COVID-19 Prevention Behavior and Quality of Life among University Students Living in Dorms during the COVID-19 Endemic Situation

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ABSTRACT

This study aims to evaluate the COVID-19 prevention behavior and quality of life (QoL) among undergraduate students residing in Nopparat dormitory at Khon Kaen University in Thailand. Additionally, the study identifies the factors related to COVID-19 prevention behavior and QoL during the endemic. The inclusion criteria were Thai undergraduate students enrolled in the first semester of 2023 who currently reside in Nopparat dormitory and are willing to participate. The WINPEPPI program calculated 253 samples, and the data collected was through an online self-administered questionnaire. Descriptive statistics, independent samples t-test, and one-way analysis of variance (ANOVA) were applied for data analysis. The response rate was 99.2%, and most of the sample was female (67.7%), with a mean age of 19.9 (SD 1.4) years old. The study found that 57.4% (95% CI 50.99, 63.52) of participants exhibited a fair level of COVID-19 prevention behaviors, and 84.9% (95% CI 79.68, 88.94) had a good level of QoL during the endemic. The study shows that the perceived social support from friends is significantly related to COVID-19 prevention behavior. Additionally, the presence of underlying illnesses, feelings of sadness, depression, and hopelessness experienced in the last two weeks, perception of receiving advice and care from friends, quality of sleep, and smoking status were related to the level of QoL (p-value < 0.05). This study provides valuable information to improve COVID-19 prevention programs, enhance the quality of life for university students, and significant related factors are recommended for intervention.

Keywords: COVID-19 prevention behavior, Quality of life (qol), University student

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Introduction

The COVID-19 outbreak, which began in December 2019, has escalated into a global health crisis. [1]. This contagious respiratory disease has had a significant impact on health, the economy, and the world community. Despite vaccination efforts, as of September 28, 2022, there have been over 613 million confirmed cases and more than 6.5 million deaths recorded globally. Thailand has reported 4.7 million cases and 32,745 deaths [2]. In a previous study, the prevalence of COVID-19 infection among students and staff at a private university in Bangkok, Thailand, after vaccination was 1.18% [3]. On the other hand, from January to May 2023, the cases of COVID-19 in Khon Kaen increased [4]. According to data from Khon Kaen University in 2022, there are clusters in Muang District and other districts of 200 patients, and more than 100 students tested positive for COVID-19 [5]. The World Health Organization (WHO) recently recognized that COVID-19 has transitioned from a pandemic to an endemic phase [6], which was achieved through preventive measures such as effective vaccination, infection control, and virus transmission management. Preventive behavior, such as vaccination and following health guidelines, is crucial in controlling virus transmission and reducing its impact on society [7].

The recent surge in COVID-19 cases among college students highlights the urgent need to implement effective mitigation strategies to prevent and respond to COVID-19 in university environments and to safeguard the wider community. Further increased the spread of infection. These strategies include ongoing prevention behavior, rapid isolation, and quarantine. University students, as well as the broader society, must follow critical preventive strategies such as vaccination, wearing masks, maintaining physical distance, washing hands regularly, staying home when unwell, taking care of their mental health, and seeking assistance if needed. By adhering to these steps, university students can protect themselves and others from the virus and ensure a better quality of life while at university [8-9].

The term "Quality of Life" (QoL) refers to the general satisfaction and well-being of an individual about their culture, values, aspirations, and concerns [10]. With the sudden emergence of COVID-19, measuring QoL has become crucial in assessing the stressors people face, including psychological issues such as depression, anxiety, and stress. University students are a particularly important target community that needs to be considered for various reasons, including the need for social support during these challenging times [11]. The previous study found that factors related to COVID-19 prevention behavior include social support [12-13], perceiving care from a friend [14], and other influencing factors among the Thai population. Furthermore, the previous study found the factors affecting QoL include underlying disease [15-16], receiving advice and care from friends [17], higher levels of support from family and friends [15], physical health [18-20], stress symptoms [19], quality of sleep [16], and smoking status [16, 21].

This study focuses on university students who reside in dormitories, which are characterized by the diversity that requires attention. Students living in dormitories may live alone or with roommates, and individuals often share facilities such as rooms or bedrooms as well as common areas with others,

such as the restroom, laundry room, and study room [22]. As a result, they are more vulnerable to COVID-19 infection and have a higher likelihood of being diagnosed with COVID-19 transmission. Dormitories are a significant source of virus transmission, affecting both symptomatic and asymptomatic individuals [23]. Understanding students' adherence to preventive behavior can prevent the spread of COVID-19, and the new normal in the academic setting has disrupted the usual personal daily life and academic performance of university students. This consequence of the COVID-19 endemic may considerably impact university students' QoL [15].

It would be beneficial to investigate the COVID-19 prevention practices and quality of life of university students residing in dormitories during the endemic. A literature review identified limited studies on dormitory living among Khon Kaen University students. Therefore, this study used the Health Belief Model (HBM) as a human thought that influences individual behavior to emphasize the importance of perceived susceptibility, severity, benefits, barriers, and self-efficacy in influencing individuals' engagement in preventive behaviors related to COVID-19 and their quality-of-life level [24]. The research information can be utilized to design efficient COVID-19 prevention programs to control the spread among young adults and others and enhance the quality of life of university students living in dormitories at Khon Kaen University and other similar universities.

Objectives of the study

The study aims to evaluate the level of COVID-19 prevention behavior and quality of life among university students who reside in dormitories during the COVID-19 endemic. Additionally, this study examines factors related to COVID-19 prevention behavior and quality of life scores between university students residing in dormitories during the COVID-19 endemic.

Methodology

The study was designed as a descriptive study to gather information about the level of COVID-19 prevention behaviors among Thai undergraduate students living in the Nopparat dormitory area at Khon Kaen University. The target population for this study was 1,926 undergraduate students residing in the Nopparat dormitories, which consist of 9 buildings (5 for females and 4 for males). The inclusion criteria for the study were Thai undergraduate students currently residing at Nopparat dormitories and enrolled in the first semester of 2023 who are willing to participate in the study. However, Thai undergraduates living in the Nopparat dormitories who were ill or had mental health problems were excluded. To determine the necessary sample size, the WINPEPI program was used using the preliminary study information on the level of COVID-19 prevention behaviors. The confidence level was set at 95%, and the acceptable difference was 2.5% of the mean. The assumed coefficient of variation was 0.180 (18.03%), and an expected loss of subjects was set at 20%. Based on these calculations, this study required a sample size of 253 participants.

This study used systematic sampling for 1,926 university students living in 963 rooms (2 beds per room) at Nopparat Dormitory 9 buildings each building has 4 floors, and each floor has 28 rooms. Each building has 112 rooms, and it is available for university students only 107 rooms (another 5 rooms are for the staff and guests). The appropriate interval for samplings was 7.61 (1926/253). The research assigns the students who live in the dorm sampling frame using MS Excel. Then, start at the first sample bed no.11 (a university student's bed owner was sampled), then the next sample was plus sampling interval as 7.61 for the next sample through the 9 buildings. If the selected sampling sample is unavailable, the next participant will be chosen at random to answer the questionnaire.

Tool

Using the conceptual framework, we conducted a self-administered questionnaire that included demographic data, COVID-19 prevention behavior, Quality of Life (QoL), and factors related to COVID-19 prevention behavior and QoL.

As part of COVID-19 prevention measures, a questionnaire was developed comprising 10 positive statements. The questionnaire used a 5-point Likert scale, with "Never" and "Sometimes" being considered negative, and "Often", "Very often", and "Every time" considered as positive. The interpretation of the tool's results was as follows: a mean score of 4.00-5.00 indicated good behavior, 3.00-3.99 indicated fair behavior and a score below 3.00 indicated poor behavior [25]. Additionally, the quality of the COVID-19 prevention behavior questionnaire was found to the content validity index was 1, and its Cronbach's alpha coefficient was 0.77.

Part of measuring the Quality of Life (QoL) involves the 36-item Short Form Health Survey (SF-36) questionnaire, also known as The RAND 36-Item Health Survey (Version 1.0) [26]. This questionnaire assesses various aspects of health, such as Physical functioning, which comprises 10 questions, Role limitations due to physical health problems, consisting of 4 questions, Role limitations due to emotional problems, comprising 3 questions, Energy/fatigue, which consists of 4 questions, Emotional well-being, consisting of 5 questions, social functioning, which includes 2 questions, Bodily Pain, which comprises of 2 questions and General health, which has 5 questions. The scores for each item range from 0 to 100, and a higher score indicates a more favorable health state. A score of over 50% indicates a good level of quality of life than the general population, while an average score of 40-49% indicates a fair level of quality of life than the general population. On the other hand, scores below 40% indicate a poor level of quality of life than the general population [25]. The Cronbach's alpha coefficient of this part of the questionnaire was between 0.71 and 0.99 [26].

Data collection

After obtaining approval from the ethical committee of Khon Kaen University, the data collection process began by creating a QR code, such as a website URL, and producing a gift or souvenir. The next step involved contacting the administrators of the resident hall to acquire their contact information, preparing room lists, and transmitting QR codes to the sample rooms. The data collection from June 1-30, 2023, documented all gifts and souvenirs given to participants. Following a 7-day waiting period, the study resumed by sending notifications to participants through platforms such as Facebook or Line groups. The reactions were tracked, and any problems that occurred were resolved.

Data Analysis

The Statistical Package for Social Sciences (SPSS for Windows) licensed by Khon Kaen University was used for data analysis. To ensure the accuracy of the data entry process, a data check technique was implemented. Descriptive statistics such as frequency, percentage, mean, standard deviation, and 95% confidence interval were used to describe the participants' characteristics, COVID-19 prevention behavior, and Quality of Life (QoL). Bivariate analysis was conducted using t-tests and ANOVA to compare the means of COVID-19 prevention behavior and QoL levels to determine whether there is statistical evidence that the associated population means are significantly different. Additionally, statistically significant results were considered those with p-values less than 0.05.

Ethical consideration

This study was approved by the Ethics Committee for Research on Human Subjects (HE661236) in Human Research for Social/Anthropological Studies, Faculty of Medicine, Khon Kaen University, Thailand.

Results

The research had a response rate of 99.2% (251/253). The study revealed that most of the participants were female (67.7%), and young adults who followed Buddhism (88.0%). They were first-year university students (30.7%) studying in the Faculty of Humanities and Social Sciences (29.5%). Most of the participants came from the Northeastern region of Thailand (Isan) (88.8%). The sample GPA scores ranged from 3.50-4.00 (43.4%), and they spent between 5,000-10,000 Baht/month (53.4%). Additionally, almost three-fourths of their income resources came from their parents (73.3%). (Table 1)

Table 1 Demographic characteristics (n=251)

Demographic characteristics	Number	Percent
Gender		
Male	49	19.5
Female	170	67.7
LGBTQ	32	12.7
Age (Year) Mean 19.89 SD1.358 Median 20 IQR2 min 18 max 26		
Age group		
18-19	103	41.0
20-26	148	59.0
Religion		
Buddhist	221	88.0
Christianity	5	2.0
Islam	5	0.8
None	23	9.2
Duration of study (Year)		
1	77	30.7
2	54	21.5
3	71	28.3
4	41	16.3
5	8	3.2
Faculty		
Humanities and Social Sciences	74	29.5
Khon Kaen Business School	34	13.5
Science	25	10.0
Agriculture	23	9.2
Technology	21	8.4
Computer Science	16	6.4
Education	11	4.4
Engineering	9	3.6
Law	9	3.6
Associated Medical Sciences	5	2.0
Public Health	4	1.6
Economics	4	1.6
Veterinary medicine	3	1.2
Fine and Applied Arts	3	1.2

Table 1 Demographic characteristics (n=251) (Cont.)

Demographic characteristics	Number	Percent
Architecture	3	1.2
Khon Kaen International College	2	0.8
Pharmaceutical science	2	0.8
Nursing	1	0.4
Dentistry	1	0.4
College of Local Administration	1	0.4
GPA		
2.00-2.49	7	2.8
2.50-2.99	36	14.3
3.00-3.49	99	39.4
3.50-4.00	109	43.4
Hometown		
Northeastern region (Isan)	223	88.8
Eastern Region	9	3.6
Southern region	7	2.8
Central Region	5	2.0
Bangkok	4	1.6
Northern region	3	1.2
Income origin		
Parents	184	73.3
Parents, Relatives	36	14.3
Work	31	12.4
Income spent (Baht/month)		
<5,000	97	38.6
5,000-10,000	134	53.4
>10,000	20	8.0

GPA = Grade Point Average; **LGBTQ** = Lesbian, Gay, Bisexual, Transgender, and Queer

COVID-19 Prevention Behavior and level of COVID-19 prevention behaviors

This study found, that good level of COVID-19 prevention behaviors among the participants were: (1) avoiding close contact with individuals infected with COVID-19, (2) getting tested for COVID-19 if any symptoms are suspected, whether by ATK or PCR test, and (3) covering the mouth and nose with a tissue or elbow when coughing or sneezing (as shown in Table 2). The study also revealed that 57.4% (95% CI 50.99, 63.52) of the university students demonstrated a fair level of COVID-19 prevention behavior. (Table 2)

Table 2 COVID-19 prevention behaviors and level of COVID-19 prevention behavior (n=251)

Statement	Mean	SD	Interpretation
Avoid close contact with COVID-19 patients.	4.46	0.88	Good
When symptoms are suspected of being infected with COVID-19, you are tested for COVID-19 (by ATK or PCR test).	4.26	1.01	Good
Cover your mouth and nose. with a tissue or elbow when coughing or sneezing	4.13	1.05	Good
Wear a mask in public	3.87	1.09	Fair
Isolate yourself in your dorm when you feel unwell.	3.52	1.33	Fair
Follow the situation of COVID-19 To get the latest information, advice, and best practices. from the Ministry of Public Health and World Health Organization (WHO)	3.25	1.211	Fair
Wash hands with soap and water or alcohol gel/spray thoroughly for at least 20 seconds.	3.15	1.01	Fair
Avoid large gatherings such as parties or concerts.	2.95	1.11	Poor
Social distance by being at least 1 meter away from others in public places.	2.78	1.03	Poor
Clean and disinfect frequently touched objects and surfaces such as doorknobs or stair railings.	2.58	1.11	Poor
Mean score 3.49 SD 0.60 95%CI 3.43, 3.56 min 1.50 max 5.00			
Level of COVID-19 prevention behavior	**n**	**Percent**	**95% CI**
Good (4.00-5.00)	63	25.1	19.96, 31.02
Fair (3.00-3.99)	144	57.4	50.99, 63.52
Poor (< 3.00)	44	17.5	13.15, 22.93

Quality of life and level of QOL

Based on the study, it was found that university students who lived in dormitories during the COVID-19 endemic had an overall good quality of life. The Physical Functioning dimension scored the highest, whereas the General Health dimension scored the lowest (as shown in Table 3). The study found that 84.9% [95% CI 79.68, 88.94] of university students exhibited a good level of quality of life. (Table 3)

Table 3 Quality of life (n=251)

Items	Mean	SD	Interpretation
Physical functioning	82.9	19.10	Good
Role limitations due to physical health problems	75.0	33.46	Good
Role limitations due to emotional problems	67.0	39.60	Good
Energy/fatigue	70.2	20.69	Good
Emotional well-being	62.0	15.56	Good
Social functioning	82.2	19.79	Good
Bodily Pain	65.0	22.58	Good
General Health	57.4	18.05	Good
Mean score 67.89 SD 14.50 95%CI 66.07,69.60 min 29.33 max 93.92			
Level of Quality of life	**n**	**Percent (%)**	**95% CI**
Good (> 50%)	213	84.9	79.68, 88.94
Fair (40-50%)	30	11.9	8.33, 16.77
Poor (<40%)	8	3.2	1.49, 6.42

Factors related to the level of COVID-19 prevention behaviors.

According to this study, the level of perceived care from a friend was found to be statistically significant in relation to COVID-19 prevention behavior. The university students who reported perceiving care frequently or every time from a friend scored higher in COVID-19 prevention behaviors compared to those who reported perceiving care sometimes or never. (Table 4)

Table 4 Factors related to the level of COVID-19 prevention behaviors (n=251)

Variables	Factors related to the level of COVID-19 prevention behaviors			
	n	Mean	SD	P-value
Gender				
Male	49	3.44	0.67	0.521
Female	170	3.52	0.58	
LGBTQ+	32	3.41	0.52	
Age group				
18-19	103	3.43	0.61	0.195
20-26	148	3.53	0.58	
Years of study				
1st year	77	3.47	0.57	0.629
2nd years	54	3.49	0.67	
3rd years	71	3.44	0.58	
4th years and above	49	3.58	0.56	
Underlying disease				
None	212	3.48	0.60	0.714
Have	39	3.52	0.53	
Sad, depressed, and hopeless the Last 2 weeks				
Never and sometimes	159	3.47	0.57	0.103
Often to every time	92	3.52	0.63	
Perceived psychological from family				
Never and sometimes	39	3.39	0.58	0.812
Often to every time	212	3.51	0.59	
Perceived care from family				
Never and sometimes	16	3.42	0.51	0.497
Often to every time	235	3.49	0.60	
Perceived advice on solving the problem from a friend				
Never and sometimes	27	3.32	0.61	0.153
Often to every time	224	3.51	0.59	
Perceived care from a friend				
Never and sometimes	36	3.21	0.67	0.009*
Often to every time	215	3.54	0.57	

Table 4 Factors related to the level of COVID19 prevention behaviors (n=251) (Cont.)

Variables	Factors related to the level of COVID-19 prevention behaviors			
	n	Mean	SD	P-value
Perceived sympathy from a friend				
Never and sometimes	28	3.41	0.58	0.455
Often to every time	223	3.50	0.59	
Slept well lately				
Never and sometimes	167	3.44	0.59	0.092
Often to every time	84	3.58	0.59	
Oversleep				
Never and sometimes	130	3.46	0.60	0.483
Often to every time	121	3.52	0.58	
Smoking status				
No	237	3.48	0.59	0.258
Yes	14	3.59	0.66	
Drink alcohol				
No	119	3.50	0.62	0.704
Yes	132	3.47	0.57	
Exercise				
No	86	3.46	0.61	0.605
Yes	165	3.50	0.58	

Factors related to the level of QOL.

According to this study, six factors were found to be associated with the quality of life (QOL) among university students who reside in dormitories. These factors include the presence of underlying illnesses, feelings of sadness, depression, and hopelessness experienced in the last two weeks, perception of receiving advice and care from friends, quality of sleep, and smoking status. The statistical significance (p-value < 0.05) of these factors was demonstrated in Table 5

Table 5 Factors related to the level of QOL (n=251)

Variables	Factors related level of QOL			
	n	mean	SD	P-value
Gender				
Male	49	68.60	15.77	0.138
Female	170	71.39	14.43	
LGBTQ+	32	66.15	16.17	
Age group				
Adolescence	103	71.14	15.08	0.397
Young adults	148	69.51	14.92	
Years of study				
1st year	77	70.80	14.48	0.851
2nd years	54	68.64	16.46	
3rd years	71	70.21	14.53	
4th years and above	49	70.86	15.03	
Underlying disease				
None	212	71.19	14.61	0.021*
Have	39	64.67	15.96	
Sad, depressed, and hopeless the Last 2 weeks				
Never and sometimes (good for the health)	159	73.95	14.02	<.001*
Often to every time (bad for the health)	92	63.67	14.42	
Perceived psychological from family				
Never and sometimes (bad for the health)	39	67.33	13.10	0.102
Often to every time (good for the health)	212	70.70	15.27	
Perceived care from family				
Never and sometimes (bad for the health)	16	67.87	15.22	0.539
Often to every time (good for the health)	235	70.34	14.98	
Perceived advice on solving the problem from a friend				
Never and sometimes (bad for the health)	27	65.35	12.76	0.049*
Often to every time (good for the health)	224	70.76	15.15	
Perceived care from a friend				
Never and sometimes (bad for the health)	36	64.98	13.22	0.016*
Often to every time (good for the health)	215	71.05	15.11	

Table 5 Factors related to the level of QOL (n=251) (Cont.)

Variables	Factors related level of QOL			
	n	mean	SD	P-value
Perceived sympathy from a friend				
Never and sometimes (bad for the health)	28	68.32	13.50	0.178
Often to every time (good for the health)	223	70.41	15.17	
Slept well lately				
Never and sometimes (bad for the health)	167	73.22	14.56	<.001*
Often to every time (good for the health)	84	64.13	14.01	
Oversleep				
Never and sometimes (bad for the health)	130	69.85	15.21	0.665
Often to every time (good for the health)	121	70.53	14.78	
Smoking status				
No (good for the health)	237	70.77	14.98	0.005*
Yes (bad for the health)	14	60.25	11.45	
Drink alcohol				
No (good for the health)	119	71.59	15.07	0.159
Yes (bad for the health)	132	68.91	14.85	
Exercise				
No (bad for the health)	86	68.33	15.22	0.162
Yes (good for the health)	165	71.14	14.81	

Discussion

This study was able to achieve a high response rate by using an online self-administration questionnaire. The questionnaire was accessible to university students at their convenience, as free Wi-Fi was available all the time. The dormitories are places where students of different backgrounds, ages, personalities, mindsets, languages, cultures, and religions live together. This study found that most of the university students who lived in the dormitories were female, which is like the findings of Wongprasit et al [27], who found that 81.66% of dormitory residents were female.

COVID-19 prevention behaviors

A study conducted by Manson-Dioso et al (2021) [28] revealed that living in a dormitory or boarding house has a positive impact on a student's academic performance in the Philippines. Students who live independently perform better than those living with their families. However, students living in dormitories often feel like they have no privacy because they share their space with others, and the common areas can be crowded and busy. Additionally, dormitories can be a breeding ground for infectious diseases. In 2021, Baguette et al (2021) [22] found that students who share a bedroom or living space have twice the odds of contracting COVID-19 than those who live alone in the Wisconsin, USA.

This study discovered that the COVID-19 prevention behavior of most university students living in dormitories was at a fair level. However, it was found to be lower than the study conducted among university students in Gondar, Ethiopia [29], where the COVID-19 situation was a pandemic and had poor preventive behavior towards COVID-19, high perceived susceptibility, and participants who were enrolled in health programs. Due to the transition of COVID-19 from a pandemic to an endemic, most university students living in dormitories have been vaccinated and therefore perceive themselves as less at risk. However, some COVID-19 prevention behaviors with the lowest scores were identified, including (1) avoiding large gatherings such as parties or concerts, (2) maintaining social distancing by being at least 1 meter away from others in public places, and (3) cleaning and disinfecting frequently touched objects and surfaces such as doorknobs or stair railings. It is crucial to promote these three points for COVID-19 prevention as part of health education and to increase the perceived risk of COVID-19.

This study revealed that the perceived care from friends is linked to the level of COVID-19 prevention behaviors. According to Barry et al (2006) [30], a friend's behavior is associated with an individual's prosocial goal pursuit, which ultimately leads to prosocial behavior. Similarly, Hailey et al (2023) discovered that high social support was connected to an increased likelihood of sustaining physical activity, and medium social support was linked to increased odds during the COVID-19 pandemic after adjusting for multiple confounders [12].

Quality of life

A recent study examined the quality of life of university students who live in dormitories during the COVID-19 endemic. The study found that overall, the students had a good level of quality of life, with physical functioning being the highest and emotional well-being being the lowest. These results are consistent with a previous study conducted by Ramón-Arbués et al (2022) [16], which found that students had the highest scores in the physical health domain of quality of life, due to this study found that most university students did not have underlying disease, slept well, no smoking, and exercise regularly, while the psychological health domain had the lowest scores. This study found most of the sample had higher support from family and friends. Meanwhile, the psychological health problems

potentially occurred due to living conditions changes became independent living in the university dorm, apart from their parents and following the new normal guidelines in the COVID-19 situation. Furthermore, university student with a fair level of COVID-19 prevention behavior needs more pay attention to the regulation to know the condition of life to reduce their sadness, depression, and hopelessness in university dorms.

This study identified several factors that were significantly related to the quality of life. These include the presence of underlying disease, feelings of sadness, depression, and hopelessness experienced within the last two weeks, perception of receiving advice and care from friends, quality of sleep, and smoking status.

Due to their underlying disease, it was similar to Abdullah et al [15] and Ramón-Arbués et al [16] The impact of illness and underlying disease on the quality of life of university students can decrease the quality of life among university students, affecting their overall health and ability to engage fully in academic and social activities.

This study found that mental health status such as feelings of sadness, depression, and hopelessness associated with quality of life according to Abdullah et al [15] The study found that lower quality of life was linked to psychological factors like increased stress and depression, particularly in areas with high COVID-19 case prevalence.

The perception of receiving advice and care from friends was linked to quality of life. Similar to a study conducted in Malaysia by Abdullah et al. (2020), which revealed that university students with higher levels of social support from friends had a higher quality of life. Support from friends can motivate students and enhance their participation in their studies and enjoy their life [17), and friendships also have substantial benefits for positive psychosocial student experiences [20].

This study found that the quality of sleep was significantly associated with the quality of life, according to Ramón-Arbués et al (2022) [16] University students who have trouble with the quality of sleep might have a lower quality of life and impact able to their study, and Lemma et al (2014) [28] found that the college students with better sleep quality score achieved better on their academic performance.

For smoking status, it was discovered [16, 21] that smoking status was a factor significantly associated with the Quality of Life. Improving prevention and promotion efforts to quit smoking behavior among university students who smoke can positively impact their health and quality of life and promote healthier lifestyles on campuses. [12].

Even though this study was achieving a high response rate, the participants followed the steps set up for data collection, and the use of a QR code for innovation in this study. However, the study had some limitations. The research design used a cross-sectional approach to explore the temporal association of various factors, which aimed to generate a hypothesis for further investigation. Recall bias was identified, wherein the information regarding the last two weeks' activities among university students

was prone to being forgotten. Therefore, the outcome of this study might be generalized in one or more similar groups of sample characteristics.

In conclusion, this study found most university students living in dormitories exhibited a fair level of COVID-19 prevention behaviors and a good level of QoL during the COVID-19 endemic. The study shows that the perceived social support from friends is significantly related to COVID-19 prevention behavior. Additionally, the presence of underlying illnesses, feelings of sadness, depression, and hopelessness experienced in the last two weeks, perception of receiving advice and care from friends, quality of sleep, and smoking status were related to the level of QoL.

Implications

This study results were fruitful information for Khon Kaen University, especially those responsible for the students living in the dormitory health and COVID-19 prevention and control and applying the other context universities.

Recommendations

This study provides valuable insights into the COVID-19 prevention behavior and Quality of Life of university students living in dormitories. It recommends promoting COVID-19 prevention behaviors that are currently at a poor or fair level and suggests intervening in significant related factors. Additionally, the study recommends promoting factors related to the quality of life of university students who reside in dormitories. Finally, future studies should explore university students' prevention behavior using WHO guidelines and new normal recommendations through qualitative studies.

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