



DETERMINANTS OF MENTAL HEALTH OF FISHERMEN IN COASTAL AREAS

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ABSTRACT

Mental health is an aspect of health that is increasingly receiving global attention because of its significant impact on individual and community health problems. Mental health disorders have increased in coastal areas in the last 5 years. Mental health challenges are becoming increasingly complex in the most dominant jobs in coastal regions, such as in the profession of fishermen. In addition, there are still many people who experience mental disorders. This study aims to analyze fishermen's mental health determinants in the Coastal Area. This study uses a quantitative research type with a cross-sectional design. This study was conducted by interviewing using a questionnaire. The population in this study consisted of fishermen in the coastal area of Mesjid Raya District, especially MNS Keude, with as many as 456 fishermen. The sampling method used simple random sampling with a sample size of 82 respondents. Data were collected using a validated questionnaire. The results showed that there was a most dominant relationship between the number of children >2 (OR = 48.17; 95% CI = 1.68-1377.66; $p = 0.024$), moderate fatigue level (OR = 26.57; 95% CI = 1.59-444.89; $p = 0.023$) and age (OR = 0.66; 95% CI = 0.44-0.99; $p = 0.049$) most dominantly related to mental health disorders in fishermen in coastal areas. Fishermen who have more than two children are the most dominant factor in mental health problems.

Keywords: coastal areas; fishermen; mental health issues

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INTRODUCTION

Mental health is an aspect of health that is increasingly receiving global attention because of its significant impact on the quality of life of individuals and communities. Currently, mental health is one of the essential contributors to the burden of disease and disability worldwide. Five of the 10 leading causes of disability worldwide are mental health problems. The burden of mental health disorders on health and productivity has long been ignored (Khotimah & Nainggolan, 2019). According to the World Bank (2019), it shows that in the last three years between 2017 and 2019, there was a fluctuation: in 2017, it was 9.2%; in 2018, it was 9.3%; and in 2019, it was 9.2%; while in Indonesia it was 2.4% per 100,000 population of people in the world committed suicide due to mental disorders. The incidence of suicide was higher in men over the last three years than in women, although there was a decrease of 2%, from 12.8% in 2017 to 12.6% in 2019. While in women, the incidence of suicide from 2017-2019 was 5.7% per 100,000 female population in the world. Mental health disorders in adult workers are estimated to be as high as 20% of the population. In the United States, it is estimated that more than 40 million people have some mental health disorder and of that number, 4-5 million adults are considered seriously mentally ill (Wahlbeck et al., 2010).

There has been an increase in mental disorders in Indonesia from 2013-2018. Based on Riskesdas (2013), it is known that 6.0% of the prevalence of mental disorders in the adult

population and based on Riskesdas (2018), 9.8% of the prevalence of mental disorders in the adult population. When viewed based on occupation, mental disorders occur more in fishermen at 10.8% compared to those who are still in school, as self-employed, private employees, farmers/farm laborers, laborers/drivers/housemaids (Riskesdas, 2018). At the same time, mental health disorders in Aceh Province are 9.0%. Mental disorders in Aceh Province have increased significantly from 2013-2018. Based on Riskesdas (2013), it is known that 6.6% of the prevalence of mental disorders in the adult population is known, while based on Riskesdas (2018), the prevalence of mental disorders in the adult population is 9.0%. When viewed based on occupation, mental disorders occur more in the work of Farmers/farm laborers, as much as 11.44%. Moreover, fishermen, as much as 7.67% compared to those still in school, are self-employed, private employees, laborers/drivers/housemaids (Riskesdas Aceh, 2018). Aceh Besar, as much as 2.6% experience mental disorders (Riskesdas Aceh, 2018). The impact of mental health disorders can cause difficulty sleeping (Fitriah & Hariyono, 2019), impaired appetite, disrupted interactions with others (Dianovinina, 2018), lack of productivity and economic and needs constraints, even resulting in suicide (Santoso et al., 2018).

Coastal areas considered urban usually consist of large cities or metropolitan areas located on or near the coast. The existence of ports, trade centers, dense infrastructure, and diverse economic activities are the characteristics of cities in coastal areas. In urban areas of Indonesia, mental health disorders, according to Riskesdas data, have increased from 2013-2018, in Riskesdas (2013), by 6.4%, while in Riskesdas (2018), by 9.8%. While in Aceh, 7.94% experienced mental health disorders in 2018 (Riskesdas Aceh, 2018). The most dominant job in coastal areas is the profession of fishermen; in the profession of fishermen, mental health challenges become increasingly complex. Fishermen often spend quite a long time at sea, facing isolation, high work pressure, and uncertainty in the marine environment (Patriani et al., 2022). In addition, health problems experienced by coastal fishermen include skin diseases caused by factors such as length of service and personal hygiene (Y. Kasiadi et al., 2019). Some types of skin diseases experienced by fishermen include psoriasis, leprosy or Hansen's, dermatitis, scabies, tinea versicolor, smallpox and others. The most common skin problems found include abrasion of the epidermis layer, skin becoming rough, dry, scaly and usually on the hands and feet (Fahira & Susilawati, 2022). Skin diseases experienced by fishermen are caused by a lack of personal hygiene, skin sensitivity to seawater, bites from marine animals and exposure to sunlight (Fitriani & Kurniati, 2022).

The impact will cause very high prolonged mental health disorders until the weather conditions improve again; the global climate phenomenon causes ocean waves to be challenging to predict, so fishermen experience obstacles in sailing to catch fish (Mulyatun, 2019). Mental health disorders can be experienced by fishermen, in addition to weather conditions; this impact will also affect the condition of families who have income through fishing from fishermen. It will affect the surrounding community; due to poor demographic conditions, fishermen will experience a loss of income, while the community will experience obstacles to daily needs (Sørensen et al., 2022). Based on Vallis (2016), it shows that the high level of mental health disorders in the results of his research. However, the study was conducted with an 18-hour shift schedule, so the results may not be replicated in other shift workers. Another consideration is the lack of comprehensive data on the prevalence of mental disorders among fishermen. This leads to a limited understanding of the mental health conditions of fishermen. Another finding based on research by Michalopoulos et al. (2016), shows that fishermen often work in remote areas with limited access to mental health services. The study touches on this aspect but does not provide comprehensive solutions or specific interventions to improve access to mental health services.

Fishermen are identical to coastal areas because their profession is often related to maritime activities such as shipping, fishing, and sea trade. Thus, coastal areas become a natural and relevant environment for fishermen's daily activities. The coastal area of Mesjid Raya District, especially in Mns Keude Village, is a place for shipping activities with 456 fishermen. Based on data from the Aceh Besar Health Office in 2024, there has been an increase in mental disorders over the past 3 years; namely, in 2022, there were 74 patients; in 2023, there were 77 patients, while in 2024, there were 79 patients. In addition, only a few studies have linked mental health to fishermen. Therefore, this study will analyze the determinants of the mental health of fishermen in communities in the Coastal Area. However, to date, only a few studies have linked mental health to fishermen. Most of the existing studies tend to focus on physical health disorders or working conditions of fishermen without considering mental health aspects in depth. Therefore, there is a significant research gap in understanding the determinants of mental health in fishermen (K. Kasiadi et al., 2019; Patriani, 2022). This study aims to analyze the determinants of the mental health of fishermen in the coastal area of Mesjid Raya District to fill this gap and provide a more comprehensive insight into fishermen's mental health..

METHOD

This study uses a quantitative research type with a cross-sectional design. The population in this study were residents who had worked as fishermen for >15 years in the coastal area of Mesjid Raya District, especially MNS Keude, totaling 456 fishermen. The sampling method used simple random sampling with a sample size of 82 respondents in this study. Data were collected using a validated questionnaire. This study used a logistic regression test to test the research hypothesis.

RESULT

Table 1.
Respondent characteristics

Variables	f	%	Mean (SD)	Min-Max
Age			43,89 (6,55)	27-56
Education Status				
Middle	36	43,00		
Low	46	56,10		
Ownership of Social Security Administration Agency				
Yes	82	100,0		
Marital Status				
Married/ Living Together	76	92,68		
Not married yet	5	6,10		
Divorced/Separated/Widowed	1	1,22		
Years of Service			18,59 (6,13)	5-25
Length of Working			12 (0)	12-12
Boat Ownership				
Yes	66	80,49		
No	16	19,51		
Total Income			95.853 (19996)	50.000-140.000
Fatigue Level				
Mild Fatigue	56	68,29		
Moderate Fatigue	26	31,71		
Social Support				
Support	46	56,10		
Does not Support	36	43,90		
Blood Pressure				
No Hypertension	64	78,05		
Hypertension	18	21,95		

Variables	f	%	Mean (SD)	Min-Max
Smoking Status				
No.	6	7,32		
Yes	76	92,68		
Use of Personal Protective Equipment (PPE)				
Complete	30	36,59		
Incomplete	52	63,41		
Number of children				
<2	52	63,41		
>2	30	36,59		
Mental Health Disorders				
Normal	58	70,73		
Abnormal	24	29,27		

Table 1 shows that the average age of fishermen is 44 years, and the education status is mostly low, at 56.10%. All fishermen have BPJS. Most fishermen are married/living together at 92.68%, with an average work period of 17 years and a working day of 12 hours. Fishermen who own boats account for 80.49% of the total, with an average daily income of 95,000. Fishermen have a mild fatigue level of 68.29%. The social support that supports fishermen is 56.10%. Fishermen who do not have hypertension are 78.05%. Most fishermen are active smokers, as many as 92.68%. Fishermen who do not use PPE while working are 63.41%. The number of fishermen's children is more than <2 children, and most fishermen do not have mental disorders, as many as 70.73%.

Table 2.
Bivariate factors associated with mental health disorders in fishermen

Variables	Mental Health Disorders						OR	95% CI	P-value*
	Normal			Abnormal					
	f	%	Mean (SD)	f	%	Mean (SD)			
Age			45,81 (5,15)			39,25 (7,31)	0,84	0,76- 0,92	0,000 1
Education Status									
Middle	26	72,22		10	27,78				
Low	32	69,57		14	30,43		1,14	0,43- 2,98	0,793
Ownership of Social Security Administration Agency									
Yes	58	70,73		24	29,27		<i>omitted</i>	<i>omitted</i>	<i>omitted</i>
Marital Status									
Married/ Living Together	57	75,00		19	25,00				
Not married yet	0	0,00		5	100,0		<i>empty</i>	<i>empty</i>	<i>empty</i>
Divorced/Separated/Widowed	1	100,0		0	0,00		<i>empty</i>	<i>empty</i>	<i>empty</i>
Years of Service			20,55 (4,19)			13,83 (7,45)	0,83	0,76- 0,91	0,000 1
Length of Working			12 (0)			12 (0)	<i>empty</i>	<i>empty</i>	<i>empty</i>
Boat Ownership									
Yes	52	78,79		14	21,21				
No	6	37,50		10	65,50		6,19	1,92- 19,98	0,002
Total Income			103.275 (12479)			77916 (23401)	0,99	0,99- 1,00	0,000 1
Fatigue Level									
Mild Fatigue	51	91,07		5	8,93				
Moderate Fatigue	7	26,92		19	73,08		27,69	7,83- 97,87	0,000 1

Variables	Mental Health Disorders						OR	95% CI	P-value*
	Normal			Abnormal					
	f	%	Mean (SD)	f	%	Mean (SD)			
Social Support									
Support	40	86,96		6	13,04				
Does not Support	18	50,00		18	50,00		6,67	2,27-19,60	0,001
Blood Pressure									
No Hypertension	53	82,81		11	17,19				
Hypertension	5	27,78		13	72,22		12,52	3,70-42,38	0,0001
Smoking Status									
No	1	16,67		5	83,33				
Yes	57	75,00		19	25,00		0,07	0,01-0,61	0,016
Use of Personal Protective Equipment (PPE)									
Complete	28	93,33		2	6,67				
Incomplete	30	57,69		22	42,31		10,27	2,20-47,71	0,003
Number of children									
≤2	41	98,85		11	21,15		0,83	0,76-0,91	0,0001
>2	17	56,67		13	43,33		2,85	1,07-7,61	0,037

*Uji regresi logistik

Table 2 shows that several factors are significantly related to the mental health of fishermen in coastal areas, including age, length of service, income, level of fatigue, social support, hypertension, smoking status, use of personal protective equipment (PPE), and number of children. Older fishermen who have a more extended working period, have a higher income, smoke, and use complete PPE tend to have better mental health. Conversely, the risk of mental disorders increases in fishermen with moderate fatigue, do not receive social support, suffer from hypertension, do not smoke, do not use complete PPE, and have more than two children. Factors such as education, marital status, BPJS ownership, and length of work per day did not show a significant relationship with mental conditions. These findings emphasize the importance of attention to social, physical, and work environment aspects to improve fishermen's mental well-being.

Table 3.
Factors related to mental health disorders in fishermen

Variables	Model 1		Model 2	
	AOR (95% CI)	p-value	AOR (95% CI)	P-value*
Age	0,81 (0,65-1,020)	0,072	0,66 (0,44-0,99)	0,049
Years of Service	1,19 (0,90-1,59)	0,229	1,35 (0,79-2,32)	0,275
Boat Ownership				
Yes				
No	0,05 (0,01-2,26)	0,125	0,01 (1,16-281,20)	0,349
Total Income	0,99 (0,99-1,00)	0,006	0,99 (0,99-1,00)	0,201
Number of children				
≤2				
>2	5,47 (1,34-22,38)	0,018	48,17 (1,68-1377,66)	0,024
Smoking Status				
No				
Yes			0,04 (0,01-24,26)	0,291
Blood Pressure				
No Hypertension				
Hypertension			8,03 (0,22-290,09)	0,255

Variables	Model 1		Model 2	
	AOR (95% CI)	p-value	AOR (95% CI)	P-value*
Social Support				
Support				
Does not Support			2,03 (0,17-24,26)	0,575
Fatigue Level				
Mild Fatigue				
Moderate Fatigue			26,57 (1,59-444,89)	0,023
Use of Personal Protective Equipment (PPE)				
Complete				
Incomplete			6,94 (0,39-122,40)	0,186
Pseudo R2	0,4045		0,7366	

* Uji regresi logistik berganda

Table 3 shows that in the first model that groups socio-economic variables, income is the most dominant factor related to fishermen's mental health, where the higher the income, the lower the risk of mental disorders. In addition, the number of children also has a significant effect, where fishermen with more than two children are five times more likely to experience mental health disorders. This model explains the relationship of 40.45% to mental health. Meanwhile, in the second model that includes health and social support variables, the number of children remains the dominant factor, with a risk of up to 48 times, followed by moderate fatigue levels that increase the risk 27 times. This model has a higher explanatory power, namely 73.66%, indicating that the combination of variables in this group substantially contributes to the mental health conditions of fishermen.

DISCUSSION

Relationship Between Age and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above show that the average age of fishermen with normal mental health is higher, which is 46 years, while those with abnormal health are 39 years. The results of the statistical test obtained an OR value of 0.84. This means that the higher the age of the fishermen, the lower the mental health disorders in fishermen. The statistical test results obtained a p-value of 0.0001, which means there is a significant relationship between age and the mental health of fishermen in coastal areas. This study aligns with Nurliasari et al. (2023), showing a relationship between age and mental health. The p-value was 0.031 (<0.05); younger workers are more susceptible to experiencing work stress. Older fishermen generally have more work experience, so they are more accustomed to the challenges of the job and are better able to manage stress. This experience helps them develop effective coping strategies for stress (Muktamar et al., 2023). According to the researcher's assumption based on events in the field, fishermen are especially older. This means that they have been working for a long time and are used to the challenges that may occur at sea, so they are no longer afraid, even when it rains.

Relationship between Educational Status and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above show that fishermen with mental health disorders are higher in low education status by 30.43%. At the same time, normal mental health is higher in secondary education status by 72.22%. The results of the statistical test obtained an OR value of 1.14. This means that fishermen with low education do not have a risk of mental health disorders. The statistical test results obtained a p-value of 0.793, meaning there is no significant relationship between education status and mental health in fishermen in coastal areas. This study is in line with Sutikno (2015), showing that there is no relationship between education and mental health. With p-value: 0.402. Fishermen's work relies more on practical skills gained through experience than formal education. Skills such as navigation, fishing, and

equipment maintenance are usually learned in the field and do not require high formal education (Goodyear, 2021).

Fishermen often rely on local and traditional knowledge passed down from generation to generation. This knowledge is usually not taught in the formal education system, but is crucial to their success and well-being in their work (Saputra et al., 2023). According to the researcher's assumption, education in the area is only low and middle education. The absence of a relationship is caused by other factors such as length of service, low and middle education both work for 12 hours.

Relationship between Ownership of Social Security Administration Bodies and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that all fishermen have BPJS, fishermen with normal mental health have more Social Security Administering Bodies, which is 70.73%. The results of the statistical test are empty. This means that fishermen with ownership of Social Security Administering Bodies are not related to mental health at all. According to the researcher's assumption. In Aceh, almost all people have Social Security Administering Bodies. So there is no comparison between those who do not have Social Security Administering Bodies in this study.

The Relationship Between Marital Status and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in unmarried marital status by 100.0%. While normal mental health is higher in divorced status by 100.0%. The results of the statistical test are empty. This means that fishermen with marital status are not related to mental health at all. This study is in line with Dewi et al. (2021), showing that there is no relationship between marital status and mental health. Marital status is negatively correlated with mental health, where married individuals have a lower probability of experiencing mental health disorders by 0.00256 or 0.256% percentage points than unmarried individuals. However, this variable does not have a significant effect on mental health. According to the researcher's assumption, there is no relationship because the majority of fishermen are married, so it is certain that those who experience mental disorders and those who do not are fishermen who are married and are also influenced by other factors, such as age. The majority of fishermen who are married are older than those who are not married.

Relationship between Work Period and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that the average length of service of fishermen with normal mental health is higher, which is 21 years, while those with abnormal health are 14 years. The results of the statistical test obtained an OR value of 0.83. This means that the longer the fishermen work, the lower the mental health disorders in fishermen. The results of the statistical test obtained a p-value of 0.0001, which means that there is a significant relationship between length of service and the mental health of fishermen in coastal areas. This study is in line with Sørensen et al. (2022), showing that there is a relationship between work period and mental health. The relationship between work period and mental health was tested using the Spearman Rank correlation test and obtained a p-value of 0.015 (<0.05) which means H_0 is rejected and H_a is accepted, so it can be concluded that there is a relationship between work period and mental health. Work period has an important influence in triggering the emergence of work stress. Workers with longer work periods tend to have better abilities and understanding of their work compared to workers with shorter work periods. This is because the experience of workers with longer work periods has more experience of the work they do (Sørensen et al., 2022). According to the researcher's

assumption based on events in the field, many fishermen have worked for a long time and are accustomed to the conditions that occur as fishermen.

Relationship between Length of Work and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that all fishermen work for 12 hours. The results of the statistical test are empty. This means that fishermen with long working hours have absolutely no relationship to mental health. This study is inconsistent with Jonglertmontree et al. (2022), showing that there is a relationship between the length of work per day and mental health. Long working hours and difficult working conditions can increase the risk of mental health disorders in maritime workers, including fishermen. Long working hours are often associated with fatigue, stress, and decreased mental well-being. Long working hours can cause significant physical and mental fatigue. This fatigue can reduce fishermen's ability to cope with stress and increase the risk of mental health disorders. Fishermen who work long hours often have limited rest time. Lack of time for rest and recovery can increase the risk of chronic stress and fatigue, which contribute to mental health problems. According to the researcher's assumption, fishermen in the area go together, from afternoon to morning. With the same duration. So there is no comparison of other durations. This is because it could be because the ocean conditions are better at night or fish are easy to catch at night.

The Relationship Between Boat Ownership and the Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in those who do not have a boat by 65.50%. While normal mental health is higher in those who have a boat by 78.79%. The results of the statistical test obtained an OR value of 6.19. This means that fishermen who do not have a boat are 6 times at risk of mental health disorders. The results of the statistical test obtained a p-value of 0.002, which means that there is no significant relationship between educational status and mental health in fishermen in coastal areas. This study is in line with Jonglertmontree et al. (2022), showing that there is a relationship between boat ownership and mental health. Ownership of assets, including work tools such as boats, can provide a greater sense of control and economic stability, which contributes to better mental well-being. Boat ownership allows fishermen to work independently and not rely on renting or using someone else's boat. This provides greater economic stability and income opportunities, which can reduce financial stress and improve mental well-being. Owning your own boat provides a greater sense of control over your work and catch. Fishermen can plan and organize their own working hours, which can increase job satisfaction and reduce stress.

Relationship between Income Amount and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that the average income of fishermen with normal mental health is higher, which is IDR 103,275. The results of the statistical test obtained an OR value of 0.99. This means that the higher the income of fishermen, the lower the mental health disorders in fishermen. The results of the statistical test obtained a p-value of 0.0001, which means that there is a significant relationship between income and mental health of fishermen in coastal areas. This study is in line with Thomson et al. (2022), showing that there is a relationship between income and mental health. Finding that higher income is associated with a lower risk of mental health disorders because higher income allows access to better resources, including mental health care and social support. Higher income provides financial stability that reduces stress related to economic uncertainty and daily needs. This can reduce anxiety and improve mental well-being (Pakpahan, 2022). Fishermen with higher incomes have more access to better health services, including mental health care. This allows

them to get professional help when needed, which can improve their mental health (Sulaiman, 2021).

The Relationship Between Social Support and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in those who do not receive social support by 50.00%. While normal mental health is higher in those who receive social support by 86.96%. The results of the statistical test obtained an OR value of 6.67. This means that fishermen who do not receive social support are 7 times at risk of mental health disorders. The results of the statistical test obtained a p-value of 0.001, which means that there is a significant relationship between social support and mental health in fishermen in coastal areas. This study is in line with Calista et al. (2020), showing that there is a relationship between social support and mental health. Social support is defined as a pattern of positive interaction or helping behavior given to individuals who need support. Blumer stated that humans act on the basis of everything that is meaningful to them, and that meaning can be developed through social interaction with others. Social interaction is one of the social supports where in achieving something a person also needs support from others, namely motivation from the environment or their social (Handono & Bashori, 2013). Social support can reduce stress levels by providing a sense of security and comfort. Fishermen who receive social support are more likely to feel supported in facing the challenges of work and daily life. Social support can increase self-esteem and self-worth, because fishermen feel appreciated and recognized by their social environment (Bavik et al., 2020).

The Relationship Between the Use of Personal Protective Equipment and the Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in those who do not fully use PPE by 42.31%. While normal mental health is higher in those who fully use PPE by 93.33%. The results of the statistical test obtained an OR value of 10.27. This means that fishermen who do not fully use PPE are 10 times at risk of experiencing mental health disorders. The results of the statistical test obtained a p-value of 0.003, which means that there is a significant relationship between the use of PPE and mental health in fishermen in coastal areas. This study is in line with Asriyani and Sriningsih (2021), showing that there is a relationship between the use of PPE and mental health. found that the use of proper PPE can reduce the risk of work accidents and diseases, which in turn can reduce stress and improve workers' mental health. Workers who feel safe and protected in the workplace tend to have lower stress levels and better mental health and effective use of PPE can increase workers' sense of security and psychological well-being, which contributes to better mental health.

The Relationship Between Blood Pressure and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in hypertension by 72.22%. While normal mental health is higher in those without hypertension by 82.81%. The results of the statistical test obtained an OR value of 12.52. This means that fishermen with hypertension are 13 times at risk of mental health disorders. The results of the statistical test obtained a p-value of 0.0001, which means that there is a significant relationship between blood pressure and mental health in fishermen in coastal areas. This study is in line with Ankhofiya et al. (2021), showing that there is a relationship between blood pressure and mental health. People with hypertension often experience stress and anxiety related to their condition. Worries about health complications and blood pressure management can increase psychological burden. Hypertension can cause biological changes in the body, including increased stress hormones such as cortisol, which

can affect mood and mental health. Chronic hypertension can affect blood flow to the brain, which can cause cognitive impairment and affect thinking and memory. This can increase the risk of depression and other mental disorders.

Relationship Between Smoking Status and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in non-smokers by 25.00%. While normal mental health is higher in smokers by 75.00%. The results of the statistical test obtained an OR value of 0.07 ($1-0.07 = 0.93$). This means that fishermen who smoke are able to prevent mental health disorders by 93%. The results of the statistical test obtained a p-value of 0.016, which means that there is a significant relationship between smoking status and mental health in fishermen in coastal areas. This study is in line with Dewi et al. (2021), showing that there is a relationship between smoking status and mental health. Some of which occur in someone who smokes as a coping mechanism to reduce stress and anxiety. Nicotine in cigarettes can provide a temporary calming and mood-enhancing effect, which is considered a short-term "benefit" for mental health. There is a feeling of relaxation after smoking, although the long-term effects of smoking can actually increase the risk of mental health disorders, such as anxiety and depression. It is possible that fishermen who smoke believe that smoking helps them feel better, and this placebo effect may play a role in their perception of their mental health (Inar et al., 2019).

The Relationship Between Fatigue Levels and Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher at moderate fatigue levels of 73.08%. While normal mental health is higher at mild fatigue levels of 91.07%. The results of the statistical test obtained an OR value of 27.69. This means that fishermen with moderate fatigue levels are 28 times at risk of mental health disorders. The results of the statistical test obtained a p-value of 0.0001, which means that there is a significant relationship between fatigue levels and mental health in fishermen in coastal areas. This study is in line with Amir et al. (2019), showing that there is a relationship between fatigue levels and mental health. Fatigue is a protective mechanism for the body to avoid further damage, so that recovery occurs after resting. Fatigue is regulated centrally by the brain in the central nervous system. The term fatigue itself usually indicates different conditions for each individual, but all of them lead to loss of efficiency and decreased work capacity and body resistance (Tarwaka, 2015). Excessive fatigue can lead to increased levels of stress and anxiety. Fishermen who work in difficult conditions and experience constant fatigue will feel more easily stressed and anxious (Wahjono, 2022).

The Relationship Between the Number of Children and the Mental Health of Fishermen in Coastal Areas

Based on the results of the analysis above, it shows that fishermen with mental health disorders are higher in those who have >2 children by 43.33%. While normal mental health is higher in those who have <2 children by 98.85%. The results of the statistical test obtained an OR value of 2.85. This means that fishermen who have >2 children are 3 times more at risk of experiencing mental health disorders. The results of the statistical test obtained a p-value of 0.037, which means that there is a significant relationship between the number of children and health. This study is in line with Russell et al. (2020), showing that there is a relationship between age and mental health. In the study, it was stated that the burden of responsibility that increases with the number of children can affect the psychological well-being of parents. The additional pressure of caring for more children can contribute to an increased risk of mental health disorders. This reference supports the finding that fishermen with more than two children have a higher risk of mental health disorders. Research by Metzger and Gracia (2023), shows that there is a complex relationship between having children and mental health.

Although parents report higher levels of happiness and meaning in life, they also experience greater levels of stress and burnout compared to those without children. This suggests that increased responsibilities and emotional demands can impact overall mental well-being.

CONCLUSION

Mental health disorders in fishermen are still common, especially in coastal areas. The incidents are caused by several factors originating from socio-economic status, health and social support. In general, all factors with risks originating from socio-economic status, health and social support are higher in those experiencing mental health disorders. Several factors related to mental health disorders are age, length of service, boat ownership, income, level of fatigue, social support, blood pressure, smoking status, use of PPE and number of children. Several factors that are not related to mental health disorders are educational status, BPJS ownership, marital status and length of service. Several dominant factors causing mental health disorders are fishermen who have >2 children and moderate levels of fatigue. With these results, there are still many mental health disorders experienced by fishermen in coastal areas.

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