view of the relationship between self-care and online students' engagement (Figure 1). A scatterplot summarises the results: overall, there was a moderate, positive correlation between self-care and online student engagement among nursing students in this study. Increases in self-care were correlated with increases in online student engagement.

Discussion

Online learning, also known as eLearning, encompasses various forms of online education. In this study, "virtual learning" describes scheduled online classes during the COVID-19 pandemic for nursing students, limiting flexibility. Passive learning typically characterizes traditional face-to-face learning, which involves in-person interactions with instructors. Due to the pandemic, nursing students had to attend scheduled online classes. Despite the shift to online learning, their academic performance remained strong. The study acknowledges the scarcity of prior research on this specific topic. The literature review relies on citing previous studies but lacks sufficient data due to this research gap. Studies by Cleofas (2021) and Brouwer et al. (2021) highlight the importance of self-care in mitigating the adverse effects of the pandemic on students' mental health. Javed et al. (2019) emphasizes the importance of self-care for nursing students, especially as they'll care for others in their careers. Moore and Wilhelm (2019) and Ayala et al. (2018) also explore self-care among students in different fields. Romero (2019) discusses how self-care enhances emotional well-being and control over emotional demands. The studies by Baticulon et al. (2021), Oketch-Oboth (2021), and Alavudeen et al. (2021) explore self-care challenges during the pandemic, particularly in online learning environments. Muflih et al. (2021) and Baticulon et al. (2021) mention barriers to online learning, including technological issues and students' preferences for traditional classroom settings. The studies collectively emphasize the need for self-care, especially during challenging times like the pandemic. Barriers to online engagement need to be addressed for effective online education. In conclusion, the studies highlighted the significance of self-care practices in mitigating the psychological and emotional challenges faced by students, particularly during the COVID-19 pandemic. While online learning became a necessity, various barriers and challenges emerged. Addressing these barriers and promoting self-care among students are essential steps towards ensuring their well-being and success in the evolving landscape of education. Future research and interventions should continue to explore and support students in navigating these

challenges effectively. Recognizing the many demands and problems of students is crucial for educational institutions and lecturers, especially in times of crisis like the pandemic. This understanding can result in the creation of specialized support networks, self-care techniques, and enhanced online learning methodologies. Students, lecturers, and institutions working together will be essential to building success and resilience in the face of new and unheard-of obstacles in the educational system.

Conclusion

To engage effectively in online learning, students need to have self-control. Self-control involves managing distractions and staying focused on their studies. Self-care is a crucial aspect of a healthy and fulfilling life. It means prioritizing emotional and physical well-being. However, students often get so busy that they forget to take care of themselves. Practicing self-care can improve mood and overall well-being, leading to a better quality of life.

While self-care is essential for enhancing online student engagement, the demanding and mentally exhausting nature of online programmes can make it challenging for students to find time for meaningful self-care activities. Students must exercise self-control to set goals, manage their time effectively, and avoid procrastination.

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Willingness of Graduate Nursing Students to Provide Care for COVID-19 Patients

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Abstract

Nurses play a key role in management and care services to maintain patient safety; however, with the emergence of COVID-19, the number of nurses still continues to decline. Due to the on-going problem that even novice nurses may see as a major challenge, this study aims to identify whether nursing graduates are willing to participate in the care of COVID-19 patients. The study is cross-sectional where a total of 146 conveniently chosen nursing graduates currently enrolled in Nursing Review Centers in the Philippines preparing to take the Nurse Licensure Examination. The data were collected using Google forms from August to September 2020 using a four-part questionnaire which includes demographic information sheet, COVID-19 Perceived Risk Scale, Fear of COVID-19 Scale, and questions pertaining to their willingness to care for COVID-19 patients. Descriptive statistics such as frequency, percentage, mean, and standard deviation and inferential statistics such as Mann-Whitney U test, Kruskal-Wallis and Spearman rho were used to analyze the data. After gathering the information from the participants, the results had ultimately shown that the majority of the participants (86.3%) are willing to care for COVID-19 patients. The ones with the most significant positive correlation with willingness were age ($p = 0.008$), self-reported health ($p = 0.000$), self-reported knowledge about COVID-19 ($p = 0.001$), and interest to become a Registered Nurses ($p = 0.000$). Based on these results, the majority of the participants had been willing to care for patients with COVID-19, although the factors that influence were associated with their willingness differ.

Keywords: COVID-19, nursing graduates, willingness

Abstrak

***Kesediaan Lulusan Mahasiswa Keperawatan dalam Memberikan Perawatan Pasien* COVID-19**. *Perawat memainkan peran kunci dalam manajemen dan pelayanan perawatan untuk menjaga keselamatan pasien; namun dengan munculnya* COVID-19 *jumlah perawat semakin berkurang. Masalah ini masih berlangsung dan dianggap sebagai tantangan besar bahkan oleh perawat pemula, oleh karena itu penelitian ini bertujuan untuk mengidentifikasi apakah lulusan keperawatan bersedia berpartisipasi dalam perawatan pasien* COVID-19. *Studi ini menggunakan metode* cross-sectional *dan dilakukan pada 146 lulusan keperawatan yang terdaftar di Pusat Tinjauan Keperawatan* (Nursing Review Centers) *di Filipina dan sedang bersiap untuk mengikuti ujian lisensi perawat* (Nurse Licensure Examination). *Data dikumpulkan menggunakan formulir* Google *dari Agustus hingga September 2020 menggunakan kuesioner empat bagian yang meliputi lembar informasi demografi, Skala Persepsi Risiko* COVID-19, *Skala Ketakutan terhadap* COVID-19, *dan pertanyaan terkait kesediaan mereka untuk peduli terhadap pasien* COVID-19. *Statistik deskriptif seperti frekuensi, persentase, mean, dan standar deviasi serta statistik inferensial seperti* Mann-Whitney U test, Kruskal-Wallis, *dan* Spearman rho *digunakan untuk menganalisis data. Setelah mengumpulkan informasi dari para peserta, hasilnya menunjukkan bahwa mayoritas peserta (86,3%) bersedia merawat pasien* COVID-19. *Korelasi positif yang paling signifikan dengan kemauan adalah usia ($p = 0,008$), laporan kesehatan diri ($p = 0,000$), pengetahuan yang dilaporkan sendiri tentang* COVID-19 *($p = 0,001$), dan minat menjadi* registered nurse *($p = 0,000$). Berdasarkan hasil tersebut, mayoritas peserta telah bersedia merawat pasien* COVID-19, *meskipun faktor yang memengaruhi kesediaannya berbeda-beda.*

Kata Kunci: COVID-19, *kesediaan, lulusan keperawatan*

Introduction

It is evident that even though this pandemic, the coronavirus disease (COVID-19), is on-going for about a year, it still possesses a serious global health threat in the healthcare system. Its effect on healthcare professionals is so severe that it causes them stress relating to mental and physical workload and health system resilience (Casafont et al., 2021; Ulenaers et al., 2021). As soon as hospitals were admitting patients for COVID-19, public hospitals were forced to adjust rooms into ICUs for patients in order to provide them care and meet clinical demands. With all these adjustments being done, the need for more hospital staff, especially nurses, are demanded (Casafont et al., 2021). Shortage of nurses has been a problem long before, knowing that during this pandemic, nurses play a role in diverse care practices and management services to ensure patient safety (Velázquez et al., 2020); yet, with the emergence of COVID-19, the need for nurses is still scarce. Different challenges everyday are being faced by nurses during this pandemic, let alone the negative impact it brings, such as emotional distress that results in burnout—which brings out psychological problems (Alharbi et al., 2020). With that being said, knowing that these challenges are far too much for a novice nurse, or even any employee - are nursing graduates willing to participate in the care of COVID-19 patients?

Clearly, this time in history is frightful, having a lot of uncertainties, determining if it is safe to throw yourself out into the world, and whether or not, as graduate nurses, to provide care in COVID-19 patients during these dreadful times. Right after COVID-19 started, social distancing was implemented to reduce the risk of transmission, and with that, face-to-face classes were abrupted and were forced to shift from online classes. By then, a lot of nursing students' all over the world earned their degrees through online commencement ceremonies. In The University of Texas Rio Grande Valley School of Nursing, 166 out of 3,559 students are determined to enter the workforce, ready to serve COVID-19 patients and face the challenges brought about by the pandemic (Fernandez, 2020). Also, a number of schools in The United States of America allowed nursing students who are exemplary in their studies and clinical practice, to graduate early in order to contribute to the healthcare workforce during one of the most critical global health crises. Regardless, a sudden transition from nursing school to a professional setting causes an intimidating and exhausting occurrence—for these new professional's experience workload beyond their capabilities, less time for thorough training and care for patients in need, and the adjustments it has due to special treatment for COVID-19 patients (Cliburn, 2020). However, in a study by Alshutwi (2021), graduate nurses are neutral or undecided whether they are ready to provide care for COVID-19 patients. This is due to the fact that they have concerns in the healthcare system, their lack of knowledge to the disease, and issues raised in terms of treating COVID-19 patients.

Nursing is an essential component of the medical workforce. It is the art and science grounded in caring for human health that makes nursing an exceptional field that may never be replaced by any other discipline. Three million eight hundred thousand registered nurses nationwide with 84.5% of employed licensed registered nurses are recognized by the American Association of Colleges of Nursing (2023) in which they are the primary source of hospital patient care and are known to give out long-term care. Nurses are grounded to practice in nursing theories that makes the discipline even more remarkable. For instance, Virginia Henderson's Need Theory in 1966 focuses on 14 practices that may stimulate patient's independence to be free from any illness as she believes that a nurse should act for the patient in a time of a crisis where the patient lacks knowledge and capabilities towards healing (Sitzman & Eichenberg, 2017). Alongside this theory, Martha Rogers' Science of Unitary Human Beings allows nursing students to understand at an early stage the relationship of humans and their environment which enables

growth, knowledge, and identity through time (Rogers, 1992). Understanding the theory itself allows nurses to recognize how they themselves may also be affected by the environment around them regarding how they would carry out and practice the discipline as it is claimed that nurses have inadequate recognition of an infectious diseases' outbreak (Wu et al., 2020) may cause adverse health consequences on them.

Without a doubt, the world is experiencing an unknown epidemic at this moment. Many lives, including those of medical professionals who are saving lives on the front lines, are at risk due to a lack of preparation. In China, the disease's origin, more than 3,000 medical workers are recorded to have been infected with COVID-19 along with 34 deaths (Department of Human Resources, 2020). It is revealed that the extent of disease-related knowledge and disaster training may possibly affect healthcare workers' willingness to work (Patel et al., 2017) as they would feel more prepared to save and protect not only their patients' lives but also their lives' better. Regardless of any theories and training grounding nursing knowledge and patient care, lack of support and preparation from external factors may affect how nursing graduates may participate in the care of patients with COVID-19 which makes knowing how willing they are to participate in it is of high importance as this will explore factors that will determine their willingness to overcome any more outbreaks that may soon come in the future.

Methods

Study design and participants. This study utilized a cross-sectional design and employed convenience sampling in order to recruit the participants. A priori power analysis was conducted using G*Power version 3.1.9.7 to determine the minimum sample size required to test the study hypotheses (Faul et al., 2007). In order to detect a correlation coefficient of r = .16 with 95% power (alpha = .05, two-tailed), G*Power suggests the researcher would need 138 participants. In the study, a total of 146 nursing graduates were included. The participants were enrolled in nursing review centers in the Philippines preparing to take the Nurse Licensure Examination.

Instruments. The study utilized four-part questionnaire to collect the needed data which includes demographic information sheet, COVID-19 Perceived Risk Scale, Fear of COVID-19 Scale, and questions pertaining to their willingness to care for COVID-19 patients. The outcome variable in this study is the willingness of nursing graduates to participate in the care of COVID-19 patients. Nursing graduates were asked if they are willing to participate in the care of COVID-19 patients answerable by 1 – "Yes" or 2 – "No". They were also asked to what extent they are willingness to take care of COVID-19 patients answerable by 1 – "Not very willing" to 5 – "Very willing".

For the independent variables, participants were asked of their age, year graduated from Bachelor of Science in Nursing (BSN) degree, sex, marital status, type of school graduated, current location at the time of the survey, and if they have a medical condition that might increase their risk for severe COVID-19 illness. Self-reported health status was assessed using a single-item question about how they would describe their overall physical health, and this is answerable by "1-poor" to "5-excellent" (Oducado et al., 2021). Participants were also asked to rate their confidence in protecting themselves from COVID-19 through questions answerable by "1-low confidence" to "5-high confidence", rate in knowledge about COVID-19 with responses "1-low knowledge" to "5-high knowledge", and how likely do they want to become a Registered Nurse with responses "1-not likely" to "5-very likely".

The COVID-19 Perceived Risk Scale (CPRS) by Yıldırım & Güler (2020) was used to measure COVID-19 related perceived risk. Each item is rated on a 5-point Likert scale ranging between "1-negligible" to "5-very large or high". The scale includes cognitive and emotional di-

mensions of personal risk. The CPRS has a reported acceptable reliability of > .70 for both dimensions (Yıldırım & Güler, 2020). For this study, CPRS' cognitive dimension has α = .89 while emotional dimension has α = .82 with an overall α = .82. The higher the score, the higher the level of personal risk related to COVID-19. The Fear of COVID-19 Scale (FCV-19S) by Ahorsu et al. (2022) was also used in this study. The participants indicated their level of agreement using a 5-point Likert-type scale with responses ranging from "1-strongly disagree" to "5 -strongly agree". Among nursing student samples, the FCV-19S has a reported α = .89 (Oducado et al., 2021). Higher scores reflect higher levels of fear related to COVID-19.

Data collection and ethical considerations. The data were collected using Google forms from August 22, 2020 to September 8, 2020. Given the relative risk of the COVID-19, the only practicable way to gather data at the time of the survey was through online data collection. The researchers first contacted the owners of three review centers catering nursing students for the Philippine Nurse Licensure Examination review. The owners of the review centers served as gatekeepers and sent the link of the survey to the private Facebook groups and Messenger where the participants were member. Participants were provided with the purpose of the study at the beginning of the survey. Participants were informed that upon proceeding with

Table 1. Characteristics of Participants

Variables	f	%
Age (Mean = 24.71; SD = 5.03; Median = 22)		
20 to 25	102	69.9
26 and above	44	30.1
Year Graduated		
2020	106	72.6
2019	12	8.2
2018 to 2001	28	19.2
Sex		
Male	30	20.5
Female	116	79.5
Marital Status		
Single	134	91.8
Married	12	8.2
Type of School Graduated		
Public	29	19.9
Private	117	80.1
Current Location		
Luzon	66	45.21
Cordillera Autonomous Region	2	1.4
National Capital Region	21	14.2
Region II	37	25.3
Region III	5	3.4
Region V	1	.7
Visayas	65	44.52
Region VI	32	21.9
Region VII	33	22.6
Mindanao	14	10.3
Region IX	2	1.4
Region X	12	8.2
Region XIII	1	.7
Presence of medical condition that might increase risk for severe COVID-19 illness		
Yes	14	9.6
No	132	90.4

Table 2. Descriptive Statistics of Major Variables

Variables	M	SD
Self-reported health	4.40	.67
Confidence in protecting self from COVID-19	4.40	.68
Self-reported knowledge about COVID-19	4.10	.76
Interest to become a Registered Nurse	4.95	.28
Perceived risk of COVID-19 (Composite)	3.46	.72
Perceived risk (Cognitive)	2.45	1.08
Perceived risk (Emotional)	4.46	.71
Fear of COVID-19	3.12	.98

Table 3. Willingness of the Participants to Participate in the Care of COVID-19 Patients

	f	%	M (SD)
Yes	126	86.3	
No	20	13.7	
Willingness			4.01 (1.04)

the survey, they grant consent to willingly join the study. Any identifiable data were coded to maintain anonymity and confidentiality.

Statistical analysis. The IBM SPSS Statistics version 23 was used for the data analysis. Descriptive statistics such as frequency, percentage, mean, and standard deviation and inferential statistics such as Mann-Whitney U test, Kruskal-Wallis and Spearman rho were used to analyze the data. The level of significance was set at 0.05.

Results

Table 1 shows that the average age of the participants was 24.71 (SD = 5.03) and they graduated in the year 2020. Majority were females (79.5%), single (91.8%), and had no medical condition that increases the risk of severe COVID-19 illness (91.4%). There was an almost equal proportion of participants currently located in Luzon (45.21%) and Visayas (44.52%) and the majority had no presence of medical condition that might increase the risk for severe COVID-19 illness.

Table 2 shows the following mean score of the participants: self-rated health (4.40 + .67), confidence in protecting self from COVID-19 (4.40 + .68), self-reported knowledge about COVID-19 (4.10 + .76), interest to become a Registered Nurse (4.95 + .72), overall perceived risk of COVID-19 (3.46 + .72), and fear of COVID-19 (3.12 + .98). Table 3 shows that the majority of the participants (86.3%) were willing to participate in the care of COVID-19 patients with a mean score of 4.01 (SD = 1.04).

Table 4 shows that there was a significant difference in the willingness to participate in the care of COVID-19 patients according to marital status (t = 535.5; p = .043) and presence of medical condition (t = 507.5; p = .003). However, no significant difference was noted according to sex (t = 1424; p = .105), type of school graduated (t = 1662; p = .858), and current location (t = 0.779; p = .677).

Table 5 shows that there was a significant positive correlation between age (rho = .220; p = .008), self-reported health (rho = .326; p = .000), self-reported knowledge about COVID-19 (rho = .249; p = .001), interest to become a Registered Nurses (rho = 298; p = .000), and willingness to participate in the care of COVID-19 patients. There was also a significant but negative or inverse correlation between general perceived

Table 4. Differences in Willingness to Participate in the Care of COVID-19 Patients

Variables	Mean Rank	Test statistics	p
Sex		1424.000	.105
Male	84.03		
Female	70.78		
Marital Status		535.500	.043
Single	71.50		
Married	95.88		
Type of School Graduated			
Public	72.31	1662.000	.858
Private	73.79		
Presence of medical condition		507.500	.003
Yes	43.75		
No	76.66		
Location		.779	.677
Luzon	30.21		
Visayas	33.53		
Mindanao	27.80		

Table 5. Correlation to Willingness to Participate in the Care of COVID-19 Patients

Variables	Spearman's rho	p
Age	.220	.008
Year Graduated	-.192	.020
Self-reported health	.326	.000
Confidence in protecting self from COVID-19	.137	.099
Self-reported knowledge about COVID-19	.249	.001
Interest to become a Registered Nurse	.298	.000
Perceived risk of COVID-19	-.236	.004
Perceived risk (Cognitive)	-.162	.049
Perceived risk (Emotional)	-.195	.018
Fear of COVID-19	-.110	.185

risk of COVID-19 (rho = -.236; p = .004) and with its cognitive (rho = -.162; p = .049) and emotional (rho = -.195; p = .018) dimen-sions to willingness to participate in the care of COVID-19 patients. In contrast, confidence in protecting self from COVID-19 (p = .099) and fear of COVID (p = .185) were not significantly correlated with willingness to participate in the care of COVID-19 patients.

Discussion

The study was conducted in order to determine the willingness of nursing graduates to care for patients with COVID-19. The results had ultimately shown that the majority of the participants (86.3%) were willing to care for COVID-19 patients. This proportion was higher than that found in earlier studies that identified students' willingness to participate in the significant demand for healthcare providers in the ongoing pandemic. In those studies, 66.3% of medical and nursing students in South Korea (Kim et al., 2022), 74.2% of medical and nursing students in Spain (Cervera-Gasch et al., 2020), 71.18% of medical students in a survey across 74 countries (Michno et al., 2021), and 80% of medical students from 10 medical schools in Uganda, Olum et al. (2020) reported that they were willing to enter the medical workforce. The wording of the items and Likert response scales used for assessment, along with the period of data collection, may have affected the results of the current study and previous

studies differently. The Philippines, which started reporting cases in August 2020 and is still reporting two to three instances every day, crossed the 100,000-case mark on August 2 (Crisostomo, 2020). At that point, the Philippines had the most COVID-19 cases in Southeast Asia after surpassing Indonesia's total number of confirmed COVID-19 cases. Given that COVID-19 is spreading throughout local communities and that patients posed a risk of infection, this may have contributed to the participants' sense of community.

In terms of the willingness of the participants to care for COVID-19 patients when grouped according to the demographic profile, the marital status and the presence of medical condition have shown a significant different. Married participants and those with no medical condition showed more willingness to care for patients with COVID-19 as compared to those who are single and with medical condition. The significance of these factors heavily relates to the willingness as both require the nurse to place someone at risk, whether themselves or those that they care about around them which would severely impact their decision to care for patients with COVID-19. This is especially so with those who have medical conditions as COVID-19 would affect the respiratory system significantly and could potentially compromise the patient's health; even more so if they had a pre-existing morbidity such as hypertension. It has been mentioned by Ulenaers et al. (2021) and Casafont et al. (2021) that with the current situation, the stress that it has placed on healthcare professionals has been detrimental to their health.

Moreover, as for the correlation to willingness, the ones with the most significant positive correlation with willingness were age (rho = .220; p = .008), self-reported health (rho = .326; p = .000), self-reported knowledge about COVID-19 (rho = .249; p = .001), and interest to become a Registered Nurse (rho = 298; p = .000). These positive correlations with the willingness of the nursing graduates could be further enhanced amongst participants, not necessarily age itself but more so of the latter factors, as if they were better prepared with information and knowledge surrounding the disease, their willingness to work in that environment, as mentioned by Patel et al. (2017), could be affected for better or for worse. Furthermore, as explored by studies such as Baack and Alfred (2013) and Sultan et al. (2020), the better prepared the nurse's colleagues and institution are—such as enhancing the staff's knowledge and skills with necessary disaster preparedness programs—the more willing and confident these nurses would be in taking care of patients with COVID-19. However, confidence in protecting self from COVID-19 (p = .099) and fear of COVID-19 (p = .185) were not significantly correlated with willingness to participate in the care of COVID-19 patients. These results do not mean that certain factors should be disregarded; in fact, it should be further investigated as the study itself had only been limited to a handful of factors with little depth. Especially since the grasp of dealing with COVID-19 by governments, civilians, and medical professionals alike around the world had significantly improved since the first year of the pandemic, the factors and their correlations would have changed overtime as well. Some may increase, whilst others decrease, or maybe some would stay consistently stagnant.

A lack of interest among medical and nursing students in providing patient care during a pandemic like COVID-19 could add to the strain on an already overburdened healthcare system and ultimately cause it to collapse. Numerous affected countries have already reported seeing this (Rafi et al., 2021; Al-Hunaishi et al., 2019; Ahmad et al., 2020). Middle and low-income countries would be more severely affected by such a collapse. Any system for preparing the healthcare workforce must have a strategic, research-based plan in place to handle a disaster situation. One important aspect of such planning might be addressing the elements that affect the medical and nursing students' willingness to participate as future healthcare workers.

Notwithstanding its positive findings, this study

has some limitations. First, it needs to be clarified if the findings hold for other nations given the study was conducted in the Philippines. Also, the study included newly graduated nurses undergoing review for their licensure examination; hence, selection bias may have influenced the findings. Prospective research endeavors could be undertaken to assess the willingness of nurses to care for COVID-19 patients or other communicable diseases in other countries.

Conclusion

In spite of the growing problem of exposure and workload caused by COVID-19 for healthcare workers and the scarcity of nurses, it was found that majority of the participants were willing to care for patients with COVID-19. In addition, proper preparation done for the newly graduated nurses such as intensive training and hands-on practice could positively affect their willingness to care for patients during the pandemic and even more once they are equipped with the proper information regarding the disease and tools for care as staff nurses. Nevertheless, it is also important to look into the reasons for newly graduated nursing students why some are not willing to provide care for patients during the COVID-19 pandemic as the number of nurses is highly needed to be increased. Further, the result of this study is an important contribution to the design of future intervention strategies to increase nursing students' readiness to provide care for patients in a public health emergency.

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AUTHOR INDEX

All article authors published in Jurnal Keperawatan Indonesia Volume 26 of 2023 are listed below alphabetically, complete with numbers and pages.

SUBJECT INDEX

JURNAL KEPERAWATAN INDONESIA
SUBMISSION GUIDE

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SUBMISSION GUIDE

All submitted manuscripts will go through a feasibility assessment by Reviewer and Editor. The assessment system is anonymous and independent. The editor will determine the final decision of the manuscript, whether accepted, given time for revision, or rejected. The author will receive notification from the editor via correspondence by e-mail. If given time for revision, the editor will determine when the longest time for submission/return of the manuscript after revision. If the author returns the manuscript after the time limit specified, the author must perform steps such as the initial submission.

Changes made to the revised manuscript must be written in the revised list. The author is asked to examine carefully the wording, editing, correctness and completeness of the text, tables, and figures and how to write sources or references. Manuscripts had been acceptable, but the writing is not in accordance with the JKI guideline, will have publishing delay. Rejected manuscripts will not be returned to the author unless stated earlier.

Reprint of 3 copies and JKI print a complete article of 1 copy will be given at the cost of Rp150,000.00 (not including shipping costs). Additional reprints can be ordered with special fees after the manuscript is declared accepted. Reprint orders after the manuscript are published in a journal (printed) will incur an additional fee of 50% of the regular fee. A reprint order form will be sent to the author together with the revised notice of the manuscript or can order via e-mail address: jurnal.keperawatan@ui.ac.id or redaksi_jki@yahoo.com.

AUTHOR GUIDELINES: ORIGINAL RESEARCH

ARTICLE TITLE (all caps, 14 point font, boldface, centered, max 16 words)
(One blank single space line, 14 pt)

Abstract (10 pt, bold, center)
(One blank single space line, 10 pt)

Article Title. Abstract should be written using Times New Roman font, size 10pt, not-italics, right justify, and one paragraph-unstructured with single spacing, completed with English title written in bold at the beginning of the English abstract. It should be around 100–250 words. The abstract should state the problem, the purposes of the study or investigation, basic procedures (research design, selection and size of study subjects; observational and analytical methods), main findings (OR/ RR, CI or themes in qualitative research), and the principal conclusions. Recommendation and implication of the study must be clear. It should not contain any references or displayed equations. For the article in English, Indonesian abstract will be provided by the editors.

(One blank single space line, 10 pt)

Keywords: up to 6 words/ phrase in English, alphabetically order (10 point font, italics), give commas between words/phrase.

(One blank single space line, 12 point font, boldface)

Abstrak *(10 pt, bold, italic)*
(One blank single space line, 10 pt)

Judul Artikel*. Abstrak ditulis menggunakan bahasa Indonesia dan Inggris, dengan jumlah kata sekitar 100–250 kata. Menggunakan tipe abstrak satu paragraf tidak berstruktur, huruf 10 pt, cetak miring, spasi tunggal, rata kanan-kiri, tidak ada kutipan dan singkatan/ akronim. Abstrak harus berisi pendahuluan atau masalah yang diteliti termasuk tujuan penelitian, jika memungkinkan buat dalam satu kalimat. Desain penelitian, cara pengambilan dan besar sampel, cara dan pengumpulan data, serta analisis data. Penemuan utama (OR/ RR, CI atau tema dalam riset kualitatif). Tuliskan satu atau dua kalimat untuk mendiskusikan hasil dan kesimpulan. Rekomendasi dan implikasi hasil penelitian dituliskan dengan jelas.*

(One blank single space line, 10 pt)

Kata Kunci*: Kata kunci ditulis menggunakan bahasa Indonesia dan Inggris. Berisi kata atau frasa tiga sampai enam kata dan diurutkan berdasarkan abjad (10pt, italics). Antar kata kunci dihubungkan dengan koma.*

(Three blank single space lines, 12 point font, boldface)

Introduction (14 point font, boldface, cap in the first letter of headings)

(One blank single space line, 10 point font)

The manuscript is written with Times New Roman font size 12pt, single-spaced, left and right justified, on one-sided pages, paper in one column and on A4 paper (210 mm x 297 mm) with the upper margin of 3.5 cm, lower 2.5 cm, left and right each 2 cm. The manuscript including the graphic contents and tables should be around 3500–4500 words (exclude references). If it far exceeds the prescribed length, it is recommended to break it into two separate manuscripts. Standard English grammar must be observed. The title of the article should be brief and informative and it should not exceed 16 words. The keywords are written after the abstract. (Between paragraphs are spaced one blank, single spaced, without indentation)

The title should contain the main keyword and do not use abbreviations, numbering around 20 words. Authors need to write a short title is also desirable to be written as a page header on each journal page. Authors should not just write words such as study/ relationship/ influence in the title because the title should indicate the results of the study, for example, "Reduction of blood sugar through exercises diabetes in the elderly".

The full name of the author (without academic title) is placed below the manuscript title. The order of the author based on his contribution to the writing process. After the authors name is written with superscript numbers to mark the affiliation author. One author, affiliates can be more than one, for example Ananda Anandita[1], Ahmad Taufik[2], Josephine[3]

AUTHOR GUIDELINES: ORIGINAL RESEARCH

Affiliates and address of the authors. Give the number according to the name of the author, for example 1. Department of Maternal and Women's Health Nursing, Faculty of Nursing, Universitas Indonesia, Prof. Dr. Bahder Djohan Street, Depok, West Java – 16424. Correspondence address is email address of the one of the author, for example anandita12@ui.ac.id.

The use of abbreviations is permitted, but the abbreviation must be written in full and complete when it is mentioned for the first time and it should be written between parentheses. Terms/Foreign words or regional words should be written in italics. Notations should be brief and clear and written according to the standardized writing style. Symbols/signs should be clear and distinguishable, such as the use of number 1 and letter l (also number 0 and letter O). Avoid using parentheses to clarify or explain a definition. The organization of the manuscript includes **Introduction, Methods** or **Experimental, Results, Discussion, Conclusions,** and **References**. **Acknowledgement** (if any) is written after **Conclusion** and before **References** and narratively, not numbered. The use of subheadings is discouraged. Between paragraphs, the distance is one space. Footnote is avoided.

This manuscript uses *American Psychological Association (APA*) manual style as citation. When using APA format, follow the author-date method of in-text citation. This means that the author's last name and the year of publication for the source should appear in the text, for example, (Jones, 1998), and a complete reference should appear in the reference list at the end of the paper. Citation can be put at the beginning of the sentence, for example Johnson (2005) states that … or the source put at the end of a sentence for examples … (Purwanto, 2004). See the complete format on this link https://owl.english.purdue.edu/owl/resource/560/02/

Introduction contains justification of the importance of the study conducted. Novelty generated from this study compared the results of previous studies or the umbrella of existing knowledge needs to be clearly displayed. Complete it with main reference used. State in one sentence question or research problems that need to be answered by all the activities of the study. Indicate the methods used and the purpose or hypothesis of the study. The introduction does not exceed five paragraphs.
(One blank single space line, 12 point font)

Methods (14 point font, boldface, cap in the first letter of headings)

(One blank single space line, 10 point font)

Method contains the design, the size, criteria and method of sampling, instruments used, and procedures collecting, processing, and analysis of the data. When using a questionnaire as instrument, explain the contents briefly and to measure which variables. Validity and reliability of instruments should also be explained. In the experimental or intervention studies need to be explained interventional procedure or treatment is given. In this section it should explain how research ethics approval was obtained and the protection of the rights of the respondents imposed. Analysis of data using computer programs needs not be written details of the software if not original. Place/location of the study is only mentioned when it comes to study. If only as a research location, the location details not worth mentioning, just mentioned vague, for example, "... at a hospital in Tasikmalaya."

For the qualitative study, in this section needs to explain how the study maintain the validity (trustworthiness) data obtained. The methods section written brief in two to three paragraphs.
(One blank single space line, 12 point font)

Results

(One blank single space line, 10 point font)

The findings are sorted by the objectives of the study or the research hypothesis. The results do not display the same data in two forms namely tables/ images /graphics and narration. No citations in the

results section. The average value (mean) must be accompanied by a standard deviation. Writing tables using the following conditions.
Table only uses 3 (three) row lines (do not use a column line), the line heading, and the end of the table (see example). Table is written with Times New Roman size 10pt and placed within a single space below the title table. Table titles is written with font size 9pt bold, capital letters at the beginning of the word and placed on the table with the format as shown in the examples that do not use the column lines. Numbering tables are using Arabic numerals. The table framework is using lines size 1 pt. If the table has many columns, it can use one column format at half or full page. If the title in each table column is long and complex, the columns are numbered and its description given at the bottom of the table. Mean, SD, and t-test values should include value of 95% CI. Significance value is put with not mention P at first. Example: The mean age 25.4 years intervention group (95% CI). Based on the advanced test between intervention and control groups showed significant (example: p= 0.001; CI= ... - ...).

Images are placed symmetrically in columns within a single space of a paragraph. Pictures are numbered and sorted by Arabic numerals. Captions placed below the image and within one single space of the image. Captions are written by using 10pt font size, bold, capital letters at the beginning of the word, and placed as in the example. The distance between the captions and paragraphs are two single spaced.

Images which have been published by other authors should obtain written permission from the author and publisher. Include a printed image with good quality in a full page or scanned with a good resolution in the format {file name}.jpeg or {file name}. tiff. When the images are in the photograph format, include the original photographs. The image will be printed in black and white, unless it needs to be shown in color. The author will be charged extra for color print if more than one page. The font used in the picture or graphic should be commonly owned by each word processor and the operating system such as Symbol, Times New Roman, and Arial with size not less than 9 pt. Image files which are from applications such as Corel Draw, Adobe Illustrator and Aldus Freehand can give better results and can be reduced without changing the resolution.

Table and image are not integrated with the contents of the manuscript, put after reference or at the end of the manuscript.

For the qualitative study, the findings commonly are written in the form of participants quotes. Table format is rarely used except to describe the characteristics of the participants, or recapitulation of the themes or categories. If the quote is not more than 40 words, then use quotation marks (") at the beginning and at the end of a sentence and include participants/ informants which give statements without the need to create separate paragraphs. Ellipsis (...) is only used to change a word that is not shown, instead of a stop sign/pause. See the following example.

Due to the ongoing process, the women experiencing moderate to severe pain in the knees, ankles, legs, back, shoulders, elbows, and/or their fingers, and they are struggling to eliminate the pain. To alleviate pain, they look for the cause of the pain. One participant stated that, "... I decided to visit a doctor to determine the cause of the pain is. Now I'm taking medication from the doctor in an attempt to reduce this pain" (participant 3)
Here is an excerpt example of using block quotations if the sentences are 40 or more. Use indentation 0.3"

As discussed earlier, once the participants had recovered from the shock of the diagnosis of the disease, all participants decided to fight for their life. For most of them, the motivation for life is a function of their love for their children; namely child welfare, which being characteristic the pressure in their world. Here is an example of an expression of one of the participants:

I tried to suicide, but when I think of my children, I cannot do that [crying]. I thought, if I die, no one will take care of my children. Therefore, I decided to fight for my life and my future. They (children) were the hope of my life (participant 2).

Discussion

Describe the discussion by comparing the data obtained at this time with the data obtained in the previous study. No more statistical or other mathematical symbols in the discussion. The discussion is directed at an answer to the research hypothesis. Emphasis was placed on similarities, differences, or the uniqueness of the findings obtained. It is need to discuss the reason of the findings. The implications of the results are written to clarify the impact of the results the advancement of science are studied. The discussion ended with the various limitations of the study.

Conclusion

Conclusions section is written in narrative form. The conclusion is the answer of the hypothesis that leads to the main purpose of the study. In this section is not allowed to write other authors work, as well as information or new terms in the previous section did not exist. Recommendation for further research can be written in this section.

Acknowledgement (if any)

Acknowledgement is given to the funding sources of study (donor agency, the contract number, the year of accepting) and those who support that funding. The names of those who support or assist the study are written clearly. Names that have been mentioned as the authors of the manuscripts are not allowed here.

References (14pt, *boldface*, Capital letter in the beginning of the Word)

Use the most updated references in the last 10 years. Reference is written with Times New Roman font size 11 pt, single space, the distance between the references one enter. The references use the hanging, which is on the second line indented as much as 0.25", right justified. The references only contain articles that have been published, and selected the most relevant to the manuscript. It prefers primary references. The references format follows the "name-years" citation style (APA style 7th edition). All sources in the reference must be referenced in the manuscript and what was in the manuscript should be in this reference. The author should write the family/last name of sources author and year of publication in parentheses use, for example (Potter & Perry, 2006) or Potter and Perry (2006). Write the first author's name and "et al.", if there are three or more authors.

Examples:

Journal

Author, A.A., Author, B.B., & Author, C.C. (year). Article title: Sub-title. *Journal Title*, *volume* (issue number), page numbers.

Wu, S.F.V., Courtney, M., Edward, H., McDowell, J., Shortridge-Baggett, L.M., & Chang, P.J. (2007). Self-efficacy, outcome expectation, and self-care behavior in people with type diabetes in Taiwan. *Journal of Clinical Nursing, 16* (11), 250–257.

References with two or more authors (up to 20 authors) write all author's names. If an article has 21 authors or more, list the first 19 authors, then insert an ellipsis (…) and then the last name and first initials of the last author. Example:

Wolchik, S.A., West, S.G., Sandler, I.N., Tein, J., Coatsworth, D., Lengua, L., Johnson, A., Ito, H., Ramirez, J., Jones, H., Anderson, P., Winkle, S., Short, A., Bergen, W., Wentworth, J., Ramos, P., Woo, L., Martin, B., Josephs, M., … Brown, Z. (2005). *Study of the brain. Psychology Journal, 32* (1), 1–15. doi: 10.1037/1061-4087.45.1.11.

Conference Proceeding

Schnase, J.L., & Cunnius, E.L. (Eds.). (1995). Proceedings from CSCL '95: *The First International Conference on Computer Support for Collaborative Learning*. Erlbaum.

Newspaper (no author's name)

Generic Prozac debuts. (2001, August 3). The Washington Post, pp. E1, E4.

It's subpoena time. (2007, June 8). New York Times. https://www.nytimes.com/2007/06/08/opinion/08fri1.html

Book

Author, A.A. (Year). *Source title: Capital letter in the beginning of the subtitle*. Publisher.

Peterson, S.J., & Bredow, T.S. (2004). *Middle range theories: Application to nursing research*. Lippincott Williams & Wilkins.

Book chapter

Author, A.A. (Year). Chapter title*:* Capital letter in the beginning of the subtitle. In Initial, Surname (Author's name/book editor) (eds), *Book title*. Publisher.

Hybron, D.M. (2008). Philosophy and the science of subjective well-being. In M. Eid & R.J. Larsen (Eds.), *The science of subjective well-being* (pp.17–43). Guilford Press.

Translated book

Ganong, W.F. (2008). *Fisiologi kedokteran* (Ed ke-22). (Petrus A., trans). McGraw Hill Medical. (Original book published 2005).

Thesis/Dissertation

If available in the database

Rockey, R. (2008). An observational study of pre-service teachers' classroom management strategies (Publication No. 3303545) [Doctoral dissertation, Indiana University of Pennsylvania]. ProQuest Dissertations and Theses Global.

Gerena, C. (2015). Positive thinking in dance: The benefits of positive self-talk practice in conjunction with somatic exercises for collegiate dancers [Master's thesis, University of California Irvine]. University of California, Scholarship. https://escholarship.org/uc/item/1t39b6g3

If not published

Last-name, A.A. (year). *Dissertation/thesis title.* (Unpublished doctoral dissertation/master thesis). Institution Name, Location.

Considine, M. (1986). *Australian insurance politics in the 1970s: Two case studies*. (Unpublished doctoral dissertation). University of Melbourne, Melbourne, Australia.

Database Article

Author, A.A., Author, B.B., & Author, C.C. (Year pub). Title of article. *Title of Journal*, Volume (Issue), pp–pp. doi: xx.xxxxxxxx [OR] Retrieved from URL of publication's home page

Borman, W.C., Hanson, M.A., Oppler, S.H., Pulakos, E.D., & White, L.A. (1993). Role of early supervisory experience in supervisor performance. *Journal of Applied Psychology, 78* (8), 443–449. Retrieved from http://www.eric.com/jdlsiejls/ supervisor/early937d

Database article with DOI (Digital Object Identifier)

Brownlie, D. (2007). Toward effective poster presentations: An annotated bibliography. *European Journal of Marketing, 41* (11/12), 1245–1283. doi: 10.1108/03090560710821161.

Other online source

Author, A.A. (year). Title of source. Retrieved from URL of publication's home page

Article from website

Exploring Linguistics. (1999, August 9). Retrieved from http://logos.uoregon.edu/explore/orthography/ chinese.html#tsang

Online article

Becker, E. (2001, August 27). Prairie farmers reap conservation's rewards. *The New York Times*, pp. 12–90. Retrieved from http://www.nytimes.com

Appendices

Appendices are only used when absolutely necessary, placed after the references. If there is more than one attachment/appendix then sorted alphabetically.

Here is an example of a table

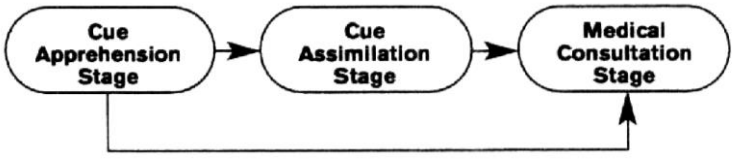
Table 1. The Characteristics of the Respondents (capital letters at the beginning of the word 11 pt, left justify)

(One blank single space line, 10 pt)

Client's Initial	Age	Major Problem
Mr. BN	56	Aggressiveness
Mr. MA	40	Withdrawal
Mr. AS	45	Swing Mood

*table footnotes (if necessary)

Here is an example of an image



(One blank single space line, 10 pt)

Figure 1. The Process of Cardiac Sensitivity Cues (Capital Letters in the Beginning of the Words, 11pt)

AUTHOR GUIDELINES: CASE REPORT

ARTICLE TITLE (all caps, 14-point font, boldface, centered, Maximum 16 words)

(One blank single space line, 14 pt)

Abstract (10-pt, bold, italics)

(One blank single space line, 10 pt)

Article Title. Abstract should be written using Times New Roman font, size 10pt, not-italics, right justify, and one paragraph-unstructured with single spacing, completed with English title written in bold at the beginning of the English abstract. The Abstract should be "short and sweet". It should be around 100–250 words. Abbreviations or references within the Abstract should not be used. The Abstract should include background, case illustration, and conclusion. Background includes an introduction about why this case is important and needs to be reported. Please include information on whether this is the first report of this kind in the literature. Case illustration includes brief details of what the patient(s) presented with, including the patient's age, sex and ethnic background. Conclusions is a brief conclusion of what the reader should learn from the case report and what the clinical impact will be. Is it an original case report of interest to a particular clinical specialty of nursing or will it have a broader clinical impact across nursing? Are any teaching points identified? If manuscripts are not from Indonesia, the Indonesian abstract will be assisted by the editor.

(One blank single space line, 10 pt)

Keywords: This section consists of three to six keywords/phrases representing the main content of the article. It is important for indexing the manuscript and easy online retrieval. It is written in English, alphabetical order (10-point font), and gives commas between words/phrases.

(One blank single space line, 12-point font)

Abstrak *(10 pt, bold, senter)*

(One blank single space line, 10 pt)

Judul Artikel. Abstrak harus ditulis menggunakan huruf Times New Roman, ukuran 10pt, huruf miring, rata kanan, dan satu paragraf-tidak terstruktur dengan spasi tunggal. Abstrak harus "pendek dan manis". Seharusnya sekitar 100–250 kata. Singkatan atau referensi dalam Abstrak tidak boleh digunakan. Abstrak harus mencakup latar belakang, ilustrasi kasus, dan kesimpulan. Latar belakang mencakup pengantar tentang mengapa kasus ini penting dan perlu dilaporkan. Harap sertakan informasi tentang apakah ini adalah laporan pertama dari jenis ini dalam literatur. Ilustrasi kasus mencakup rincian singkat tentang apa yang pasien sajikan, termasuk usia pasien, jenis kelamin dan latar belakang etnis. Kesimpulan merupakan kesimpulan singkat dari apa yang pembaca harus pelajari dari laporan kasus dan dampak klinisnya. Apakah laporan kasus asli yang menarik bagi area spesialis keperawatan tertentu atau apakah itu berdampak klinis yang lebih luas?

(One blank single space line, 10 pt)

Kata Kunci*: Bagian ini terdiri dari tiga sampai enam kata kunci/frase yang mewakili konten utama artikel. Kata kunci ini penting untuk indeksasi manuskrip dan pencarian daring dengan mudah. Itu ditulis dalam bahasa Inggris, diurutkan berdasarkan abjad (font 10 huruf, huruf miring), memberikan koma di antara kata-kata/frasa.*

(Three blank single space lines, 12-point font)

Introduction (14-point font, boldface, cap in the first letter of headings)

(One blank single space line, 10-point font)

The manuscript is written with Times New Roman font size 12pt, single-spaced, left and right justified, on one-sided pages, paper in one column and on A4 paper (210 mm x 297 mm) with the upper margin of 3.5 cm, lower 2.5 cm, left and right each 2 cm. The manuscript including the graphic contents and tables should be around 3500–4500 words (exclude references). If it far exceeds the prescribed length, it is recommended to break it into two separate manuscripts. Standard English grammar must be observed. The title of the article should be brief and informative and it should not exceed 16 words. The keywords are written after the abstract.

(Between paragraphs are spaced one blank, single spaced, without indentation)

The title should contain the main keyword and do not use abbreviations, numbering around 16 words. Authors need to write a short title is also desirable to be written as a page header on each journal page. Authors should not just write words such as study/ relationship/ influence in the title because the title should indicate the results of the study, for example, "Reduction of blood sugar through exercises diabetes in the elderly".

AUTHOR GUIDELINES: CASE REPORT

The information about the author(s) such as full name (without academic title), affiliates, and address are wrote on the separate file (tittle page). Affiliates and address of the authors. Give the number according to the name of the author, for example 1. Department of Maternal and Women's Health Nursing, Faculty of Nursing, Universitas Indonesia, Prof. Dr. Bahder Djohan Street, Depok, West Java – 16424. Correspondence address is email address of the one of the author, for example anandita12@ui.ac.id.

The use of abbreviations is permitted, but the abbreviation must be written in full and complete when it is mentioned for the first time and it should be written between parentheses. Terms/Foreign words or regional words should be written in italics. Notations should be brief and clear and written according to the standardized writing style. Symbols/signs should be clear and distinguishable, such as the use of number 1 and letter l (also number 0 and letter O). Avoid using parentheses to clarify or explain a definition. The organization of the manuscript includes **Introduction, Case Illustration, Discussion, Conclusions,** and **References**. **Acknowledgement** (if any) is written after **Conclusion** and before **References** and narratively, not numbered. The use of subheadings is discouraged. Between paragraphs, the distance is one space. Footnote is avoided.

This manuscript uses *American Psychological Association (APA*) manual style as citation. When using APA format, follow the author-date method of in-text citation. This means that the author's last name and the year of publication for the source should appear in the text, for example, (Jones, 1998), and a complete reference should appear in the reference list at the end of the paper. Citation can be put at the beginning of the sentence, for example Johnson (2005) states that … or the source put at the end of a sentence for examples … (Purwanto, 2004). See the complete format on this link https://owl.english.purdue.edu/owl/resource/560/02/

The Introduction or Background section should explain the background of the case, including the disorder or nursing problems, usual presentation and progression, and an explanation of the presentation if it is a new disease or disorder. If it is a case discussing an adverse intervention the Introduction should give details of intervention's common use and any previously reported side effects. It should also include a brief literature review. This should introduce to the case report from the stand point of those without specialist knowledge in the area, clearly explaining the background of the topic. It should end with a very brief statement of what is being reported in the article.

The Introduction should be in brief, stating the purpose of the study. Provide background that puts the manuscript into context and allows readers outside the field to understand the significance of the study. Define the problem addressed and why it is important and include a brief review of the key literature. Note any relevant controversies or disagreements in the field. Conclude with a statement of the aim of the work and a comment stating whether that aim was achieved.
(One blank single space line, 12-point font)

Case Illustration (14-point font, boldface, cap in the first letter of headings)

(One blank single space line, 10-point font)

This should present all relevant details concerning the case. This section can be divided into separate sections presented with appropriate subheading, such as history and presenting conditions, intervention, outcome, etc. This should provide concerned details of the case with relevant demographic information of the patient concealing their identification (without adding any details that could lead to the identification of the patient), medical history, observed symptoms and describe any tests or treatments done on the patient. If it is a case series, then details must be included for all patients. Discuss the significance and rarity of findings with referencing to the previous studies.

If it is need to present table(s) and or image(s), some rules should be followed. Table only uses 3 (three) row lines (do not use a column line), the line heading, and the end of the table (see example). Table is written with Times New Roman size 10-pt and placed within a single space below the title table. Table titles is written with font size 9-point bold, capital letters at the beginning of the word and placed on the table with the format as shown in the examples that do not use the column lines.

Numbering tables are using Arabic numerals. The distance between table and the paragraph is a single space. The table framework is using lines size 1 pt. If the table has many columns, it can use one column format at half or full page. If the title in each table column is long and complex, the columns are numbered and its description given at the bottom of the table. The table is placed in the highest or the very bottom of each page and do not flanked by sentence. Avoid interrupted the table by page.

Images are using a single space of a paragraph. If the size of the image passes through the column width then the image can be placed with a single column format. Pictures are numbered and sorted by Arabic numerals. Captions placed below the image and within one single space of the image. Captions are written by using 10pt font size, bold, capital letters at the beginning of the word, and placed as in the example. The distance between the captions and paragraphs are two single spaced.

Images which have been published by other authors should obtain written permission from the author and publisher. Include a printed image with good quality in a full page or scanned with a good resolution in the format {file name}.jpeg or {file name}. tiff. When the images are in the photograph format, include the original photographs. The image will be printed in black and white, unless it needs to be shown in color. The author will be charged extra for color print if more than one page. The font used in the picture or graphic should be commonly owned by each word processor and the operating system such as Symbol, Times New Roman, and Arial with size not less than 9-pt. Image files which are from applications such as Corel Draw, Adobe Illustrator and Aldus Freehand can give better results and can be reduced without changing the resolution.

Table and image are not integrated with the contents of the manuscript, put after reference or at the end of the manuscript.

Discussion

The discussion section should contain major interpretations from the findings and results in comparison to past studies. The significance of the findings and case presentation should be emphasized in this section against previous findings in the subject area.

This section should evaluate the patient case for accuracy, validity, and uniqueness and compare or contrast the case report with the published literature. The authors should briefly summarize the published literature with contemporary references.

Conclusion

Conclusions section is written in narrative form. This section should conclude the Case reports and how it adds value to the available information. Explain the relevance and significance of their findings to the respective field in a summary briefly. This section is not allowed to write other authors work, as well as information or new terms in the previous section did not exist. Recommendation for further study can be written in this section.

Acknowledgements

Acknowledgement is given to the funding sources of study (donor agency, the contract number, the year of accepting) and those who support that funding. The names of those who support or assist the study are written clearly. Names that have been mentioned as the authors of the manuscripts are not allowed here.

References (14pt, boldface, Capital letter in the beginning of the Word)

Use the most updated references in the last 10 years. Reference is written with Times New Roman font size 11 pt, single space, the distance between the references one enter. The references use the hanging, which is on the second line indented as much as 0.25", right justified. The references only contain articles that have been published, and selected the most relevant to the manuscript. It prefers primary references. The references format follows the "name-years" citation style (APA style 7th edition). All sources in the reference must be referenced in the manuscript and what was in the manuscript should be in this reference. The author should write the family/last name of sources author and year of publication in parentheses use, for example (Potter & Perry, 2006) or Potter and Perry (2006). Write the first author's name and "et al.", if there are three or more authors.

Examples:

Journal

Author, A.A., Author, B.B., & Author, C.C. (year). Article title: Sub-title. *Journal Title*, *volume* (issue number), page numbers.

Wu, S.F.V., Courtney, M., Edward, H., McDowell, J., Shortridge-Baggett, L.M., & Chang, P.J. (2007). Self-efficacy, outcome expectation, and self-care behavior in people with type diabetes in Taiwan. *Journal of Clinical Nursing, 16* (11), 250–257.

References with two or more authors (up to 20 authors) write all author's names. If an article has 21 authors or more, list the first 19 authors, then insert an ellipsis (…) and then the last name and first initials of the last author. Example:

Wolchik, S.A., West, S.G., Sandler, I.N., Tein, J., Coatsworth, D., Lengua, L., Johnson, A., Ito, H., Ramirez, J., Jones, H., Anderson, P., Winkle, S., Short, A., Bergen, W., Wentworth, J., Ramos, P., Woo, L., Martin, B., Josephs, M., … Brown, Z. (2005). *Study of the brain. Psychology Journal, 32* (1), 1–15. doi: 10.1037/1061-4087.45.1.11.

Conference Proceeding

Schnase, J.L., & Cunnius, E.L. (Eds.). (1995). Proceedings from CSCL '95: *The First International Conference on Computer Support for Collaborative Learning*. Erlbaum.

Newspaper (no author's name)

Generic Prozac debuts. (2001, August 3). The Washington Post, pp. E1, E4.

It's subpoena time. (2007, June 8). New York Times. https://www.nytimes.com/2007/06/08/opinion/08fri1.html

Book

Author, A.A. (Year). *Source title: Capital letter in the beginning of the subtitle*. Publisher.

Peterson, S.J., & Bredow, T.S. (2004). *Middle range theories: Application to nursing research*. Lippincott Williams & Wilkins.

Book chapter

Author, A.A. (Year). Chapter title*:* Capital letter in the beginning of the subtitle. In Initial, Surname (Author's name/book editor) (eds), *Book title*. Publisher.

Hybron, D.M. (2008). Philosophy and the science of subjective well-being. In M. Eid & R.J. Larsen (Eds.), *The science of subjective well-being* (pp.17–43). Guilford Press.

Translated book

Ganong, W.F. (2008). *Fisiologi kedokteran* (Ed ke-22). (Petrus A., trans). McGraw Hill Medical. (Original book published 2005).

Thesis/Dissertation

If available in the database

Rockey, R. (2008). An observational study of pre-service teachers' classroom management strategies (Publication No. 3303545) [Doctoral dissertation, Indiana University of Pennsylvania]. ProQuest Dissertations and Theses Global.

Gerena, C. (2015). Positive thinking in dance: The benefits of positive self-talk practice in conjunction with somatic exercises for collegiate dancers [Master's thesis, University of California Irvine]. University of California, Scholarship. https://escholarship.org/uc/item/1t39b6g3

If not published

Last-name, A.A. (year). *Dissertation/thesis title.* (Unpublished doctoral dissertation/master thesis). Institution Name, Location.

Considine, M. (1986). *Australian insurance politics in the 1970s: Two case studies*. (Unpublished doctoral dissertation). University of Melbourne, Melbourne, Australia.

Database Article

Author, A.A., Author, B.B., & Author, C.C. (Year pub). Title of article. *Title of Journal*, Volume (Issue), pp–pp. doi: xx.xxxxxxxx [OR] Retrieved from URL of publication's home page

Borman, W.C., Hanson, M.A., Oppler, S.H., Pulakos, E.D., & White, L.A. (1993). Role of early supervisory experience in supervisor performance. *Journal of Applied Psychology, 78* (8), 443–449. Retrieved from http://www.eric.com/jdlsiejls/ supervisor/early937d

Database article with DOI (Digital Object Identifier)

Brownlie, D. (2007). Toward effective poster presentations: An annotated bibliography. *European Journal of Marketing, 41* (11/12), 1245–1283. doi: 10.1108/03090560710821161.

Other online source

Author, A.A. (year). Title of source. Retrieved from URL of publication's home page

Article from website

Exploring Linguistics. (1999, August 9). Retrieved from http://logos.uoregon.edu/explore/orthography/ chinese.html#tsang

Online article

Becker, E. (2001, August 27). Prairie farmers reap conservation's rewards. *The New York Times*, pp. 12–90. Retrieved from http://www.nytimes.com

Appendices

Appendices are only used when absolutely necessary, placed after the references. If there is more than one attachment/appendix then sorted alphabetically.

Here is an example of a table

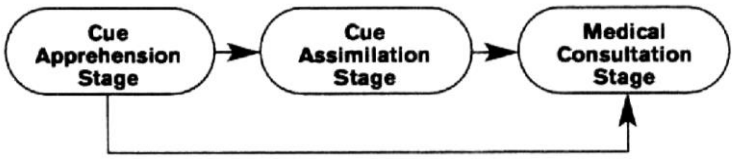
Table 1. The Characteristics of the Respondents (capital letters at the beginning of the word 11 pt, left justify)

(One blank single space line, 10 pt)

Client's Initial	Age	Major Problem
Mr. BN	56	Aggressiveness
Mr. MA	40	Withdrawal
Mr. AS	45	Swing Mood

*table footnotes (if necessary)

Here is an example of an image



(One blank single space line, 10 pt)

Figure 1. The Process of Cardiac Sensitivity Cues (Capital Letters in the Beginning of the Words, 11pt)

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