



Path Analysis of Factors Affecting the Quality of Life of Hypertensive Patients At the Mandai Health Center

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ABSTRACT

Hypertension is one of the diseases that is considered the main cause of death and disability. The incidence rate of hypertension increases rapidly every year. This study aims to determine the influence of long-term suffering from hypertension, family support and medication adherence to the quality of life of patients through smoking behavior at the Mandai Health Center, Maros Regency. The type of research used is quantitative research with a cross sectional study design, which is a research design that studies the relationship between independent and dependent variables. The population in this study is all hypertension patients in the working area of the Mandai Health Center as many as 100 people. The sample in this study was 100 people using the sampling technique, namely total sampling. Statistical analysis used univariate and bivariate, with the chi square test followed by the path analyst. The results of the study using pathway analysis showed that family support ($p=0.004$, $\beta=0.279$), medication adherence ($p=0.011$, $\beta=-0.0274$) had a significant effect on the quality of life of hypertensive patients while suffering for a long time ($p=0.0357$, $\beta=0.098$), and smoking behavior ($p=0.960$, $\beta=-0.005$) did not have a significant effect on the quality of life of hypertensive patients at the Mandai Health Center, Maros Regency. The suggestion in this study is that it is expected that the patient's family will always support the treatment of hypertension patients so that the level of adherence to taking medication is better.

Keywords : Hypertension; Quality of Life; Long Suffering; Family Support; Smoking

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INTRODUCTION

World Health Organization (WHO), which is the World Health Organization, revealed that two-thirds of the population, including low- to moderate-income developing countries, is the highest risk group for hypertension out of the billions of people around the world who suffer from hypertension (1). The prevalence of hypertension according to WHO in 2019, according to Anitasari, was found to be 40% in developing countries, and the prevalence in developed countries was 35%. The highest hypertension is found in African countries at 40% and the United States at 35%, and then the coverage expands to Southeast Asia by 36% of the incidence rate in Asia. And about 1.5 million people every year die from blood pressure (2)

The National Figures for the Percentage of Hypertension Prevalence Based on the 2018 Riskesdas Results provide an idea that the population aged >18 years is dominated by women with a percentage of 36.85% and men with a percentage of 31.34% (3). Hypertension is associated with a low quality of life, especially in the domain of physical function. Decreased quality of life has implications for treatment and prevention of complications that can lead to a worse quality of life (4)

Hypertension can trigger other diseases such as heart failure and stroke, for which family support is needed. The results of Nuraeni's research stated that there was a significant relationship between family support and the quality of life of elderly people with hypertension in Grujungan Hamlet, Bantul, Yogyakarta. (5). Another study states that The majority of respondents who have family support will have a good quality of life and have meaningful relationships (6)

Patient compliance is the main factor determining the success of Ktherapy. Good adherence in carrying out therapy can affect blood pressure gradually and prevent complications from occurring. Mala, et al. (2022) and Latif et al. (2022) in their research

stated that there is a relationship between medication adherence and the quality of life of patients. One factor (not the main factor) that can affect quality of life is adherence to taking medication (7)(8)

One of the problems of hypertension prevention that is still difficult to do is the habit of consuming hypertension drugs, Nurhasan, et al.'s research stated that the reason hypertension sufferers do not consume hypertension drugs is because respondents reasoned that they did not want to be dependent on hypertension drugs (9)

The prevalence of hypertension based on measurement results in South Sulawesi Province is 31.68% and is highest in Soppeng Regency (42.57%) and Maros Regency with a total of 27.41% (10). Based on data reported from the Mandai Health Center, in 2024 until May, the number of cases recorded is 100 people. Based on surveys and interviews with hypertension patients, information was obtained that one of the causes of the high incidence of hypertension was due to habits or lifestyles that people used to often do physical activities such as walking, hoeing, and slowly being replaced by machines so that they became triggers for the risk of hypertension.

Quality of life is a crucial factor influencing health conditions, where poor quality of life can exacerbate diseases, including hypertension. Therefore, this study aims to analyze the factors influencing the quality of life of hypertension patients at the Mandai Community Health Center, Maros Regency, using a path analysis approach to formulate an effective hypertension prevention model.

METHODS

The type of research used is quantitative research with a cross sectional study design, which is a research design that studies the relationship between independent and dependent variables. This study was carried out in October - December 2024 with the population in this study being hypertensive patients in the work area of the Mandai Health

Center, the number of confirmed cases was 100 people. In this study, the Total Sampling method was used with the same sampling technique as the number of the existing population, namely with the number of samples in this study being as many as 100 people in the working area of the Mandai Health Center, Maros Regency, South Sulawesi. Statistical analysis used univariate and bivariate, with the chi square test followed by the path analyst.

RESULTS

Respondent Characteristics

Table 1
Distribution Based on Respondents in Hypertensive Patients at Mandai Health Center Maros Regency

Age Group	n	%
19-59 years old (Adult)	54	54,0
≥ 60 years old (Elderly)	46	46,0
Total	100	100
Gender	n	%
Male	16	16,0
Female	84	84,0
Total	100	100
Education	n	%
No School	18	18,0
Elementary School	40	40,0
Junior High School	20	20,0
Senior High School	20	20,0
Diploma	2	2,0
Total	100	100
Work	n	%
Unemployed	6	6,0
Retired	7	7,0
Homemaker	79	79,0
Self-employed	4	4,0
Civil Servant	1	1,0
Private Sector Employee	1	1,0
Farmer	1	1,0
Trader	1	1,0

Total

100

100

Source: Primary Data in 2024

Based on table 1, it is known that respondents who have an age group of 19 – 59 years (Adult) are 54 people (54.0%) and \geq age group of 60 years (Elderly) are 46 people (46.0%). Respondents with male gender were 16 people (16.0%) and female gender as many as 84 people (84.0%). Respondents with the highest level of education were elementary school as many as 40 people (40.0%) and the lowest level of education was Diploma as many as 2 people (2.0%). The respondents with the highest job as Homemaker were 79 people (79.0%) and the lowest jobs as Civil Servants, Private Sector Employees, Farmers and Traders were 1 person (1.0%).

Model I Line Coefficients

Table 2
Results of Independent Variable Path Coefficient for Intervening Variable

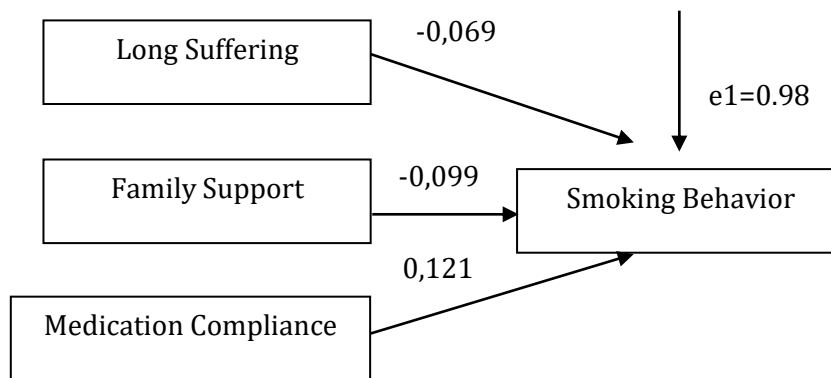
Variable Influence	Kofisen Jalur (β)	p-value	Test Results	R Square
X1 against Z	-0,069	0,548	Not significant	0,036
X2 against Z	-0,099	0,331	Not significant	
X3 against Z	0,121	0,291	Not significant	

Ket: X1 = long suffering, X2 = family support, X3= adherence to medication, Z=Smoking behavior
Source: Primary Data in 2024

Based on table 2, the variable of long-term hypertension (X1) has a negative influence on smoking behavior (Z) with a path coefficient of -0.069. However, this influence is not statistically significant ($p = 0.548 > 0.05$), so it can be concluded that the duration of suffering from hypertension does not have a significant influence on smoking behavior. Family support (X2) has a negative influence on smoking behavior (Z) with a path coefficient of -0.099. However, this influence is not statistically significant ($p = 0.331 > 0.05$), so it can be concluded that family support does not have a significant influence on smoking

behavior. Compliance with taking medication (X3) has a positive influence on smoking behavior (Z) with a path coefficient of 0.121. However, this influence is not statistically significant ($p = 0.291 > 0.05$), so it can be concluded that compliance with taking medication does not have a significant influence on smoking behavior.

Based on the results of simultaneous testing (overall) with Path Analysis, the magnitude of the R Square determinant coefficient was obtained which was 0.036 or 3.6%, which means that independent variables affected the intervening variable by 3.6% while the remaining 96.4% was contributed by other variables that were not studied. Meanwhile, the value of $e1 = \sqrt{1 - 0.036} = 0.98$. Thus, the path diagram of the structure model I is obtained as follows:



Model Line Coefficient II

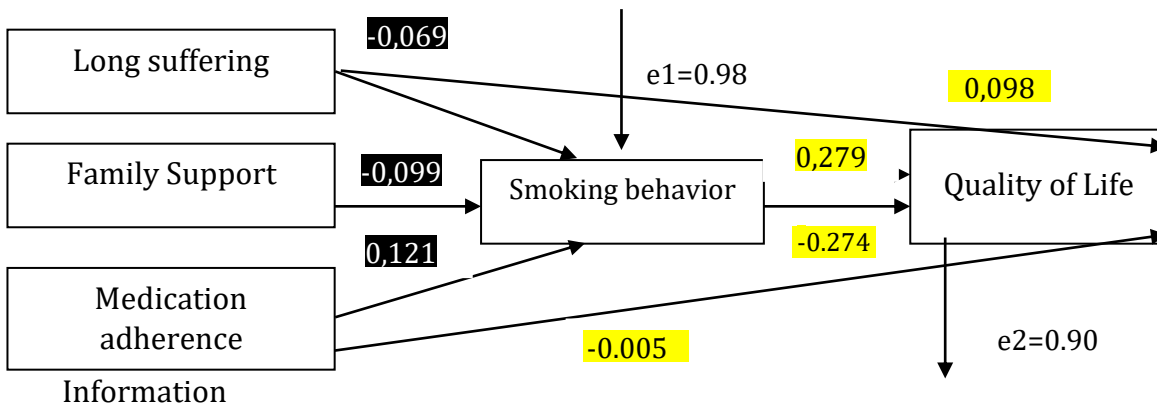
Table 3
Results of Path Coefficients of Independent Variables and Intervening Variables to Dependent Variables

Variable Influence	Kofisen Jalur (β)	p-value	Test Results	R Square
X1 against Y	0,098	0,357	Not significant	0,184
X2 against Y	0,279	0,004	signifkan	
X3 against Y	-0,274	0,011	signifkan	
Z against Y	-0,005	0,960	Not significant	

Ket: X_1 = long suffering, X_2 = family support, X_3 =adherence to medication,
 Y =smoking behavior Y =quality of life
Source: Primary Data in 2024

Based on table 3, the variable of the length of time suffering from hypertension (X_1) did not have a significant effect on quality of life (Y), namely with p -value = $0.357 > 0.05$. The percentage of long-term hypertension sufferers has a pathway coefficient (β) of 0.098, meaning that if the percentage of long-term hypertension decreases, it is estimated that it can improve the quality of life of hypertension sufferers by 9.8%. Family support (X_2) has a significant effect on quality of life (Y), with p -value = $0.004 < 0.05$. The percentage of family support has a path coefficient (β) of 0.279, meaning that if the percentage of family support increases, it is estimated that it can improve the quality of life of people with hypertension by 27.9%. Medication adherence (X_3) has a significant effect on quality of life (Y), with p -value = $0.011 < 0.05$. The percentage of medication adherence has a pathway coefficient (β) of -0.274, meaning that if the percentage of medication adherence increases, it is estimated that it can improve the quality of life of hypertensive patients by 27.4%. Smoking behavior (Z) had no significant effect on quality of life (Y), namely with p -value = $0.960 > 0.05$. The percentage of smoking behavior has a path coefficient (β) of -0.005, meaning that if the percentage of smoking behavior decreases, it is estimated that it can improve the quality of life of people with hypertension by 0.5%.

Based on the results of simultaneous testing (overall) with Path Analysis, the magnitude of the R square determinant coefficient was obtained which was 0.184 or 18.4% which means that independent variables and intervening variables affected dependent variables by 18.4% while the remaining 81.6% were contributed by other variables that were not studied. Meanwhile, the value of $e^2 = \sqrt{1 - 0.184} = 0.90$.



■ : Indirect Influence

■ : Direct Influence

DISCUSSION

Long Suffering from Hypertension

A long time of suffering from hypertension is the time of a person being diagnosed with hypertension. The long-standing cause of suffering from hypertension is of course how quickly a person develops hypertension. This is closely related to the factors that cause hypertension (11). The results of the pathway analysis showed that the length of suffering from hypertension (X_1) did not have a significant effect on smoking behavior (Z), namely with p -value = $0.548 > 0.05$. The percentage of long-term hypertension has a pathway coefficient (β) of -0.069 , meaning that if the percentage of long-term hypertension increases, it is estimated that it can reduce the risk of smoking behavior by 9.4%.

That in hypertensive patients, the length of time after hypertension has an impact on their ability to perform daily tasks independently. The longer a person suffers from hypertension, the more accustomed they become to live their lives. There is no relationship between the length of suffering and the quality of life of hypertension sufferers who receive treatment at the Bandarharjo Community Health Center (p -value = 1.000) (12)

The results of this study are in line with Abdu et al., (2022) there is no relationship between the length of time suffering from hypertension and quality of life (13). This research is also in line with what was conducted by Abdiana, (2020) stating that there is no relationship between the length of suffering from hypertension and quality of life. Respondents who have suffered from the disease for a long time have good experience in managing their disease(14).

Pebiani, et al (2024) who said that there was no relationship between the length of suffering from hypertension and the quality of life of hypertension patients who were prolans members of the Gamping 2 Health Center in 2024(15). This study is not in line with Chendra, et al. (2020) stating that there is a relationship between the duration of hypertension and the quality of life of elderly prolans participants with hypertension (*p-value* 0,011) (16)

Family Support

Family is the main support system for the elderly in maintaining their health. The role of the family in caring for the elderly includes caring for or caring for the elderly, maintaining and improving mental status, and providing motivation and facilitating the spiritual needs of the elderly. The results of the pathway analysis showed that family support (X_2) had a significant effect on quality of life (Y), namely with $p\text{-value} = 0.004 < 0.05$. The percentage of family support has a path coefficient (β) of 0.279, meaning that if the percentage of family support increases, it is estimated that it can improve the quality of life of people with hypertension by 27.9%.

Family support can affect a person's behavior and lifestyle so that it has an impact on health status and quality of life. Hypertensive patients who are in an environment that is cared for by their family can create a feeling of security and comfort so that they will grow a sense of self-care and increase motivation to carry out self-care. The feeling of comfort that arises will prevent the appearance of stress in hypertensive patients.

The results of this study are in line with research conducted by Nuraeni (2020) which said that family support with the quality of life of the elderly with hypertension has a very strong positive correlation with *Pearson Product Moment Correlation Coefficient* by 0.80 (5) This is also supported by Handayani's (2023) research that there is a relationship between family support and quality of life with a p-value of 0.000 (17)

The results of this study were supported by (Purwitaningtyas & Prayidno, 2018) on 45 elderly people in Sumbergondo Village, Glenmore District, Banyuwangi Regency that there was no significant relationship between family support and improved quality of life(18). Another study is also supported by Panjaitan (2020) who said that there was no significant relationship between family support and quality of life (19)

Medication Compliance

Medication adherence is one of the factors that can affect the quality of life of hypertension patients even though it is not the main factor. That medication adherence had a negative and significant effect on quality of life ($\beta = -0.274$; $p = 0.011$). This finding suggests that increased medication adherence is accompanied by a significant decrease in patients' quality of life. These results should be interpreted with caution, as medication adherence should theoretically have a positive impact on quality of life, particularly in patients with chronic diseases such as hypertension.

Nurmalita, et al. (2019) who showed that there is a meaningful relationship between the level of adherence to taking medication and the quality of life of hypertensive patients (20). The results of this study are strengthened by the research of Setiawan (2020) which shows a significant relationship between the level of adherence to the quality of life of hypertensive patients with a correlation coefficient value of less than 0.3(21)

Another study conducted by Chendra, et al. (2020) also showed a relationship between the regularity of taking medication and the quality of life of prolans participants with hypertension (16) In Purba's research, et al. (2024) stated that there was a

relationship between adherence to taking antihypertensive drugs and quality of life in hypertensive patients at the Martubung Health Center, Medan City in 2023 with a value of $P = 0.023$ ($\alpha < 0.05$). Hypertension is a chronic disease that cannot be cured or can recur at any time, as well as the treatment of hypertension takes a long time, but hypertension can be controlled in various ways, including that hypertension patients must comply with the diet program recommended by health workers

Smoking Behavior

Smoking is the main factor in death due to heart disease, vascular disease and others. This shows that the smoke load inhaled correlates with the quality of life index in individuals, how many cigarettes per day, years, has lower domains of quality of life, vitality and general health status (22)

The analysis results show that smoking behavior (Z) does not significantly affect quality of life (Y) with a path coefficient value of -0.005 and a p-value of 0.960 ($p > 0.05$). The very small coefficient value approaching zero indicates that the relationship between smoking behavior and quality of life in this study is very weak and not statistically significant.

Theoretically, smoking behavior is a major risk factor that can reduce quality of life, primarily through an increased risk of chronic diseases such as hypertension, heart disease, and respiratory disorders. Various studies have shown that smokers tend to have a lower quality of life compared to non-smokers, particularly in physical and general health dimensions. However, the results of this study showed a different finding, in which smoking behavior had no significant effect on respondents' quality of life.

This difference can be explained by several possibilities. First, the characteristics of the respondents, particularly those with hypertension, may influence the study results. Not all respondents who smoke experience a direct impact on quality of life, especially if the disease is still mild or well-controlled. Second, the duration and intensity of smoking, which

were not measured in detail, may lead to variations in effects not captured in the analysis. Light smokers may not feel a significant impact on their quality of life compared to heavy smokers.

Smoking habits affect a person's quality of life. People who smoke are more at risk of having a poor quality of life compared to people who don't smoke. Smoking contains nicotine which can lead to dependence, and can affect mental and emotional disorders that affect quality of life. This study is in line with Rumagit (2024) who stated that there is no relationship between smoking status and quality of life, and there is a relationship between hypertension and quality of life in residents of Tumumpa Dua Village, Tuminting District, Manado City (23)

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results, it can be concluded that not all variables have a significant influence on the quality of life of hypertension sufferers. Duration of hypertension did not significantly influence quality of life, although it showed a positive relationship. Conversely, family support was shown to have a positive and significant influence, making it an important factor in improving patients' quality of life. Meanwhile, medication adherence showed a negative and significant influence on quality of life, indicating that other factors, such as disease severity, treatment side effects, or therapy burden, may influence this relationship. Furthermore, smoking behavior did not have a significant influence on quality of life in this study. Overall, the quality of life of hypertension sufferers was more influenced by social support and clinical conditions than by other factors. The recommendations of this research are:

1. Healthcare professionals need to improve family-based interventions by involving family members in education and support for hypertension patients.

2. Healthcare facilities need to develop a patient-centered care approach that focuses not only on medication adherence but also on psychological aspects, treatment side effects, and patient quality of life.
3. Policymakers need to strengthen community-based promotive and preventive programs to increase social support for hypertension sufferers.
4. For future researchers, it is recommended to further examine the relationship between medication adherence and quality of life by considering mediating variables such as disease severity, duration of therapy, and patient psychological condition.

BIBLIOGRAPHY

1. Ekarini NLP, Wahyuni JD, Sulistyowati D. Faktor-faktor yang berhubungan dengan hipertensi pada usia dewasa. *Jkep.* 2020;5(1):61–73.
2. Roza E. Hubungan Tingkat Kecemasan Dengan Kualitas Hidup Penderita Hipertensi Di Puskesmas Lapai Kota Padang. *Sekolah Tinggi Ilmu Kesehatan Alifah Padang;* 2023.
3. Depkes RI. Laporan Riskesdas 2018 Nasional.pdf. Lembaga Penerbit Balitbangkes. 2018. p. 156.
4. Avelina Y, Natalia IY. Hubungan tingkat kecemasan dengan kualitas hidup pasien hipertensi yang sedang menjalani pengobatan hipertensi di desa lenandareta wilayah kerja puskesmas paga. *J Keperawatan dan Kesehat Masy.* 2021;7(1).
5. Nuraeni E, Habibi A, Baejuri ML. Dukungan keluarga dengan kualitas hidup lansia hipertensi di Puskesmas Balaraja. *Pros Simp Nas Multidisiplin.* 2022;2.
6. Probosiwi N, Saristiana Y. Dukungan Keluarga Dengan Kualitas Hidup Lansia Yang Mengalami Hipertensi di Wilayah Kerja Puskesmas Sukorame. *Java Heal Jounal.* 2020;7(1).
7. Mala HA, Ratag BT, Sekeon SAS. Hubungan Antara Kepatuhan Minum Obat Dan Dukungan Keluarga Dengan Kualitas Hidup Penderita Hipertensi Di Wilayah Kerja Puskesmas Ranomuut Kota Manado. *KESMAS.* 2022;11(1).
8. Latif A, Sriyati SK, Asnindari LN. Hubungan kepatuhan minum obat dengan kualitas hidup pada pasien hipertensi di Puskesmas Mantrijeron. *Universitas' Aisyiyah*

- Yogyakarta; 2022.
9. Nurhasana H, Mahmud NU, Sididi M. Gambaran Pengetahuan dan Sikap Pencegahan Kekambuhan Hipertensi pada Penderita Hipertensi di Wilayah Kerja Puskesmas Antang Kota Makassar Tahun 2020. *Wind Public Heal J.* 2020;157-65.
 10. Kementrian Kesehatan RI. Laporan Provinsi Sulawesi Selatan RISKESDAS 2018. Makassar: Lembaga Penerbit Badan Litbang Kesehatan; 2019.
 11. Merlis S. Hubungan Antara Lama Menderita Hipertensi dan Motivasi Berobat Dengan Kepatuhan Minum Obat Pada Penderita Hipertensi. *Nurs Insid Community.* 2022;5(1):1-5.
 12. Prastika YD, Siyam N. Faktor risiko kualitas hidup lansia penderita hipertensi. *Indones J Public Heal Nutr.* 2021;1(3):407-19.
 13. Abdu S, Satti YC, Payung F, Sopotan HA. Analisis Kualitas Hidup Pasien Pasca Stroke Berdasarkan Karakteristik. *J Keperawatan Florence Nightingale.* 2022;5(2):50-9.
 14. Abdiana A. Kualitas Hidup Penderita Penyakit Hipertensi Peserta Prolanis Di Puskesmas Kecamatan Padang Utara Kota Padang. *J Sehat Mandiri.* 2019;14(2):38-47.
 15. Pebiani P, Ruhyana R, Sriyati S. Analisis kualitas hidup pasien hipertensi anggota prolanis Puskesmas Gamping 2. In: *Prosiding Seminar Nasional Penelitian dan Pengabdian Kepada Masyarakat LPPM Universitas' Aisyiyah Yogyakarta.* 2024. p. 445-66.
 16. Chendra R, Misnaniarti M, Zulkarnain M. Kualitas Hidup Lansia Peserta Prolanis Penderita Hipertensi di Wilayah Kerja Puskesmas Kenten Laut. *JUMANTIK (Jurnal Ilm Penelit Kesehatan).* 2020;5(2):126-37.
 17. Handayani M, Kusyairi A, Suhari. Hubungan dukungan keluarga dan self-care dengan kualitas hidup pasien hipertensi. *J Kesehat Tambusai.* 2023;4(2):1871-81.
 18. Purwitaningtyas RY, Prayitno SH. Hubungan Dukungan Keluarga terhadap Peningkatan Kualitas Hidup Lansia di Desa Sumbergondo Kecamatan Glenmore Kabupaten Banyuwangi. *J Ilm Kesehat Rustida.* 2017;3(2):402-7.
 19. Panjaitan BS. Hubungan Dukungan Keluarga Terhadap Kualitas Hidup Lansia. *Klabat J Nurs.* 2020;2(2):35-43.
 20. Nurmalita V, Annisaa E, Pramono D. Hubungan kepatuhan minum obat antihipertensi terhadap kualitas hidup pada pasien hipertensi. *Faculty of Medicine;* 2019.
 21. Setiawan D. Hubungan Kepatuhan Minum Obat terhadap Kualitas Hidup Pasien



- Hipertensi. J Kesehat STIKES Darul Azhar Batulicin. 2019;8(1).
22. Islami NKR. Perbedaan Kualitas Hidup Perokok dan Bukan Perokok (SF-36) pada Pegawai PT. Telkom di Medan. Universitas Sumatera Utara; 2019.
 23. Rumagit HCN, Sekeon SAS, Kalesaran AFC. Hubungan Antara Status Merokok Dan Hipertensi Dengan Kualitas Hidup Pada Penduduk Kelurahan Tumumpa Dua Kecamatan Tuminting Kota Manado. KESMAS J Kesehat Masy Univ Sam Ratulangi. 2018;7(4).