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Terima kasih

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The Relationship Between Demographic and Lifestyle Factors with Mental Health Status among Campus Community in Yogyakarta, Indonesia

Comment [rd1]: title need to revis so it more interest you can mention SDGS

Abstract

Background. *Globally, mental health has become a major issue in health development today. Campus communities cannot be separated from the problem of mental health. This study aims to describe the relationship between demographic and lifestyle factors with mental health status in campus communities.*

Method. *This study used a quantitative method with a cross-sectional design. Data collection was conducted through an online survey on 11-30 October 2021 at one of the universities in Yogyakarta. There were 503 respondents consisting of students, lecturers, and education staff. The instrument of mental health was the Self-Reporting Questionnaire-29 (SRQ-29).*

Result. *There were indications of needing referral due to anxiety and depression as much as 33.4%, and there were 5.28% of respondents requiring referral due to psychotic disorders, drugs, and PTSD. Demographic factors associated with mental health status were employment status, gender, and age. Meanwhile, lifestyle aspects that are associated with mental health status are physical activity duration and fruit and vegetable consumption per day. This was indicated by the respective p-values of 0.000 (employment status), 0.042 (gender), 0.027 (age), 0.003 (duration of physical activity), and 0.011 (consumption of fruits and vegetables per day). Furthermore, multivariate analysis showed that the duration of physical activity, as well as fruit and vegetable*

consumption, had a negative linear effect on the incidence of mental health disorders.
Conclusion. The higher the level of physical activity and the greater the intake of fruit and vegetables, the lower the possibility of mental health disorders. *This finding provides baseline data for developing a healthy campus, particularly for mental health programs.*
Keywords**: **mental health**, **demographic factors**, **lifestyle**, **campus community**, **SRQ 29

Introduction

Globally, mental health has been a central issue of health development over the past three decades. Mental health has an intrinsic and instrumental value critical to individual well-being. Complex interactions between stresses and vulnerabilities at individual, community, and structural levels determine mental health (WHO, 2022).Approximately one billion people were experiencing mental health disorders, including 14% of adolescents worldwide, in 2019. Mental illness is the leading cause of disability, affecting one in every six years of life. In 2018, in Indonesia, more than 19 million people over the age of 15 suffered from mental and emotional illness, and more than 12 million people over the age of 15 suffered from depression (Rokom Kemenkes, 2021).

Lifestyle factors are crucial in positively influencing medical conditions, mental health, and the risk of disease, morbidity, and mortality. Measures such as having a healthy diet, participating in physical activity, stopping smoking, and avoiding the consumption of harmful substances have a major impact on mental health status. Achieving a healthy lifestyle includes creating a safe environment, ensuring adequate sleep patterns, managing stress, obtaining social support, and engaging in mentally beneficial activities(Zaman *et al.*, 2019). In addition, factors such as age (Idris & Hasri, 2023; Liu *et al.*, 2023), gender (França *et al.*, 2017; Kim *et al.*, 2022), and employment status (Idris & Hasri, 2023) can also affect mental health.

Mental health disorders can have a significant impact on a person's physical health. People suffering from severe mental illness are more susceptible to physical illnesses such as nutritional and metabolic diseases, cardiovascular diseases, viral diseases, respiratory diseases, musculoskeletal diseases, sexual dysfunction, pregnancy complications andstomatognathic diseases, and may be associated with obesity (De Hert *et al.*, 2011). In addition, some rare mental health disorders, such as somatic symptom disorder, illness-induced anxiety disorder, and conversion disorder, may also affect cognitive function (Razzak *et al.*, 2022). Lifestyle significantly influences a person's mental health, and a healthy lifestyle can help maintain and improve mental health (Yoo & Kim, 2020).This study analysis the relationship between demographic factors and lifestyle with mental health status among the campus community as baseline data to initiate healthy campus.

Method

This study uses an explanatory quantitative method with a cross-sectional design (Swarjana, 2016). The research was conducted at one of the universities in Yogyakarta with the population being students, lecturers, and education staff.-. Data collection was collected through an online survey from 11-21 October 2021. Meanwhile, the research sample was students, lecturers, and employees willing to voluntarily complete questionnaires distributed directly via WhatsApp. Sampling was carried out consecutively and obtained 503 respondents, including 108 lecturers and education staff and 395 students..

Mental health measurement tools using Self-Reporting Questinare-29. This questionnaire consists of 29 questions that the respondents themselves fill in. Mental health status categories are divided into 2, namely need to be referred and do not need to be referred to mental health professionals. The analysis of the questionnaire is as follows: If in questions 1-20 there are at least 5 (five) Yes answers, the respondent should be referred to mental health professionals (psychiatrists, psychologists, general practitioners, and nurses who have been trained in mental health). Meanwhile, for questions 21-29 if there is only 1 (one) Yes answer, then the respondent should be referred to a mental health professional (Kemenkes RI, 2019). Descriptive data analysis using SPSS version 22. This research has received a certificate of ethical feasibility from Respati University Yogyakarta with no: 228.3/FIKES/PL/XI/2021. Analysis was carried out up to multivariate analysis. Univariate analysis uses frequency distribution analysis, bivariate analysis uses the Chi-Square test, and multivariate analysis uses the binominal logistic regression test, provided that the p-value in the bivariate analysis is not more than 0.25 (Sugiyono, 2019).

Comment [rd2]: introduction is lac of information. what correlation to SDGS problem, what relevancy between topic and SDGS ?

how about the health promotion? wh is the correlation to healthy campus, mental health and health promotion

what the major problem in communit particularly life in campus, show the data in Yogyakarta, give explanatio about the condition or the problems Yogyakarta

Comment [rd3]: how many universities as samples? show how selected the respondens?

Result

Description of Demographic Factors and Lifestyle With Mental Health Status

The majority of respondents were university students (78.7%). The average respondent came from the faculties of health, social sciences and economics, and science and technology (99.4%). Female respondents accounted for 80.3%, with an average age range between 17 and 45 years, which is around 94.8%. Most respondents participated in physical activity 1-3 times per week (77.5%) with an activity duration of less than 1 hour (73.6%). Most respondents consumed fruits and vegetables 1-3 times per day (85.1%). A total of 94% of the respondents did not smoke, and among those who smoked, most smoked less than or equal to 5 cigarettes per day (97.6%) with a smoking duration of less than or equal to 5 years (98.2%). Furthermore, about 40% of respondents had anxiety and depression, about 35% had psychotic disorders, and 35.4% had PTSD. There were indications of needing referral due to psychological disorders, as much as 33.4%, and there were 5.28% of respondents requiring referral due to PTSD, drug, and psychotic disorders. A more detailed explanation is presented in Table 1.

Table I. Description of Demographic Factors, Lifestyle, and Mental Health Status of Respondents (N=503)

Variables	n	%
Demographic Factors		
Status		
Students	396	78.7
Lectures and Staff	107	21.3
Faculty		
Non-Faculty (HRD, LPPM)	3	6
Faculty of Public Health, Faculty of Social Science and Economics, Faculty of science & technology	500	99.4
Sex		
Male	99	19.7
Female	404	80.3
Age		
17 – 45 years	477	94.8
46 - 65 years	26	5.2
Lifestyle		
Total of Physical activity (Weeks)		
≤ 3 times	390	77.5
>3 times	113	22.5
Length of physical activity		
≤1 hour	370	73.6
>1 hour	133	26.4
Eat fruits and vegetables (d*ay*)		
≤3 times	428	85.1
>3 times	75	14.9
Smoking		
Yes	30	6
No	473	94
Smoking duration (*Years*)		
>5 Years	8	1.8
≤5 Years	495	98.2
Body mass index (BMI)		
Abnormal	207	41.2
Normal	296	58.8
Mental Health Status		
Anxiety & depression		
Yes	201	40

No	302	60
Drug uses		
Yes	4	0.8
No	499	99.2
Psychotic disorder		
Yes	181	36
No	322	64
Post-Trauma Syndrome Disorder		
Yes	178	35.4
No	325	64.6
Mental Health Status : Anxiety & depression (SRQ 1-20)		
Need to refer	168	33.4
No need to refer	335	66.6
Mental Health Status: Drug, psychotic, PTSD (SRQ 21-29)		
Need to refer	26	5.2
No need to refer	477	94.8

Relationship between Demographic and Lifestyle Factors with Mental Health Status

Demographic factors associated with mental health status (psychological disorders-SRQ 1-20) were employment status, gender, and age. Meanwhile, lifestyle aspects associated with mental health status (psychological disorders-SRQ 1-20) were duration of physical activity, and fruit and vegetable consumption per day. This resultsindicated by the respective p-values of 0.000 (employment status), 0.042 (gender), 0.027 (age), 0.003 (duration of physical activity), and 0.011 (consumption of fruits and vegetables per day). The resultsshown in Table II. Furthermore, the results of bivariate tests between demographic factors, and lifestyle with mental health status for SRQ 21-29 (drugs, psychotic, PTSD) showed that only employment status was associated with mental health (p-value 0Table II. Correlation of Demographic and Lifestyle Factors with Mental Health Status (SRQ 1-20).

Table II. Correlation of Demographic and Lifestyle Factors with Mental Health Status (SRQ 1-20)

Variables	Mental Health Status No. 1-20			*p-value*	PR (95% CI)
	Need to refer	No need to refer	Total		
Job Status					
Students	155 (30.8%)	241 (47.9%)	396 (78.7%)	0.000*	3.22 (1.90-5.44)
Lecturers &Staff	13 (2.6%)	94 (18.7%)	107 (21.3%)		
Faculty					
Non Faculty	0 (0%)	3 (0.6%)	3 (0.6%)		
Faculty of Public Health, Faculty of Social Science and Economics, faculty of science & technology	168 (33.4%)	332 (66%)	500 (99.4%)	0.554	1.50 (1.41-1.60)
Sex					
Male	24 (4.8%)	75 (14.9%)	99 (19.7%)	0.042*	0.68 (0.46-0.98)
Female	144 (28.6%)	260 (51.7%)	404 (80.3%)		
Age					
17 - 45 years	165 (32.8%)	312 (62%)	477 (94.8%)	0.027*	2.99 (1.02-8.75)
46 - 65 years	3 (0.6%)	23 (4.6%)	26 (5.2%)		
Total of Physical activity (Weeks)					
≤ 3 times	135 (26.8%)	255 (50.7%)	390 (77.5%)	0.337	1.185 (0.863-1.629)
>3 times	33 (6.6%)	80 (15.9%)	113 (22.5%)		
Length of physical activity					
≤1 hour	138 (27.4%)	232 (46.1%)	370 (73.6%)	0.003*	1.65 (1.17-2.32)
>1 hour	30 (6%)	103 (20.5%)	133 (26.4%)		
Eat fruits and vegetables (d*ay*)					
≤3 times	153 (30.4%)	275 (54.7%)	428 (85.1%)	0.011*	1.78 (1.11-2.86)
>3 times	15 (3.0%)	60 (11.9%)	75 (14.9%)		
Smoking					
Yes	10 (2%)	20 (4%)	30 (6%)	1.000	1.00 (0.59-1.68)
No	158 (31.4%)	315 (62.6%)	473 (94%)		

Smoking duration (*Years*)					
>5 Years	2 (0.4%)	6 (1.2%)	8 (1.6%)	0.724	0.74 (0.22-2.49)
≤5 Years	166 (33%)	329 (65.4%)	495 (98.4%)		
Body mass index (BMI)					
Abnormal	67 (13.3%)	140 (27.8%)	207 (41.2%)	0.753	0.94 (0.73-1.22)
Normal	101 (20.1%)	195 (38.8%)	296 (58.8%)		

Multivariate Analysis of Demographic and Lifestyle Factors with Mental Health Status

The results of multivariate analysis showed that employment status, gender, and age did not influence mental health in questions 1-20. On the other hand, the duration of physical activity and fruit and vegetable consumption significantly influenced mental health in questions 1-20. Variables tested multivariately must have a p-value ≤ 0.25.. Physical activity and fruit and vegetable consumption each have a ß (beta) value of -0.757 and -0.977. These values indicate a negative linear relationship between physical activity levels and fruit and vegetable intake and the incidence of mental health disorders. From these results, it can be concluded that the higher the level of physical activity and the greater the intake of fruit and vegetables, the lower the possibility of mental health disorders. Thus, physical activity and consumption of fruits and vegetables are preventive or protective factors against mental health disorders. Respondents with physical activity more than 3 times a week have a chance of not experiencing mental health disorders by 0.46 compared to respondents with physical activity less than 3 times a week. Respondents with fruit and vegetable consumption more than 3 times a day have a chance of not experiencing mental health disorders by 0.48 compared to respondents with fruit and vegetable consumption less than 3 times a day. Meanwhile, the multivariate results also showed that the variables of employment status and smoking did not affect mental health status in questions 21-29. A more detailed explanation is shown in Table III below.

Table III. Multivariate Analysis of Demographic and Lifestyle Factors with Mental Health Status

Variables	ß	P value	Exponen (B)/ Odds Ratio
Mental Health Status (SRQ 1-20)			
Job Status	-18.762	0.999	0.000
Sex	0.253	0.376	1.288
Age	-0.039	0.957	0.961
Duration of Physic Activity	-0.757	0.002*	0.469
Eating Fruits & Vegetables	-0.977	0.029*	0.488
Mental Health Status (SRQ 21-29)			
Job Status	18.721	0.999	0.000
Smoking	0.700	0.281	2.014

Discussion

Mental health category No. 1-20 refers to anxiety and depression. In this category, around 40% of the total respondents experienced anxiety and depression, with 33.4% of them needing to be referred for further treatment. The results of this study are in line with the results of research at universities in Bangladesh which states that mental health disorders include "psychologically distressed" relating to the anxiety levels they reported. At the same time, depression (35%) and stress remained (20%)(Gamage & Herath, 2021). Furthermore, mental health in categories No. 21-29 refers to substance use, psychotic disorders, and PTSD. In this category, around 0.8% of respondents showed indications of drug use, 36% experienced psychotic disorders, and 35.4% experienced PTSD, of which 5.2% needed to be referred.

The most significant correlates of positive screening were older age and female gender (Odriozola-González *et al.*, 2020). Various studies have also shown that mental health disorders are more common among students than among workers (lecturers and educational staff) (Odriozola-González *et al.*, 2020; Aziz *et al.*, 2021). Different proportions are also seen in male and female students, possibly due to different responses and perspectives in dealing with problems and pressures from the environment and campus (Rosemary Rizanna, 2019)

This study's results align with Dale et al.'s findings, which show that lifestyle factors such as physical activity are associated with better mental health (Dale *et al.*, 2021). Another study in Switzerland

also stated that loneliness is associated with poor physical and mental health, as well as unhealthy lifestyles (Richard *et al.*, 2017). Other findings from Perret et al.'s research suggest that lifestyle affects levels of resilience, affecting mental health (Perret *et al.*, 2020).

Other studies have also shown that exercise, in general, is associated with better mood and improved quality of life.. The impact of physical health on mental health is well-documented, with many psychological effects, such as self-esteem, cognitive function, mood, depression, and quality of life, remaining the focus of further research. These findings confirm the importance of exercise in improving outcomes for people with mental illness (Mahindru *et al.*, 2023). Lifestyle changes influence changes in mental health. Increased leisure time, activity, and decreased sleep duration are the lifestyle changes most closely associated with changes in mental health (Tanaka *et al.*, 2021).

The results showed that healthy lifestyle choices, such as increasing physical activity, not smoking, and maintaining a regular social rhythm, were associated with improved mental health over 1 year (Velten J *et al.*, 2018). Economic challenges, particularly a sense of despondency, contribute to the increase in mental health issues. Measures such as social distancing and other societal challenges further exacerbate depression within communities, which mostly led people to smoke as stress release during the heath pandemic (Rosemary *et al.*, 2023)

Based on Dharmayani et al.'s research, fruit and vegetable intake is associated with mental health, including reducing the risk of depression (Dharmayani *et al.*, 2021). In healthy adults, vegetable consumption is also associated with psychological health (Tuck *et al.*, 2019). A Japanese study showed that higher fruit and vegetable consumption in middle age was associated with a lower risk of developing major depressive disorder later in life (Narita *et al.*, 2022). Higher fruit and vegetable consumption was also associated with lower levels of psychological distress (Richard *et al.*, 2015), and higher fish, fruit, and vegetable intake was also associated with lower incidence of mood disorders (Huang *et al.*, 2019).

There are many ways to overcome mental health problems, such as a) asking for help because we do not have to face everything alone, talking to people we trust and discussing what the problem is; b) breathing slowly and long. This simple action will reduce anxiety levels; c) eating a healthy and balanced menu because the body needs the energy to overcome stress; d) taking time to relax and do activities that you like; e) exercise regularly; f) doing tasks regularly, not piling up work (Kemenkes RI, 2019).

Expanding access to services, promoting promotive efforts, and increasing public awareness of mental health disorders should be a priority direction of national mental health policy. By not always relying on medical treatment and focusing more on family and community-based care, the welfare of people with mental disorders can certainly be improved (Ridlo & Zein, 2018).

Mental health prevention and control efforts that can be carried out include advocacy and socialization to regents/mayors and DPRDs to make policies that favor the improvement of community mental health; optimizing the role of district/provincial health offices in mental health efforts; increasing the coverage of mental health services in health services; building effective partnerships with non-governmental organizations, professional organizations, the private sector, by forming community mental health teams in provinces, districts/cities; encouraging family and community empowerment in mental health efforts; and developing mental health information systems through various surveys and research (Kemenkes RI, 2019).

Conclusion

Factors such as gender, age, physical activity, and fruit and vegetable consumption were associated with mental health psychological problems). Employment status is also associated with mental health in some aspects, namely in mental health No. 1-20 and 21-29. The variable length of physical activity affects mental health. It is necessary to implement prevention and treatment programs for mental health disorders, such as anxiety and depression, especially among university students. This finding provides baseline data for developing a healthy campus, particularly for mental health programs. The program, e.g. increasing health literacy related to mental health, campaigns to increase physical activity, fruit and vegetable consumption, and avoiding smoking, are needed to help improve mental health status. In addition, advocate university leaders to create healthy campus regulations, provide mental health counselling, collaborate with the health office for further treatment, and ensure the program's sustainability.

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Kepada: Jurnal Promkes <jurnal.promkes@gmail.com>

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Opportunity for a Healthy Campus Program as a Sustainable Development Goal: Assessing Lifestyle Factor and Mental Health Status

Abstract

Background. *Globally, mental health has become a major issue in health development today. Campus communities cannot be separated from the problem of mental health. This study aims to describe the relationship between demographic and lifestyle factors with mental health status in campus communities.*

Method. *This study used a quantitative method with a cross-sectional design. Data collection was conducted through an online survey on 11-30 October 2021 at one of the universities in Yogyakarta. There were 503 respondents consisting of students, lecturers, and education staff. The instrument of mental health was the Self-Reporting Questionnaire-29 (SRQ-29).*

Result. *There were indications of needing referral due to anxiety and depression as much as 33.4%, and there were 5.28% of respondents requiring referral due to psychotic disorders, drugs, and PTSD. Demographic factors associated with mental health status were job status, sex, and age. Meanwhile, lifestyle aspects that are associated with mental health status are physical activity duration and fruit and vegetable consumption per day. This was indicated by the respective p-values of 0.000 (job status), 0.042 (sex), 0.027 (age), 0.003 (duration of physical activity), and 0.011 (consumption of fruits and vegetables per day). Furthermore, multivariate analysis showed that the duration of physical activity, as well as fruit and vegetable consumption, had a negative linear effect on the incidence of mental health disorders.*

Conclusion.*The main findings provide baseline data for developing healthy campuses as part of sustainable development goals (SDGs), particularly for mental health programs.*

Keywords: mental health, lifestyle, healthy campus, sustainable development goals (SDGs)

Introduction

Globally, mental health has been a central issue of health development over the past three decades. Mental health has an intrinsic and instrumental value critical to individual well-being. Mental health issues are a global goal of the third sustainable development goal (SDGs) to ensure healthy lives and promote the well-being of people of all ages (Tenaga *et al.*, 2022). Complex interactions between stresses and vulnerabilities at individual, community, and structural levels determine mental health (WHO, 2022). Approximately one billion people were experiencing mental health disorders, including 14% of adolescents worldwide, in 2019. Mental illness is the leading cause of disability, affecting one in every six years of life. In 2018, in Indonesia, more than 19 million people over the age of 15 suffered from mental and emotional illness, and more than 12 million people over the age of 15 suffered from depression (Rokom Kemenkes, 2021). One in ten Indonesians experience mental emotional disorders. The number of people with mental disorders in Yogyakarta is the highest in Indonesia (Kemenkes RI, 2018). One in three Indonesian adolescents experience mental health problems (Gloriabarus, 2022). There have been five recorded incidents of suicide experienced by students in Yogyakarta throughout 2023 . The series of suicides experienced by students in Yogya this year is partly due to the increase in mental health disorders during the COVID-19 pandemic. During the pandemic, students are also mostly participating in online learning, making it very rare for them to interact directly with their friends or lecturers. Because they have no one to talk to, many of them choose to keep their problems to themselves.This leads to increased boredom and stress experienced by students, and in more severe situations can experience depression (Kumparan, 2023).

Lifestyle factors are crucial in positively influencing medical conditions, mental health, and the risk of disease, morbidity, and mortality. Measures such as having a healthy diet, participating in physical activity, stopping smoking, and avoiding the consumption of harmful substances have a major impact on mental health status. Achieving a healthy lifestyle includes creating a safe environment, ensuring adequate sleep patterns, managing stress, obtaining social support, and engaging in mentally beneficial activities(Zaman *et al.*, 2019). In addition, factors such as age (Idris

& Hasri, 2023; Liu *et al.*, 2023), gender (França *et al.*, 2017; Kim *et al.*, 2022), and employment status (Idris & Hasri, 2023) can also affect mental health.
Mental health disorders can have a significant impact on a person's physical health. People suffering from severe mental illness are more susceptible to physical illnesses such as nutritional and metabolic diseases, cardiovascular diseases, viral diseases, respiratory diseases, musculoskeletal diseases, sexual dysfunction, pregnancy complications andstomatognathic diseases, and may be associated with obesity (De Hert *et al.*, 2011). In addition, some rare mental health disorders, such as somatic symptom disorder, illness-induced anxiety disorder, and conversion disorder, may also affect cognitive function (Razzak *et al.*, 2022). Lifestyle significantly influences a person's mental health, and a healthy lifestyle can help maintain and improve mental health (Yoo & Kim, 2020).

Health promotion is an approach to improving public health that requires broad participation. It can be understood as action and advocacy to address the full range of potentially modifiable determinants of health, including actions that enable people to adopt and maintain healthy lifestyles and those that create living conditions and environments that support health (Boxer, 2005). Mental health promotion is an integral part of health promotion theory and practice. Interventions can be applied at the population, subpopulation and individual levels, and across settings and sectors within and beyond the health sector (Singh *et al.*, 2022). Mental health promotion focuses on helping people to acquire the knowledge and skills they need to promote and protect their own mental well-being, while simultaneously working to create positives in our shared social environment that benefit us all (Kalra *et al.*, 2012). A healthy campus is part of a health promotion program and mental health is one of the issues of a healthy campus.This study analysis the relationship between demographic factors and lifestyle with mental health status among the campus community as baseline data to initiate healthy campus.

Method
This study uses an explanatory quantitative method with a cross-sectional design (Swarjana, 2016). The research was conducted at one of the universities in Yogyakarta with the population being students, lecturers, and education staff. The campus that became the research location is one of the universities in Indonesia that won a research grant on developing a healthy campus from the Ministry of Health of the Republic of Indonesia in August 2021. Data collection was collected through an online survey from 11-21 October 2021. Meanwhile, the research sample was students, lecturers, and employees willing to voluntarily complete questionnaires distributed directly via WhatsApp. Sampling was carried out consecutively and obtained 503 respondents, including 108 lecturers and education staff and 395 students.
Mental health measurement tools using Self-Reporting Questinare-29. This questionnaire consists of 29 questions that the respondents themselves fill in. Mental health status categories are divided into 2, namely need to be referred and do not need to be referred to mental health professionals. The analysis of the questionnaire is as follows: If in questions 1-20 there are at least 5 (five) Yes answers, the respondent should be referred to mental health professionals (psychiatrists, psychologists, general practitioners, and nurses who have been trained in mental health). Meanwhile, for questions 21-29 if there is only 1 (one) Yes answer, then the respondent should be referred to a mental health professional (Kemenkes RI, 2019). Descriptive data analysis using SPSS version 22. This research has received a certificate of ethical feasibility from Respati University Yogyakarta with no: 228.3/FIKES/PL/XI/2021. Analysis was carried out up to multivariate analysis. Univariate analysis uses frequency distribution analysis, bivariate analysis uses the Chi-Square test, and multivariate analysis uses the binominal logistic regression test, provided that the p-value in the bivariate analysis is not more than 0.25 (Sugiyono, 2019).

Result
Description of Demographic Factors and Lifestyle With Mental Health Status
The majority of respondents were university students (78.7%). The average respondent came from the faculties of health, social sciences and economics, and science and technology (99.4%). Female respondents accounted for 80.3%, with an average age range between 17 and 45 years, which is around 94.8%. Most respondents participated in physical activity 1-3 times per week (77.5%) with an activity duration of less than 1 hour (73.6%). Most respondents consumed fruits and vegetables 1-3

times per day (85.1%). A total of 94% of the respondents did not smoke, and among those who smoked, most smoked less than or equal to 5 cigarettes per day (97.6%) with a smoking duration of less than or equal to 5 years (98.2%). Furthermore, about 40% of respondents had anxiety and depression, about 35% had psychotic disorders, and 35.4% had PTSD. There were indications of needing referral due to psychological disorders, as much as 33.4%, and there were 5.28% of respondents requiring referral due to PTSD, drug, and psychotic disorders. A more detailed explanation is presented in Table 1.

Table I. Description of Demographic Factors, Lifestyle, and Mental Health Status of Respondents (N=503)

Variables	n	%
Demographic Factors		
Status		
Students	396	78.7
Lectures and Staff	107	21.3
Faculty		
Non-Faculty (HRD, LPPM)	3	6
Faculty of Public Health, Faculty of Social Science and Economics, Faculty of science & technology	500	99.4
Sex		
Male	99	19.7
Female	404	80.3
Age		
17 – 45 years	477	94.8
46 - 65 years	26	5.2
Lifestyle		
Total of Physical activity (Weeks)		
≤ 3 times	390	77.5
>3 times	113	22.5
Length of physical activity		
≤1 hour	370	73.6
>1 hour	133	26.4
Eat fruits and vegetables (d*ay*)		
≤3 times	428	85.1
>3 times	75	14.9
Smoking		
Yes	30	6
No	473	94
Smoking duration (*Years*)		
>5 Years	8	1.8
≤5 Years	495	98.2
Body mass index (BMI)		
Abnormal	207	41.2
Normal	296	58.8
Mental Health Status		
Anxiety & depression		
Yes	201	40
No	302	60
Drug uses		
Yes	4	0.8
No	499	99.2
Psychotic disorder		
Yes	181	36
No	322	64

Post-Trauma Syndrome Disorder		
Yes	178	35.4
No	325	64.6
Mental Health Status : Anxiety & depression (SRQ 1-20)		
Need to refer	168	33.4
No need to refer	335	66.6
Mental Health Status: Drug, psychotic, PTSD (SRQ 21-29)		
Need to refer	26	5.2
No need to refer	477	94.8

Relationship between Demographic and Lifestyle Factors with Mental Health Status

Demographic factors associated with mental health status (psychological disorders-SRQ 1-20) were employment status, gender, and age. Meanwhile, lifestyle aspects associated with mental health status (psychological disorders-SRQ 1-20) were duration of physical activity, and fruit and vegetable consumption per day. This resultsindicated by the respective p-values of 0.000 (job status), 0.042 (gender), 0.027 (age), 0.003 (duration of physical activity), and 0.011 (consumption of fruits and vegetables per day). The resultsshown in Table II. Furthermore, the results of bivariate tests between demographic factors, and lifestyle with mental health status for SRQ 21-29 (drugs, psychotic, PTSD) showed that only employment status was associated with mental health (p-value 0Table II. Correlation of Demographic and Lifestyle Factors with Mental Health Status (SRQ 1-20).

Table II. Correlation of Demographic and Lifestyle Factors with Mental Health Status (SRQ 1-20)

Variables	**Mental Health Status No. 1-20**			***p-value***	**PR (95% CI)**
	Need to refer	No need to refer	Total		
Job Status					
Students	155 (30.8%)	241 (47.9%)	396 (78.7%)	0.000*	3.22 (1.90-5.44)
Lecturers &Staff	13 (2.6%)	94 (18.7%)	107 (21.3%)		
Faculty					
Non Faculty	0 (0%)	3 (0.6%)	3 (0.6%)	0.554	1.50 (1.41-1.60)
Faculty of Public Health, Faculty of Social Science and Economics, faculty of science & technology	168 (33.4%)	332 (66%)	500 (99.4%)		
Sex					
Male	24 (4.8%)	75 (14.9%)	99 (19.7%)	0.042*	0.68 (0.46-0.98)
Female	144 (28.6%)	260 (51.7%)	404 (80.3%)		
Age					
17 - 45 years	165 (32.8%)	312 (62%)	477 (94.8%)	0.027*	2.99 (1.02-8.75)
46 - 65 years	3 (0.6%)	23 (4.6%)	26 (5.2%)		
Total of Physical activity (Weeks)					
≤ 3 times	135 (26.8%)	255 (50.7%)	390 (77.5%)	0.337	1.185 (0.863-1.629)
>3 times	33 (6.6%)	80 (15.9%)	113 (22.5%)		
Length of physical activity					
≤1 hour	138 (27.4%)	232 (46.1%)	370 (73.6%)	0.003*	1.65 (1.17-2.32)
>1 hour	30 (6%)	103 (20.5%)	133 (26.4%)		
Eat fruits and vegetables (d*ay*)					
≤3 times	153 (30.4%)	275 (54.7%)	428 (85.1%)	0.011*	1.78 (1.11-2.86)
>3 times	15 (3.0%)	60 (11.9%)	75 (14.9%)		
Smoking					
Yes	10 (2%)	20 (4%)	30 (6%)	1.000	1.00 (0.59-1.68)
No	158 (31.4%)	315 (62.6%)	473 (94%)		
Smoking duration (*Years*)					
>5 Years	2 (0.4%)	6 (1.2%)	8 (1.6%)	0.724	0.74 (0.22-2.49)
≤5 Years	166 (33%)	329 (65.4%)	495 (98.4%)		
Body mass index (BMI)					
Abnormal	67 (13.3%)	140 (27.8%)	207 (41.2%)	0.753	0.94 (0.73-1.22)
Normal	101 (20.1%)	195 (38.8%)	296 (58.8%)		

Multivariate Analysis of Demographic and Lifestyle Factors with Mental Health Status

The results of multivariate analysis showed that employment status, gender, and age did not influence mental health in questions 1-20. On the other hand, the duration of physical activity and fruit and vegetable consumption significantly influenced mental health in questions 1-20. Variables tested multivariately must have a p-value ≤ 0.25. Physical activity and fruit and vegetable consumption each have a β (beta) value of -0.757 and -0.977. These values indicate a negative linear relationship between physical activity levels and fruit and vegetable intake and the incidence of mental health disorders. From these results, it can be concluded that the higher the level of physical activity and the greater the intake of fruit and vegetables, the lower the possibility of mental health disorders. Thus, physical activity and consumption of fruits and vegetables are preventive or protective factors against mental health disorders. Respondents with physical activity more than 3 times a week have a chance of not experiencing mental health disorders by 0.46 compared to respondents with physical activity less than 3 times a week. Respondents with fruit and vegetable consumption more than 3 times a day have a chance of not experiencing mental health disorders by 0.48 compared to respondents with fruit and vegetable consumption less than 3 times a day. Meanwhile, the multivariate results also showed that the variables of employment status and smoking did not affect mental health status in questions 21-29. A more detailed explanation is shown in Table III below.

Table III. Multivariate Analysis of Demographic and Lifestyle Factors with Mental Health Status

Variables	β	P value	Exponen (B)/ Odds Ratio
Mental Health Status (SRQ 1-20)			
Job Status	-18.762	0.999	0.000
Sex	0.253	0.376	1.288
Age	-0.039	0.957	0.961
Duration of Physic Activity	-0.757	0.002*	0.469
Eating Fruits & Vegetables	-0.977	0.029*	0.488
Mental Health Status (SRQ 21-29)			
Job Status	18.721	0.999	0.000
Smoking	0.700	0.281	2.014

Discussion

The SDGs are global and national commitments in an effort to improve the welfare of society, including 17 global goals and targets for 2030 declared by both developed and developing countries at the UN General Assembly in September 2015. The 17 goals are: (1) No Poverty; (2) No Hunger; (3) Healthy and Prosperous Lives; (4) Quality Education; (5) Gender Equality; (6) Clean Water and Sanitation; (7) Clean and Affordable Energy; (8) Decent Work and Economic Growth; (9) Industry, Innovation and Infrastructure; (10) Reduced Inequalities; (11) Sustainable Cities and Settlements; (12) Responsible Consumption and Production; (13) Addressing Climate Change; (14) Ocean Ecosystems; (15) Land Ecosystems; (16) Peace, Justice and Resilient Institutions; (17) Partnerships for the Goals (Bapenas, 2023).
Improving the mental health of the campus community is part of the third SDGS goal, which is to ensure healthy lives and improve the well-being of people of all ages. The mental health program is one of the healthy campus programs at the university. The Sustainable Development Goals (SDGs) is a global development agenda to end poverty, improve well-being, and protect the planet, through the achievement of 17 goals by 2030(Tenaga *et al.*, 2022).

The results showed that mental health category No. 1-20 refers to anxiety and depression. In this category, around 40% of the total respondents experienced anxiety and depression, with 33.4% of

them needing to be referred for further treatment. The results of this study are in line with the results of research at universities in Bangladesh which states that mental health disorders include "psychologically distressed" relating to the anxiety levels they reported. At the same time, depression (35%) and stress remained (20%)(Gamage & Herath, 2021). Furthermore, mental health in categories No. 21-29 refers to substance use, psychotic disorders, and PTSD. In this category, around 0.8% of respondents showed indications of drug use, 36% experienced psychotic disorders, and 35.4% experienced PTSD, of which 5.2% needed to be referred.

The most significant correlates of positive screening were older age and female gender (Odriozola-González *et al.*, 2020). Various studies have also shown that mental health disorders are more common among students than among workers (lecturers and educational staff) (Odriozola-González *et al.*, 2020; Aziz *et al.*, 2021). Different proportions are also seen in male and female students, possibly due to different responses and perspectives in dealing with problems and pressures from the environment and campus (Rosemary Rizanna, 2019)
This study's results align with Dale et al.'s findings, which show that lifestyle factors such as physical activity are associated with better mental health (Dale *et al.*, 2021). Another study in Switzerland also stated that loneliness is associated with poor physical and mental health, as well as unhealthy lifestyles (Richard *et al.*, 2017). Other findings from Perret et al.'s research suggest that lifestyle affects levels of resilience, affecting mental health (Perret *et al.*, 2020).

Other studies have also shown that exercise, in general, is associated with better mood and improved quality of life.. The impact of physical health on mental health is well-documented, with many psychological effects, such as self-esteem, cognitive function, mood, depression, and quality of life, remaining the focus of further research. These findings confirm the importance of exercise in improving outcomes for people with mental illness (Mahindru *et al.*, 2023). Lifestyle changes influence changes in mental health. Increased leisure time, activity, and decreased sleep duration are the lifestyle changes most closely associated with changes in mental health (Tanaka *et al.*, 2021).
The results showed that healthy lifestyle choices, such as increasing physical activity, not smoking, and maintaining a regular social rhythm, were associated with improved mental health over 1 year (Velten J *et al.*, 2018). Economic challenges, particularly a sense of despondency, contribute to the increase in mental health issues. Measures such as social distancing and other societal challenges further exacerbate depression within communities, which mostly led people to smoke as stress release during the heath pandemic (Rosemary *et al.*, 2023)

Based on Dharmayani et al.'s research, fruit and vegetable intake is associated with mental health, including reducing the risk of depression (Dharmayani *et al.*, 2021). In healthy adults, vegetable consumption is also associated with psychological health (Tuck *et al.*, 2019). A Japanese study showed that higher fruit and vegetable consumption in middle age was associated with a lower risk of developing major depressive disorder later in life (Narita *et al.*, 2022). Higher fruit and vegetable consumption was also associated with lower levels of psychological distress (Richard *et al.*, 2015), and higher fish, fruit, and vegetable intake was also associated with lower incidence of mood disorders (Huang *et al.*, 2019).
There are many ways to overcome mental health problems, such as a) asking for help because we do not have to face everything alone, talking to people we trust and discussing what the problem is; b) breathing slowly and long. This simple action will reduce anxiety levels; c) eating a healthy and balanced menu because the body needs the energy to overcome stress; d) taking time to relax and do activities that you like; e) exercise regularly; f) doing tasks regularly, not piling up work (Kemenkes RI, 2019).

Expanding access to services, promoting promotive efforts, and increasing public awareness of mental health disorders should be a priority direction of national mental health policy. By not always relying on medical treatment and focusing more on family and community-based care, the welfare of people with mental disorders can certainly be improved (Ridlo & Zein, 2018).
Mental health prevention and control efforts that can be carried out include advocacy and socialization to regents/mayors and DPRDs to make policies that favor the improvement of

community mental health; optimizing the role of district/provincial health offices in mental health efforts; increasing the coverage of mental health services in health services; building effective partnerships with non-governmental organizations, professional organizations, the private sector, by forming community mental health teams in provinces, districts/cities; encouraging family and community empowerment in mental health efforts; and developing mental health information systems through various surveys and research (Kemenkes RI, 2019).

The key to successful prevention and treatment of mental health problems is to increase and optimize preventive, curative, and rehabilitative efforts. This can be done by encouraging university leaders to implement a healthy campus program. In addition, early detection of mental health problems in the campus environment needs to be intensified. The implementation of a healthy campus can be strengthened through regulations such as a healthy campus provost's decree. In addition, partnerships with health centers and hospitals must be established for further treatment of campus residents with mental health problems.

Conclusion

Factors such as gender, age, physical activity, and fruit and vegetable consumption were associated with mental health condition (anxiety and drepesion). Job status is also associated with mental health problem both psychological nor substance use, psychotic disorders, and PTSD. The variable length of physical activity affects mental health condition. It is necessary to implement prevention and treatment programs for mental health disorders, such as anxiety and depression, especially among university students. This finding provides baseline data for developing a healthy campus, particularly for mental health programs. The program, e.g. increasing health literacy related to mental health, campaigns to increase physical activity, fruit and vegetable consumption, and avoiding smoking, are needed to help improve mental health status. In addition, advocate university leaders to create healthy campus regulations, provide mental health counselling, collaborate with the health office for further treatment, and ensure the program's sustainability.

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Opportunity for a Healthy Campus Program as a Sustainable Development Goal: Assessing Lifestyle Factor and Mental Health Status

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Abstract

Background*. Globally, mental health has become a major issue in health development today. Campus communities cannot be separated from the problem of mental health. This study aims to*

describe the relationship between demographic and lifestyle factors with mental health status in campus communities.
***Method**. This study used a quantitative method with a cross-sectional design. Data collection was conducted through an online survey on 11-30 October 2021 at one of the universities in Yogyakarta. There were 503 respondents consisting of students, lecturers, and education staff. The instrument of mental health was the Self-Reporting Questionnaire-29 (SRQ-29).*
***Result**. There were indications of needing referral due to anxiety and depression as much as 33.4%, and there were 5.28% of respondents requiring referral due to psychotic disorders, drugs, and PTSD. Demographic factors associated with mental health status were job status, sex, and age. Meanwhile, lifestyle aspects that are associated with mental health status are physical activity duration and fruit and vegetable consumption per day. This was indicated by the respective p-values of 0.000 (job status), 0.042 (sex), 0.027 (age), 0.003 (duration of physical activity), and 0.011 (consumption of fruits and vegetables per day). Furthermore, multivariate analysis showed that the duration of physical activity, as well as fruit and vegetable consumption, had a negative linear effect on the incidence of mental health disorders.*
***Conclusion**. The main findings provide baseline data for developing healthy campuses as part of sustainable development goals (SDGs), particularly for mental health programs.*

Keywords: mental health, lifestyle, healthy campus, sustainable development goals (SDGs)

Introduction

Globally, mental health has been a central issue of health development over the past three decades. Mental health has an intrinsic and instrumental value critical to individual well-being. Mental health issues are a global goal of the third sustainable development goal (SDGs) to ensure healthy lives and promote the well-being of people of all ages (Tenaga *et al.*, 2022). Complex interactions between stresses and vulnerabilities at individual, community, and structural levels determine mental health (WHO, 2022). Approximately one billion people were experiencing mental health disorders, including 14% of adolescents worldwide, in 2019. Mental illness is the leading cause of disability, affecting one in every six years of life. In 2018, in Indonesia, more than 19 million people over the age of 15 suffered from mental and emotional illness, and more than 12 million people over the age of 15 suffered from depression (Rokom Kemenkes, 2021). One in ten Indonesians experience mental and emotional disorders. The number of people with mental disorders in Yogyakarta is the highest in Indonesia (Kemenkes RI, 2018). One in three Indonesian adolescents experiences mental health problems (Gloriabarus, 2022). There have been five recorded incidents of suicide experienced by students in Yogyakarta throughout 2023. The series of suicides experienced by students in Yogya this year is partly due to the increase in mental health disorders during the COVID-19 pandemic. During the pandemic, students are also mostly participating in online learning, making it very rare for them to interact directly with their friends or lecturers. Because they have no one to talk to, many of them choose to keep their problems to themselves.This leads to increased boredom and stress experienced by students, and in more severe situations can experience depression (Kumparan, 2023).

Lifestyle factors are crucial in positively influencing medical conditions, mental health, and the risk of disease, morbidity, and mortality. Measures such as having a healthy diet, participating in physical activity, stopping smoking, and avoiding the consumption of harmful substances have a major impact on mental health status. Achieving a healthy lifestyle includes creating a safe environment, ensuring adequate sleep patterns, managing stress, obtaining social support, and engaging in mentally beneficial activities(Zaman *et al.*, 2019). In addition, factors such as age (Idris & Hasri, 2023; Liu *et al.*, 2023), gender (França *et al.*, 2017; Kim *et al.*, 2022), and employment status (Idris & Hasri, 2023) can also affect mental health.

Mental health disorders can have a significant impact on a person's physical health. People suffering from severe mental illness are more susceptible to physical illnesses such as nutritional and metabolic diseases, cardiovascular diseases, viral diseases, respiratory diseases, musculoskeletal diseases, sexual dysfunction, pregnancy complications, and stomatognathic diseases, and may be associated with obesity (De Hert *et al.*, 2011). In addition, some rare mental health disorders, such as somatic symptom disorder, illness-induced anxiety disorder, and conversion disorder, may also

affect cognitive function (Razzak *et al.*, 2022). Lifestyle significantly influences a person's mental health, and a healthy lifestyle can help maintain and improve mental health (Yoo & Kim, 2020).

Health promotion is an approach to improving public health that requires broad participation. It can be understood as action and advocacy to address the full range of potentially modifiable determinants of health, including actions that enable people to adopt and maintain healthy lifestyles and those that create living conditions and environments that support health (Boxer, 2005). Mental health promotion is an integral part of health promotion theory and practice. Interventions can be applied at the population, subpopulation, and individual levels, and across settings and sectors within and beyond the health sector (Singh *et al.*, 2022). Mental health promotion focuses on helping people acquire the knowledge and skills they need to promote and protect their mental well-being, while simultaneously working to create positives in our shared social environment that benefit us all (Kalra *et al.*, 2012). A healthy campus is part of a health promotion program and mental health is one of the issues of a healthy campus. This study analyzes the relationship between demographic factors and lifestyle with mental health status among the campus community as baseline data to initiate a healthy campus.

Method

This study uses an explanatory quantitative method with a cross-sectional design (Swarjana, 2016). The research was conducted at one of the universities in Yogyakarta with the population being students, lecturers, and education staff. The campus that became the research location is one of the universities in Indonesia that won a research grant on developing a healthy campus from the Ministry of Health of the Republic of Indonesia in August 2021. Data collection was collected through an online survey from 11-21 October 2021. Meanwhile, the research sample was students, lecturers, and employees willing to voluntarily complete questionnaires distributed directly via WhatsApp. Sampling was carried out consecutively and obtained 503 respondents, including 108 lecturers and education staff and 395 students.

Mental health measurement tools using Self-Reporting Questinare-29. This questionnaire consists of 29 questions that the respondents themselves fill in. Mental health status categories are divided into 2, namely need to be referred and do not need to be referred to mental health professionals. The analysis of the questionnaire is as follows: If in questions 1-20 there are at least 5 (five) Yes answers, the respondent should be referred to mental health professionals (psychiatrists, psychologists, general practitioners, and nurses who have been trained in mental health). Meanwhile, for questions 21-29 if there is only 1 (one) Yes answer, then the respondent should be referred to a mental health professional (Kemenkes RI, 2019). Descriptive data analysis using SPSS version 22. This research has received a certificate of ethical feasibility from Respati University Yogyakarta with no: 228.3/FIKES/PL/XI/2021. Analysis was carried out up to multivariate analysis. Univariate analysis uses frequency distribution analysis, bivariate analysis uses the Chi-Square test, and multivariate analysis uses the binominal logistic regression test, provided that the p-value in the bivariate analysis is not more than 0.25 (Sugiyono, 2019).

Result

Description of Demographic Factors and Lifestyle With Mental Health Status

The majority of respondents were university students (78.7%). The average respondent came from the faculties of health, social sciences and economics, and science and technology (99.4%). Female respondents accounted for 80.3%, with an average age range between 17 and 45 years, which is around 94.8%. Most respondents participated in physical activity 1-3 times per week (77.5%) with an activity duration of less than 1 hour (73.6%). Most respondents consumed fruits and vegetables 1-3 times per day (85.1%). A total of 94% of the respondents did not smoke, and among those who smoked, most smoked less than or equal to 5 cigarettes per day (97.6%) with a smoking duration of less than or equal to 5 years (98.2%). Furthermore, about 40% of respondents had anxiety and depression, about 35% had psychotic disorders, and 35.4% had PTSD. There were indications of needing referral due to psychological disorders, as much as 33.4%, and there were 5.28% of respondents requiring referral due to PTSD, drug, and psychotic disorders. A more detailed explanation is presented in Table 1.

Table I. Description of Demographic Factors, Lifestyle, and Mental Health Status of Respondents (N=503)

Variables	n	%
Demographic Factors		
Job Status		
Students	396	78.7
Lectures and Staff	107	21.3
Faculty		
Non-Faculty (HRD, LPPM)	3	6
Faculty of Public Health, Faculty of Social Science and Economics, Faculty of science & technology	500	99.4
Sex		
Male	99	19.7
Female	404	80.3
Age		
17 – 45 years	477	94.8
46 - 65 years	26	5.2
Lifestyle		
Total of Physical activity (Weeks)		
≤ 3 times	390	77.5
>3 times	113	22.5
Length of physical activity		
≤1 hour	370	73.6
>1 hour	133	26.4
Eat fruits and vegetables (d*ay*)		
≤3 times	428	85.1
>3 times	75	14.9
Smoking		
Yes	30	6
No	473	94
Smoking duration (*Years*)		
>5 Years	8	1.8
≤5 Years	495	98.2
Body mass index (BMI)		
Abnormal	207	41.2
Normal	296	58.8
Mental Health Status		
Anxiety & depression		
Yes	201	40
No	302	60
Drug uses		
Yes	4	0.8
No	499	99.2
Psychotic disorder		
Yes	181	36
No	322	64
Post-Trauma Syndrome Disorder		
Yes	178	35.4
No	325	64.6
Mental Health Status : Anxiety & depression (SRQ 1-20)		
Need to refer	168	33.4
No need to refer	335	66.6
Mental Health Status:		

Drug, psychotic, PTSD (SRQ 21-29)		
Need to refer	26	5.2
No need to refer	477	94.8

Relationship between Demographic and Lifestyle Factors with Mental Health Status

Demographic factors associated with mental health status (psychological disorders-SRQ 1-20) were employment status, gender, and age. Meanwhile, lifestyle aspects associated with mental health status (psychological disorders-SRQ 1-20) were duration of physical activity, and fruit and vegetable consumption per day. This resultsindicated by the respective p-values of 0.000 (job status), 0.042 (gender), 0.027 (age), 0.003 (duration of physical activity), and 0.011 (consumption of fruits and vegetables per day). The results are shown in Table II. Furthermore, the results of bivariate tests between demographic factors, and lifestyle with mental health status for SRQ 21-29 (drugs, psychotic, PTSD) showed that only job status was associated with mental health (p-value 0,000).

Table II. Correlation of Demographic and Lifestyle Factors with Mental Health Status (SRQ 1-20)

Variables	**Mental Health Status No. 1-20**			***p-value***	**PR (95% CI)**
	Need to refer	No need to refer	Total		
Job Status					
Students	155 (30.8%)	241 (47.9%)	396 (78.7%)	0.000*	3.22 (1.90-5.44)
Lecturers &Staff	13 (2.6%)	94 (18.7%)	107 (21.3%)		
Faculty					
Non Faculty	0 (0%)	3 (0.6%)	3 (0.6%)	0.554	1.50 (1.41-1.60)
Faculty of Public Health, Faculty of Social Science and Economics, faculty of science & technology	168 (33.4%)	332 (66%)	500 (99.4%)		
Sex					
Male	24 (4.8%)	75 (14.9%)	99 (19.7%)	0.042*	0.68 (0.46-0.98)
Female	144 (28.6%)	260 (51.7%)	404 (80.3%)		
Age					
17 - 45 years	165 (32.8%)	312 (62%)	477 (94.8%)	0.027*	2.99 (1.02-8.75)
46 - 65 years	3 (0.6%)	23 (4.6%)	26 (5.2%)		
Total of Physical activity (Weeks)					
≤ 3 times	135 (26.8%)	255 (50.7%)	390 (77.5%)	0.337	1.185 (0.863-1.629)
>3 times	33 (6.6%)	80 (15.9%)	113 (22.5%)		
Length of physical activity					
≤1 hour	138 (27.4%)	232 (46.1%)	370 (73.6%)	0.003*	1.65 (1.17-2.32)
>1 hour	30 (6%)	103 (20.5%)	133 (26.4%)		
Eat fruits and vegetables (d*ay*)					
≤3 times	153 (30.4%)	275 (54.7%)	428 (85.1%)	0.011*	1.78 (1.11-2.86)
>3 times	15 (3.0%)	60 (11.9%)	75 (14.9%)		
Smoking					
Yes	10 (2%)	20 (4%)	30 (6%)	1.000	1.00 (0.59-1.68)
No	158 (31.4%)	315 (62.6%)	473 (94%)		
Smoking duration (*Years*)					
>5 Years	2 (0.4%)	6 (1.2%)	8 (1.6%)	0.724	0.74 (0.22-2.49)
≤5 Years	166 (33%)	329 (65.4%)	495 (98.4%)		
Body mass index (BMI)					
Abnormal	67 (13.3%)	140 (27.8%)	207 (41.2%)	0.753	0.94 (0.73-1.22)
Normal	101 (20.1%)	195 (38.8%)	296 (58.8%)		

Multivariate Analysis of Demographic and Lifestyle Factors with Mental Health Status

The results of multivariate analysis showed that employment status, gender, and age did not influence mental health in questions 1-20. On the other hand, the duration of physical activity and fruit and vegetable consumption significantly influenced mental health in questions 1-20. Variables tested multivariately must have a p-value ≤ 0.25. Physical activity and fruit and vegetable consumption each have a β (beta) value of -0.757 and -0.977. These values indicate a negative linear relationship between physical activity levels and fruit and vegetable intake and the incidence

of mental health disorders. From these results, it can be concluded that the higher the level of physical activity and the greater the intake of fruit and vegetables, the lower the possibility of mental health disorders. Thus, physical activity and consumption of fruits and vegetables are preventive or protective factors against mental health disorders. Respondents with physical activity more than 3 times a week have a chance of not experiencing mental health disorders by 0.46 compared to respondents with physical activity less than 3 times a week. Respondents with fruit and vegetable consumption more than 3 times a day have a chance of not experiencing mental health disorders by 0.48 compared to respondents with fruit and vegetable consumption less than 3 times a day. Meanwhile, the multivariate results also showed that the variables of employment status and smoking did not affect mental health status in questions 21-29. A more detailed explanation is shown in Table III below.

Table III. Multivariate Analysis of Demographic and Lifestyle Factors with Mental Health Status

Variables	Β	P value	Exponen (B)/ Odds Ratio
Mental Health Status (SRQ 1-20)			
Job Status	-18.762	0.999	0.000
Sex	0.253	0.376	1.288
Age	-0.039	0.957	0.961
Duration of Physic Activity	-0.757	0.002*	0.469
Eating Fruits & Vegetables	-0.977	0.029*	0.488
Mental Health Status (SRQ 21-29)			
Job Status	18.721	0.999	0.000
Smoking	0.700	0.281	2.014

Discussion

The SDGs are global and national commitments to improve the welfare of society, including 17 global goals and targets for 2030 declared by both developed and developing countries at the UN General Assembly in September 2015. The 17 goals are (1) No Poverty; (2) No Hunger; (3) Healthy and Prosperous Lives; (4) Quality Education; (5) Gender Equality; (6) Clean Water and Sanitation; (7) Clean and Affordable Energy; (8) Decent Work and Economic Growth; (9) Industry, Innovation and Infrastructure; (10) Reduced Inequalities; (11) Sustainable Cities and Settlements; (12) Responsible Consumption and Production; (13) Addressing Climate Change; (14) Ocean Ecosystems; (15) Land Ecosystems; (16) Peace, Justice and Resilient Institutions; (17) Partnerships for the Goals (Bapenas, 2023). Improving the mental health of the campus community is part of the third SDGS goal, which is to ensure healthy lives and improve the well-being of people of all ages. The mental health program is one of the healthy campus programs at the university. The Sustainable Development Goals (SDGs) is a global development agenda to end poverty, improve well-being, and protect the planet, through the achievement of 17 goals by 2030(Tenaga *et al.*, 2022).

The results showed that mental health category No. 1-20 refers to anxiety and depression. In this category, around 40% of the total respondents experienced anxiety and depression, with 33.4% of them needing to be referred for further treatment. The results of this study are in line with the results of research at universities in Bangladesh which states that mental health disorders include "psychological distress" relating to the anxiety levels they reported. At the same time, depression (35%) and stress remained (20%)(Gamage & Herath, 2021). Furthermore, mental health in categories No. 21-29 refers to substance use, psychotic disorders, and PTSD. In this category, around 0.8% of respondents showed indications of drug use, 36% experienced psychotic disorders, and 35.4% experienced PTSD, of which 5.2% needed to be referred.

The most significant correlates of positive screening were older age and female gender (Odriozola-González *et al.*, 2020). Various studies have also shown that mental health disorders are more common among students than among workers (lecturers and educational staff) (Odriozola-González *et al.*, 2020; Aziz *et al.*, 2021). Different proportions are also seen in male and female students,

possibly due to different responses and perspectives in dealing with problems and pressures from the environment and campus (Rosemary Rizanna, 2019)
This study's results align with Dale et al.'s findings, which show that lifestyle factors such as physical activity are associated with better mental health (Dale *et al.*, 2021). Another study in Switzerland also stated that loneliness is associated with poor physical and mental health, as well as unhealthy lifestyles (Richard *et al.*, 2017). Other findings from Perret et al.'s research suggest that lifestyle affects levels of resilience, affecting mental health (Perret *et al.*, 2020).

Other studies have also shown that exercise, in general, is associated with better mood and improved quality of life. The impact of physical health on mental health is well-documented, with many psychological effects, such as self-esteem, cognitive function, mood, depression, and quality of life, remaining the focus of further research. These findings confirm the importance of exercise in improving outcomes for people with mental illness (Mahindru *et al.*, 2023). Lifestyle changes influence changes in mental health. Increased leisure time, activity, and decreased sleep duration are the lifestyle changes most closely associated with changes in mental health (Tanaka *et al.*, 2021).
The results showed that healthy lifestyle choices, such as increasing physical activity, not smoking, and maintaining a regular social rhythm, were associated with improved mental health over 1 year (Velten J *et al.*, 2018). Economic challenges, particularly a sense of despondency, contribute to the increase in mental health issues. Measures such as social distancing and other societal challenges further exacerbate depression within communities, which mostly led people to smoke as stress release during the heath pandemic (Rosemary *et al.*, 2023)

Based on Dharmayani et al.'s research, fruit and vegetable intake is associated with mental health, including reducing the risk of depression (Dharmayani *et al.*, 2021). In healthy adults, vegetable consumption is also associated with psychological health (Tuck *et al.*, 2019). A Japanese study showed that higher fruit and vegetable consumption in middle age was associated with a lower risk of developing major depressive disorder later in life (Narita *et al.*, 2022). Higher fruit and vegetable consumption was also associated with lower levels of psychological distress (Richard *et al.*, 2015), and higher fish, fruit, and vegetable intake was also associated with lower incidence of mood disorders (Huang *et al.*, 2019).
There are many ways to overcome mental health problems, such as a) asking for help because we do not have to face everything alone, talking to people we trust and discussing what the problem is; and b) breathing slowly and long. This simple action will reduce anxiety levels; c) eating a healthy and balanced menu because the body needs the energy to overcome stress; d) taking time to relax and do activities that you like; e) exercise regularly; f) doing tasks regularly, not piling up work (Kemenkes RI, 2019).

Expanding access to services, promoting promotive efforts, and increasing public awareness of mental health disorders should be a priority direction of national mental health policy. By not always relying on medical treatment and focusing more on family and community-based care, the welfare of people with mental disorders can certainly be improved (Ridlo & Zein, 2018).
Mental health prevention and control efforts that can be carried out include advocacy and socialization to regents/mayors and DPRDs to make policies that favor the improvement of community mental health; optimizing the role of district/provincial health offices in mental health efforts; increasing the coverage of mental health services in health services; building effective partnerships with non-governmental organizations, professional organizations, the private sector, by forming community mental health teams in provinces, districts/cities; encouraging family and community empowerment in mental health efforts; and developing mental health information systems through various surveys and research (Kemenkes RI, 2019).

The key to successful prevention and treatment of mental health problems is to increase and optimize preventive, curative, and rehabilitative efforts. This can be done by encouraging university leaders to implement a healthy campus program. In addition, early detection of mental health problems in the campus environment needs to be intensified. The implementation of a healthy campus can be strengthened through regulations such as a healthy campus provost's decree.

In addition, partnerships with health centers and hospitals must be established for further treatment of campus residents with mental health problems.

Conclusion

Factors such as gender, age, physical activity, and fruit and vegetable consumption were associated with mental health conditions (anxiety and depression). Job status is also associated with mental health problems both psychological and substance use, psychotic disorders, and PTSD. The variable length of physical activity affects mental health conditions. It is necessary to implement prevention and treatment programs for mental health disorders, such as anxiety and depression, especially among university students. This finding provides baseline data for developing a healthy campus, particularly for mental health programs. The program, e.g. increasing health literacy related to mental health, campaigns to increase physical activity, fruit and vegetable consumption, and avoiding smoking, are needed to help improve mental health status. In addition, advocate university leaders to create healthy campus regulations, provide mental health counseling, collaborate with the health office for further treatment, and ensure the program's sustainability.

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Tahap 5: Letter of Acceptence : 28 Desember 2023

Jurnal Promkes <jurnal.promkes@gmail.com> 28 Desember 2023 pukul 11.46
Kepada: Heni Trisnowati <heni.trisnowati@pascakesmas.uad.ac.id>

Dear Author,

Kami telah menerima dokumen penerimaan atas naskah Anda

Berikut kami lampirkan Letter of Acceptance

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LETTER OF ACCEPTANCE (LoA)

Menyatakan bahwa artikel yang berjudul:

Opportunity for a Healthy Campus Program as a Sustainable Development Goal: Assessing Lifestyle Factor and Mental Health Status

Nama penulis : Heni Trisnowati*, Rika Yulianti Fitri, Rizanna Rosemary, Ariyanto Nugroho

telah diterima sebagai salah satu artikel yang akan dimuat dalam Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education Volume 12 Special Issue 1 Januari tahun 2024.

Surabaya, 28 Desember 2023
Pimpinan Redaksi

JURNAL PROMKES

Oedojo Soedirham, dr., M.PH., M.A., Ph.D

*) Corresponding author

Semoga dapat digunakan dengan baik

Terima kasih atas kontribusinya

[Kutipan teks disembunyikan]

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Tahap 6. Artikel Terbit 26 Januari 2024

Jurnal Promkes <jurnal.promkes@gmail.com> 23 Januari 2024 pukul 11.30
Kepada: Heni Trisnowati <heni.trisnowati@pascakesmas.uad.ac.id>

Dear Author,

Melalui email ini kami lampirkan galley proof atas naskah Anda

Silakan dicek khususnya di bagian nama dan afiliasi

Jika ada perubahan atau revisi mohon membalas pesan ini dengan menyertakan bagian yang harus diubah

Konfirmasi kami tunggu paling lambat Kamis, 25 Januari 2024

Jika melewati batas waktu tersebut kami anggap tidak ada perubahan, sebab naskah akan dipublikasikan di tanggal 26 Januari 2024

Terima kasih

[Kutipan teks disembunyikan]

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Heni Trisnowati <heni.trisnowati@pascakesmas.uad.ac.id> 24 Januari 2024 pukul 08.55
Kepada: Jurnal Promkes <jurnal.promkes@gmail.com>

Dear Editor Jurnal Promkes,

Afiliasi untuk semua penulis sudah benar

Salam sehat,
Dr. Heni Trisnowati, SKM., MPH
Postgraduate Program of Public Health
Faculty of Public Health Universitas Ahmad Dahlan (UAD)
Jl. Prof. DR. Soepomo Sh, Umbulharjo Yogyakarta Indonesia

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Opportunity for a Healthy Campus Program as a Sustainable Development Goal: Assessing Lifestyle Factor and Mental Health Status

ABSTRACT