Papua Medicine and Health Science (PMHS)
Volume 2, Nomor 1, 2025
https://jurnal.fk-unipa.com/index.php/PMHS

Association of Gender and Body Mass Index With Hemorrhoid Recurrence at Pelambuan Public Health Center, Banjarmasin

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ARTICLE INFO

Article history

Received: 02 June 2025
Revised: 06 June 2025
Accepted: 30 June 2025

Keywords:

Hemorrhoids, Body Mass Index (BMI), Gender, Recurrence

ABSTRACT/ ABSTRAK

ABSTRACT. *Non-communicable diseases are a major health burden in developing countries, one of which is hemorrhoids. Hemorrhoids are abnormal anorectal conditions commonly characterized by anal bleeding. Hemorrhoids have the highest recurrence rate among anorectal disorders. Various factors may contribute to hemorrhoid recurrence, including gender and body mass index (BMI). In males, hemorrhoids may be caused by more intense physical activity, while in females, they may be influenced by the hormone progesterone, which inhibits contractions in the digestive tract. Excess BMI or body fat levels can lead to increased intra-abdominal pressure, which is considered a contributing factor to hemorrhoid recurrence. This study aimed to determine the association of gender and body mass index with hemorrhoid recurrence at Pelambuan Public Health Center, Banjarmasin. A correlational analytical design with a cross-sectional approach was employed, involving total sampling of 83 respondents with a history of hemorrhoids. Data were collected using a questionnaire. Analysis using the Chi-Square statistical test showed a significant association between gender and hemorrhoid recurrence ($p = 0.035 < \alpha = 0.05$), as well as between body mass index and hemorrhoid recurrence ($p = 0.001 < \alpha = 0.05$). It is concluded that gender and body mass index are significantly associated with hemorrhoid recurrence. Hemorrhoid sufferers are advised to maintain regular physical activity, a healthy body weight, nutritious eating habits, and avoid excess fat accumulation as preventive measures against recurrence.*

Kata kunci:

Hemoroid, IMT, Jenis Kelamin, Kekambuhan

ABSTRAK. Penyakit tidak menular merupakan beban kesehatan utama dinegara-negara yang sedang berkembang, salah satunya penyakit hemoroid. Hemoroid merupakan kondisi anorectal tidak normal dengan gejala umum perdarahan di anus. Hemoroid memiliki angka tertinggi terjadinya kekambuhan. hemoroid dapat terjadinya berbagai faktor, di antaranya jenis kelamin dan IMT. Hemoroid pada laki-laki disebabkan karena memiliki aktivitas fisik yang lebih berat, dan perempuan disebabkan karena pengaruh hormon progesteron yang menghambat kontraksi pada saluran pencernaan. Seseorang mengalami kelebihan IMT atau kadar lemak didalam tubuh berdampak timbulnya tekanan intraabdominal sebagai faktor kekambuhan hemoroid. Penelitian ini bertujuan mengetahui hubungan Jenis Kelamin Dan Indeks Massa Tubuh Dengan Kekambuhan Hemoroid Di Wilayah Kerja Puskesmas Pelambuan Banjarmasin. Penelitian ini menggunakan metode desain analisis korelasi dengan pendekatan cross sectional dan teknik total sampling terhadap 83 responden memiliki riwayat hemoroid. Data dikumpulkan menggunakan kuesioner. Hasil analisis menggunakan Uji Statistic Chi Square, Jenis kelamin dengan kekambuhan hemoroid ($p = 0.035 < a = 0.05$) dan indeks massa tubuh dengan kekambuhan hemoroid ($p=0,001 < a = 0.05$). Disimpulkan terdapat hubungan jenis kelamin dan indeks massa tubuh dengan kekambuhan hemoroid. Diharapkan penderita hemoroid menjaga aktifitas, berat badan, makanan yang sehat serta menjaga lemak berlebih sebagai upaya pencegahan terjadinya kekambuhan hemoroid.

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INTRODUCTION

Health is a fundamental aspect of human life. According to Law No. 36 of 2009 of the Republic of Indonesia on Health, health is defined as a state of physical, mental, spiritual, and social well-being that enables individuals to be socially and economically productive (Ministry of Health, 2023). Non-communicable diseases (NCDs) refer to diseases that are not transmitted from person to person and are not caused by infectious agents, but rather result from physiological or metabolic dysfunctions in the human body. NCDs have become a major health burden in developing countries that are undergoing demographic transitions and lifestyle changes. One such example is hemorrhoids (Rifki et al., 2024).

Hemorrhoids are among the most common anorectal conditions affecting the adult population worldwide and are associated with considerable medical and socioeconomic consequences. Globally, their prevalence continues to increase. The World Health Organization (WHO) reports that approximately 50% of the global population is affected by hemorrhoids by the age of 50 (World Health Organization, 2023). In Indonesia, the Ministry of Health estimates that 10 million people, or about 5.7% of the population, suffer from hemorrhoids (Ministry of Health, 2024).

In South Kalimantan Province, the prevalence of hemorrhoids is reported at 34.2%. In 2023, Banjarmasin City recorded 1,109 cases of hemorrhoids across 28 public health centers, with Pelambuan Public Health Center reporting the highest proportion, 17.04% or 189 cases within one year. In 2024, the number of patients at Pelambuan Public Health Center totaled 83, consisting of both male and female sufferers.

Various factors contribute to the development and recurrence of hemorrhoids, including age, gender, chronic constipation, pregnancy, elevated intra-abdominal pressure, obesity, laxative use, sedentary occupations, prolonged straining, and certain syndromes or diseases that increase pelvic venous pressure (Fanany et al., 2024). Hemorrhoids are not gender-specific; both males and females are affected. In Indonesia, hemorrhoids are reported more frequently in males, whereas international online surveys conducted in 2020 indicate that 56% of patients were female. Similarly, a study in South Korea found that females had a 6% higher risk of developing hemorrhoids (Apriza & Abdullah, 2022).

Differences in physical activity, hormonal factors, pregnancy, and childbirth history may explain this gender disparity (Erianto et al., 2022). Another important risk factor is excessive body weight or obesity, which is typically assessed using body mass index (BMI). Obesity contributes to increased pressure in the abdominal and pelvic regions, which can affect the blood vessels surrounding the anus and lead to hemorrhoid recurrence.

Body mass index (BMI) is a commonly used measure to categorize an individual's weight in relation to their height. A high BMI, indicative of obesity, has been linked to various health problems, including hemorrhoids. While some studies suggest that individuals with higher BMI may have a lower risk of mortality in specific conditions such as melanoma (Naik et al., 2019), obesity remains a recognized risk factor for the development and recurrence of hemorrhoids. Increased fat accumulation in the body can lead to elevated intra-abdominal pressure, which is believed to contribute to hemorrhoid recurrence (Aghni Haunan et al., 2024).

A preliminary study conducted on December 13 and 14, 2024, through interviews with ten hemorrhoid patients at Pelambuan Public Health Center, Banjarmasin, revealed that nine patients reported symptoms such as pain, itching, burning sensation, anal lumps, loss of appetite due to discomfort, and bleeding during defecation. Among these patients, seven were female and three were male. Furthermore, BMI calculations indicated that two patients fell into the category of Obesity Class I and one into Obesity Class II. These findings suggest a potential association between gender and body mass index with hemorrhoid recurrence, warranting further investigation to strengthen the empirical evidence.

Despite the relatively high prevalence of hemorrhoids and the suspected roles of gender and BMI in recurrence, there is limited local evidence, particularly in the context of primary healthcare settings in Indonesia. Previous studies have largely focused on prevalence or treatment outcomes, while research specifically examining gender and BMI as predictors of recurrence remains scarce. This gap underscores the need for targeted studies to explore these relationships within community-level healthcare facilities. Therefore, this study aims to examine the association of gender and body mass index with hemorrhoid recurrence at Pelambuan Public Health Center, Banjarmasin.

RESEARCH METHOD

This study employed a correlational analytical design with a cross-sectional approach, in which the variables were measured at a single point in time. The research aimed to assess the correlation between gender and body mass index (BMI). The study population consisted of 83 respondents, all of whom were hemorrhoid patients seeking treatment at Pelambuan Public Health Center, Banjarmasin. The sampling technique used was non-probability sampling, specifically purposive sampling, by applying a total sampling method. Tools and materials used in the study included a height measurement device and a weighing scale. The research instrument utilized was a structured questionnaire.

The collected data were analyzed using a quantitative approach. The analysis began with univariate analysis to describe the frequency distribution and percentage of each variable, including gender, BMI, and hemorrhoid recurrence status. Subsequently, bivariate analysis was conducted using the Chi-Square test (χ^2) to determine the association between the independent variables (gender and BMI) and the dependent variable (hemorrhoid recurrence). The Chi-Square test was selected as it is appropriate for categorical data and is used to assess the significance of relationships between variables. Statistical significance was determined at a 95% confidence level with a significance threshold of $\alpha = 0.05$. A p-value < 0.05 was considered indicative of a statistically significant association between the tested variables. All data processing and statistical analyses were performed using IBM SPSS Statistics version 29 to ensure accuracy and facilitate data interpretation.

RESULTS

Respondent Characteristics

Characteristics Based on Gender

Table 1. Frequency distribution based on the gender of hemorrhoid patients in the working area of Pelambuan Public Health Center, Banjarmasin

No	Gender	Frequency	Percentage (%)
1	Male	47	56.63
2	Female	36	43.37
Total		**83**	**100**

Table 1 shows that among the 83 respondents, male patients accounted for the majority, with 47 individuals (56.63%) diagnosed with hemorrhoids.

Characteristics Based on Age

Table 2. Frequency distribution based on the age of hemorrhoid patients in the working area of Pelambuan Public Health Center, Banjarmasin

No	Age (Years)	Frequency	Percentage (%)
1	15–24	14	16.87
2	25–34	26	31.33
3	35–44	16	19.28
4	45–54	13	15.66
5	55–64	10	12.05
6	65–74	3	3.61
7	75–80	1	1.20
Total		**83**	**100**

Table 2 indicates that the highest number of hemorrhoid patients (26 individuals or 31.33%) were in the 25–34 age group, while the lowest number (1 individual or 1.20%) was in the 75–80 age group.

Characteristics Based on Occupation

Table 3. Frequency distribution based on the occupation of hemorrhoid patients in the working area of Pelambuan Public Health Center, Banjarmasin

No	Occupation	Frequency	Percentage (%)
1	Domestic Worker (ART)	1	1.20
2	Unemployed	2	2.41
3	Daily Laborer	12	14.46
4	Housewife (IRT)	17	20.48
5	Employee	3	3.61
6	Contract Employee	1	1.20
7	Private Sector Employee	8	9.64
8	Trader	20	24.10
9	Student	8	9.64
10	Retired	1	1.20
11	Farmer	4	4.82
12	Civil Servant (PNS)	1	1.20
13	Entrepreneur	5	6.02
Total		**83**	**100**

Table 3 shows that the majority of respondents were traders, totaling 20 individuals (24.10%). The occupations with the fewest respondents were domestic worker (ART), contract employee, retired individual, and civil servant, each with only 1 respondent (1.20%).

Univariate Analysis

Gender

Table 4. Frequency distribution based on gender in the working area of Pelambuan Public Health Center, Banjarmasin

No	Gender	Frequency	Percentage (%)
1	Male	47	56.63
2	Female	36	43.37
Total		**83**	**100**

Based on Table 4, the distribution of gender among hemorrhoid patients shows that of the 83 respondents, male patients were more prevalent, accounting for 47 individuals (56.63%).

Body Mass Index (BMI)

Table 5. Frequency distribution based on body mass index in the working area of Pelambuan Public Health Center, Banjarmasin

No	BMI Category	Frequency	Percentage (%)
1	Underweight (<18.5)	7	8.43
2	Normal weight (18.5–24.9)	19	22.28
3	Overweight (25.0–29.9)	0	0.00
4	Obesity Class I (30.0–34.9)	4	4.82
5	Obesity Class II (35.0–39.9)	45	54.22
6	Obesity Class III (>40.0)	8	9.64
Total		**83**	**100**

Based on Table 5, the distribution of BMI among hemorrhoid patients shows that the highest proportion was in the Obesity Class II category, with 45 respondents (54.22%). The lowest frequency was in the Obesity Class I category, with 4 respondents (4.82%).

Hemorrhoid Recurrence Classification

Table 6. Frequency distribution based on hemorrhoid recurrence in the working area of Pelambuan Public Health Center, Banjarmasin

Recurrence Status	Frequency	Percentage (%)
Recurrent	72	86.75
Not Recurrent	11	13.25
Total	**83**	**100**

Based on Table 6, among the 83 respondents, 72 individuals (86.75%) experienced hemorrhoid recurrence, indicating a high recurrence rate within the study population.

Bivariate Analysis

Bivariate analysis was conducted to examine the association between gender and body mass index (BMI) with hemorrhoid recurrence in the working area of Pelambuan Public Health Center, Banjarmasin, using the Chi-Square test. If the p-value < 0.05, the null hypothesis (H_0) is rejected, indicating a statistically significant association between the variables.

Table 7. Association Between Gender and Hemorrhoid Recurrence

Chi-Square Crosstab Test Gender × Hemorrhoid Recurrence							
Variable		Hemorrhoid Recurrence				Total	
		Recurrence		No Recurrence			
		n	%	n	%	n	%
Gender	Male	44	53.01	3	3.61	47	56.63
	Female	28	33.73	8	9.64	36	43.37
Total		**72**	**86.73**	**11**	**13.25**	**83**	**100**
p-value = 0.035					**α = 0.05**		

Based on Table 7, the Chi-Square test results show a p-value of 0.035, which is less than the significance level (α = 0.05). This indicates a statistically significant association between gender and hemorrhoid recurrence among patients in the Pelambuan Public Health Center area.

Table 8. Association Between Body Mass Index and Hemorrhoid Recurrence

Chi-Square Cross-tabulation Body Mass Index × Hemorrhoid Recurrence							
Variable		Hemorrhoid Recurrence				Total	
		Recurrence		No Recurrence			
		n	%	n	%	n	%
BMI Category	Non-Obese	17	20.24	9	10.84	26	31.33
	Obese	55	66.27	2	2.4	57	68.67
Total		**72**	**86.73**	**11**	**13.25**	**83**	**100**
p-value = 0.001					**α = 0.05**		

Based on Table 8, the Chi-Square test results indicate a p-value of 0.001, which is less than the significance threshold (α = 0.05). This confirms a significant association between body mass index and hemorrhoid recurrence among patients in the Pelambuan Public Health Center.

DISCUSSION

Association Between Gender and Hemorrhoid Recurrence at Pelambuan Public Health Center, Banjarmasin

Based on the findings presented in Table 7, the Chi-Square test revealed a p-value of 0.035. Since this value is less than the significance level (α = 0.05), it indicates a statistically significant association between gender and hemorrhoid recurrence in the working area of Pelambuan Public Health Center, Banjarmasin.

According to Dwi Utomo (2020), both males and females are at risk of developing hemorrhoids at various ages. However, in males, hemorrhoids may be more common due to heavier physical activity. Activities such as lifting heavy objects increase intra-abdominal pressure, which in turn elevates the risk of hemorrhoid development and recurrence.

This finding is consistent with the study by Hadni et al. (2022), which reported that 70% of hemorrhoid patients were male. The authors suggested that the physical and emotional differences between males and females could contribute to this disparity. Males tend to

engage in more strenuous physical activities, have habits such as smoking, and may experience prostate enlargement—all of which can increase the risk of hemorrhoids.

Similarly, the study conducted by Fanany et al. (2019–2023) also found that male patients outnumbered female patients. The researchers explained that physical labor, such as prolonged heavy lifting and sitting for extended periods, can lead to recurrent straining of the anal sphincter muscles. This repeated straining may aggravate the internal hemorrhoidal plexus, leading to more severe conditions, including prolapse. Additionally, prostate enlargement in men contributes to increased straining during defecation, further raising intra-abdominal pressure and impeding venous return, which may result in hemorrhoidal recurrence.

The current study corroborates these previous findings, showing that male respondents experienced a higher rate of hemorrhoid recurrence compared to females. This may be attributed to factors such as more intense physical activity, smoking habits, and prostate-related issues. The results align with the findings of Hadni et al. (2022) and Fanany et al. (2022), further supporting the notion that gender plays a significant role in hemorrhoid recurrence.

Association Between Body Mass Index and Hemorrhoid Recurrence at Pelambuan Public Health Center, Banjarmasin

Based on the findings in Table 8, the Chi-Square test yielded a p-value of 0.001. This value is lower than the significance level ($\alpha = 0.05$), indicating a statistically significant association between body mass index (BMI) and hemorrhoid recurrence among patients at Pelambuan Public Health Center.

The results of this study indicate that BMI strongly influences the recurrence of hemorrhoids. Nutritional status reflects the balance between nutrient intake and expenditure. An imbalance in which intake exceeds expenditure over a prolonged period can lead to excessive weight gain. This excess body weight, as observed in several respondents, should be taken seriously as it increases the likelihood of recurrence or severity of hemorrhoids (Naik et al., 2019).

Although BMI is not the only indicator of obesity, it is closely associated with it. Obesity is one of the major contributing factors to hemorrhoid recurrence. Excess body fat leads to increased intra-abdominal pressure, which is believed to be a primary mechanism in the recurrence of hemorrhoids (Aghni Haunan et al., 2021).

According to Erianto et al. (2022), one of the leading causes of hemorrhoids is being overweight or obese, as assessed using BMI. Obesity places additional pressure on the abdominal and pelvic regions, including the blood vessels around the anus. Similarly, a study by Putri et al. (2022) found that individuals with obesity have a 1.51 times higher risk of developing hemorrhoids compared to those with normal body weight. This risk is primarily due to abdominal fat acting as a stressor on the anal sphincter muscles. Continuous pressure on these muscles can lead to venous congestion and dilation of the hemorrhoidal plexus, thereby increasing the risk of internal hemorrhoids.

Naik et al. (2019) further explained that obesity induces the release of pro-inflammatory cytokines and acute-phase proteins, which activate the immune system and disrupt metabolic homeostasis. These processes may contribute to the development and recurrence of hemorrhoids. Once again, nutritional imbalance, specifically prolonged excessive intake, can worsen the severity of internal hemorrhoids.

Preventive efforts should focus on addressing obesity through regular physical activity, reduced fat intake, and adherence to a healthy, balanced diet. A healthy lifestyle must be implemented to prevent excess weight gain, which remains a modifiable risk factor for hemorrhoid recurrence. This study found that hemorrhoid recurrence was more common among individuals categorized as Obesity Class I, supporting previous findings from Putri et al. (2022) and Naik et al. (2019) regarding the role of obesity in hemorrhoid recurrence.

CONCLUSION

The results of this study demonstrate a significant association between gender and body mass index (BMI) with hemorrhoid recurrence. Male respondents were found to be more at risk of experiencing hemorrhoid recurrence compared to female respondents. In addition, participants with excessive BMI (classified as Obesity Class I to III) had higher recurrence rates than those with normal or underweight BMI. Therefore, gender and BMI are statistically associated with the incidence of hemorrhoid recurrence among patients in the area of Pelambuan Public Health Center, Banjarmasin.

It is recommended that public health centers, as the frontline of community health services, strengthen educational outreach efforts to promote healthy lifestyles. This includes emphasizing the importance of maintaining an ideal body weight and adopting a high-fiber diet, particularly among individuals with hemorrhoids.

REFERENCES

Aghni Haunan, A. Z., Dian Lestari, R., & Sulistyowati, E. (2021). *Beban kerja, usia, dan indeks massa tubuh menjadi faktor risiko kejadian low back pain dan gejala hemoroid pada buruh angkut di Kabupaten Malang*.

Apriza, R., & Abdullah, D. (2022). *Karakteristik pasien hemorrhoid di bagian bedah digestif RSI Siti Rahmah Padang periode Januari–Desember*. *Jurnal Kesehatan Saintika Meditory*. https://jurnal.syedzasaintika.ac.id

De Marco, S., & Tiso, D. (2021). *Lifestyle and risk factors in hemorrhoidal disease*. *Frontiers in Surgery, 8*. Frontiers Media S.A. https://doi.org/10.3389/fsurg.2021.729166

Elia Abdians, A., & Maelissa, R. (2023). *Hemoroid interna grade IV: Laporan kasus [Grade IV internal hemorrhoids: Case report]*. *Jurnal Medical Profession (MedPro), 5*(3).

Erianto, M., Wulandari, M., Prasetia, T., & Pebrianti, A. (2022). *Hubungan faktor usia lansia pada kejadian hemoroid di Rumah Sakit Pertamina Bintang Amin tahun 2017–2019*. *Mahesa: Malahayati Health Student Journal, 2*(1), 116–123. https://doi.org/10.33024/mahesa.v2i1.4053

Fanany, M. A., Susana, E. N., & Nova, A. D. (2024). *Hubungan usia, jenis kelamin dan indeks massa tubuh terhadap derajat keparahan hemoroid interna pada pasien hemoroidektomi*. *Zona Kedokteran, 14*(1).

Hadni, N. S., Oktaviyanti, I. K., Rosida, L., Wibowo, A. A., & Yuliana, I. (2023). *Hubungan usia dan jenis kelamin dengan derajat keparahan hemoroid interna*.

Helen, K., Pradiantini, Y., Gede, I., & Dinata, S. (2021). *Diagnosis dan penatalaksanaan hemoroid*. *Ganesha Medicina Journal, 1*.

Kemenkes RI. (2018). *Laporan Riskesdas 2018 Nasional*.

Kemenkes RI. (2023). *Pedoman Nasional Pelayanan Kedokteran Tata Laksana Perdarahan Saluran Cerna*.

Kemenkes RI. (2024). *Hemorrhoids: Diagnosis and treatment options*.

Lohsiriwat, V., Sheikh, P., Bandolon, R., Ren, D. L., Roslani, A. C., Schaible, K., Freitag, A., Martin, M., Yaltirik, P., & Godeberge, P. (2023). *Recurrence rates and pharmacological treatment for hemorrhoidal disease: A systematic review*. *Advances in Therapy, 40*(1), 117–132. Adis. https://doi.org/10.1007/s12325-022-02351-7

Naik, G. S., Waikar, S. S., Johnson, A. E. W., Buchbinder, E. I., Haq, R., Hodi, F. S., Schoenfeld, J. D., & Ott, P. A. (2019a). *Complex inter-relationship of body mass index, gender and serum creatinine on survival: Exploring the obesity paradox in melanoma patients treated with checkpoint inhibition*. *Journal for Immunotherapy of Cancer, 7*(1). https://doi.org/10.1186/s40425-019-0512-5

Naik, G. S., Waikar, S. S., Johnson, A. E. W., Buchbinder, E. I., Haq, R., Hodi, F. S., Schoenfeld, J. D., & Ott, P. A. (2019b). *Complex inter-relationship of body mass index, gender and serum creatinine on survival: Exploring the obesity paradox in melanoma patients treated with checkpoint inhibition*. *Journal for Immunotherapy of Cancer, 7*(1). https://doi.org/10.1186/s40425-019-0512-5

NIH. (2023). *BMI classification percentile and cut-off points*.

Putri, K., Oktaviani, K. I., Rosida, L., Wibowo, A. A., & Ulfah, M. (2022). *Hubungan obesitas dan konstipasi...* [Incomplete title—needs clarification].

Rifki, M., Rusdani, & Eryaningrum, N. (2024). *Based on gender*. *Zona Kedokteran, 14*(1).

Robby Amsriza, F., Fakhriani, R., Ilmu Bedah, B., Kedokteran dan Ilmu Kesehatan Universitas Muhammadiyah Yogyakarta, F., Ilmu Kesehatan Telinga Hidung Tenggorok, B., & Fakhriani, R. (2021). *Laporan kasus: Metode kombinasi modifikasi ligasi rubber band dan injeksi sklerotik pada hemoroid derajat 1 dengan menggunakan Paran Injection Ligation for Ambeien Pack (Pila Pack)*. *Medica Arteriana (Med-Art)*.

Shella, M., Robles, D., Christopher, D., & Young, J. (2021). *Teknik pembedahan merupakan prediktor utama kekambuhan dalam penanganan hemoroid*. https://doi.org/10.1111/jawaban.16738

Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.

Tuamelly, J., Serdi, P. I., Kailola, N. E., Glovrig Siahaya, P., & Tuahuns, A. (2023). *Efektivitas penatalaksanaan hemoroid dengan Paran Injection Ligation for Ambeien (PILA) dan hemoroidektomi*. *Medpro, 5*(2).

Ulandari, K. S., Nyoman, A. N. N., & Oka, D. I. G. S. (2023). *Hubungan usia, pekerjaan, dan jenis kelamin*. [Incomplete source—please verify journal or volume].

Utomo, D. F. (2020). *Hubungan usia dan jenis kelamin terhadap derajat hemoroid internal*.

Wang, L., Ni, J., Hou, C., Wu, D., Sun, L., Jiang, Q., Cai, Z., & Fan, W. (2023). *Time to change? Present and prospects of hemorrhoidal classification*. *Frontiers in Medicine, 10*. Frontiers Media S.A. https://doi.org/10.3389/fmed.2023.1252468

Widowati, F. S., & Ernawati, E. (2023). *Faktor risiko kejadian hemoroid pada pekerja usia produktif*. *Jurnal Ilmu Kesehatan Masyarakat, 12*(4), 277–282. https://doi.org/10.33221/jikm.v12i04.2092

World Health Organization. (2023). *Global burden of anorectal disorders: A systematic analysis for the Global Burden of Disease Study 2023*.

Yam, J. H., & Taufik, R. (2021). Hipotesis penelitian kuantitatif. *Perspektif: Jurnal Ilmu Administrasi*, *3*(2), 96-102.