

Combinations of Pakcoy (Brassica Rapa L) Juice and Anti Hypertension Drugs for Lowering Blood Pressure in Hypertension Pregnant Women in Handil Baru Health Center Year 2023

Ulfa Siti Mardiyah^{1*}, Nina Mardiana², Damai Noviasari³, Ernani Setyawati
Health Polytechnic East Borneo

Corresponding Author: Ulfa Siti Mardiyah ulfa.s.mardiyah@gmail.com

ARTICLE INFO

Keywords: Pakcoy, Blood Pressure, Pregnancy, Hypertension

Received : 10 July

Revised : 16 August

Accepted: 19 September

©2023 Mardiyah, Mardiana, Noviasari, Setyawati: This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

Handil Baru Health Center had cases of hypertension in 2021 as many as 27 cases of pregnant women and 1 case of maternal death and 40 LBW babies was found, one of the causes of preterm parturition was due to mothers experiencing preeclampsia or eclampsia. So far, midwives have tried to reduce cases of hypertension through counseling. To determine the effect of a combination of Pakcoy (Brassica rapa L) juice and anti-hypertensive drugs on reducing blood pressure in hypertensive pregnant women at the Handil Baru Health Center. This type of research is quasi-experimental, with a One Group Pre-Test - Post-Test Design without a Control Group. The population is all hypertensive pregnant women at the Handil Baru Health Center in January-July 2023 totaling 14 people. The sampling technique in this study is total sampling, so that the sample fits the population. data using independent t test. Results: There is an effect of hypertension medication and Pakcoy (Brassica rapa L) juice on blood pressure (p value $0.000 < \alpha: 0.05$). Support for hypertension medication can be given Pakcoy juice, because Pakcoy which contains potassium, calcium and magnesium can help lower blood pressure naturally. Consuming 4,700 milligrams of potassium daily can lower blood pressure caused by high sodium intake. There is a combination effect of giving Pakcoy juice (Brassica rapa L) and anti-hypertensive drugs on blood pressure in hypertensive pregnant women at the Handil Baru Health Center about 19%. Handil Baru Health Center is expected to socialize health education about preventing hypertensive pregnant women

INTRODUCTION

Hypertension in pregnant women is the second highest cause of AKI. Hypertension is a condition where a person has diastolic blood pressure of at least 90 mmHg and systolic blood pressure of at least 140 mmHg with an increase in diastolic and systolic blood pressure of at least 15 mmHg and 30 mmHg respectively. If hypertension occurs at more than 20 weeks of pregnancy, it is called hypertension in pregnancy, while hypertension of less than 20 weeks is called severe hypertension (Andriyani, 2021).

Reducing blood pressure in pregnant women with hypertension can be done pharmacologically or non-pharmacologically. Non-pharmacological therapy consists of adjusting a diet with a diet rich in vegetables and high in potassium by consuming Pakcoy (*Brassica rapa L*) food made in the form of juice or green smoothies. Pak choy contains many nutrients including protein, vegetable fat, calories, carbohydrates, fiber, calcium, magnesium, sodium, Ca, P, Fe, Vitamin A, Vitamin B, and Vitamin C, so as a leaf vegetable, pak choy is a rich source of vitamins and minerals. (Damayanti et al, 2019).

Pakcoy which contains potassium, calcium and magnesium can help lower blood pressure naturally. American Journal of Clinical Nutrition, consuming 4,700 milligrams of potassium every day can reduce blood pressure caused by high sodium intake (Fahrudin, 2019). The results of Mayangsari's research (2020), showed a decrease in blood pressure in clients who were given Pakcoy green smoothies for 1 week.

LITERATURE REVIEW

Pakcoy is usually used for consumption in various forms of food such as soup, pickles, stir-fries, and so on. Pakcoy contains very high amounts of beta carotene, vitamin C and vitamin B which act as antioxidants and contains iron, calcium and phosphorus. The nutritional content in pak choy is very good, especially for pregnant women because it can prevent anemia. Apart from that, pak choy can ward off hypertension, heart disease, and reduce the risk of various types of cancer. Therefore, pak choy contains secondary metabolite compounds which have antioxidant content so that it has the effect of reducing total blood cholesterol levels. According to research results, pak choy can reduce total blood cholesterol levels significantly compared to controls (Juliarti, 2021). During pregnancy the need for folate increases. Insufficient folate intake can cause complications, such as spina bifida and anencephaly. Including dark leafy vegetables in pregnant women's diet, such as bok choy, can help pregnant women meet their increased folate needs to ensure a healthy pregnancy (Fahrudin, 2019).

A preliminary study at the Handil Baru Community Health Center found that in 2021 there were 27 cases of hypertension from pregnant women. As of November 2022, 1 case of maternal death was found and 40 babies were born with LBW, one of the causes of preterm birth was due to the mother experiencing preeclampsia or eclampsia. There were 14 cases of hypertension in pregnant women until July 2023. So far, midwives have tried to reduce cases of hypertension through education, but the effectiveness of pokchoy juice has never been seen to reduce the blood pressure of pregnant women with hypertension.

Based on the description of this phenomenon, researchers are interested in conducting research with the title "Combination of Giving Pakcoy (Brassica rapa L) Juice and Anti-Hypertensive Medications to Reduce Blood Pressure in Hypertensive Pregnant Women at the Handil Baru Community Health Center in 2023".

METHODOLOGY

This type of research is quasi-experimental, with a One Group Pre-Test – Post-Test Design without a Control Group. The population, namely all hypertensive pregnant women at the Handil Baru Health Center in January-June 2023, is 14 people. The sampling technique in this research is total sampling, so that the sample matches the population data using independent t test.

RESULTS

Univariate Analysis Respondent Characteristics

Table 1. Frequency Distribution of Respondent Characteristics at Handil Baru Community Health Center in 2023

Karakteristik Responden	N=14	%
Usia Ibu		
< 20 tahun	2	14,3
20-35	4	28,6
> 35 tahun	8	57,1
Usia Kehamilan		
Trimester 1	4	28,6
Trimester 2	10	71,4
Paritas		
0 anak	8	57,1
3-4 anak	6	42,9
Pendidikan		
SMP	6	42,9
SMA	8	57,1
Pekerjaan		
IRT	14	100

Sumber : Data Primer, 2023

The characteristics of the respondents were that most hypertensive pregnant women aged > 35 years amounted to 8 people (57.1%), 10 people aged 2 trimester of pregnancy (71.4%), parity 0 children (primigravida) totaled 8 people (57.1%), 8 people (57.1%) had completed high school education and 14 people (100%) worked as housewives.

- a. Blood pressure before and after administration of antihypertensive drugs in hypertensive pregnant women

Table 2. Frequency Distribution of MAP Blood Pressure Before and After Administering Anti-Hypertension Drugs to Hypertensive Pregnant Women at Handil Baru Community Health Center in 2023

Kelompok	Mean	Minimal	Maksimal
Pre Test	113,886	102	120,7
Post Test (Obat Anti Hipertensi)	95,929	93	98,7

Sumber : Data Primer, 2023

The average blood pressure score before administering anti-hypertension drugs to hypertensive pregnant women was 113.886. The average blood pressure score after administering anti-hypertension drugs to hypertensive pregnant women is 95.929. This shows a decrease in blood pressure after administering anti-hypertension drugs to hypertensive pregnant women.

b. Blood Pressure Before and After Administering Pakcoy (Brassica Rapa L) Juice and Anti-Hypertension Drugs to Hypertensive Pregnant Women

Table 3. Distribution of MAP Blood Pressure Before and After Administration of Pakchoy (Brassica Rapa L) Juice and Anti-Hypertension Drugs in Hypertensive Pregnant Women at Handil Baru Community Health Center in 2023

Kelompok	Mean	Minimal	Maksimal
Pre Test	113,886	102	120,7
Post Test (Obat Anti Hipertensi dan Jus Pakcoy)	94,757	92	96,3

Sumber : Data Primer, 2023

The average blood pressure score before administering Pakcoy (Brassica rapa L) juice and anti-hypertension drugs to hypertensive pregnant women was 113.886. The average blood pressure score after administering Pakcoy (Brassica rapa L) juice and anti-hypertension drugs to hypertensive pregnant women was 94.757. This shows a decrease in blood pressure after administering Pakcoy (Brassica rapa L) juice and anti-hypertension drugs to hypertensive pregnant women.

Bivariate Analysis

Table 4. The Effect of the Combination of Giving Pakchoy (Brassica Rapa L) Juice and Anti-Hypertension Drugs on Reducing Blood Pressure in Hypertensi Pregnant Women at the Handil Baru Community Health Center

Analisis Tekanan Darah	t	p
Pre Test dengan Post Test Obat Anti Hipertensi	6,830	0,000
Pre Test dengan Post Test Jus Pakcoy dan Obat Anti Hipertensi	7,368	0,000
Obat Anti Hipertensi dengan Jus Pakcoy dan Obat Anti Hipertensi	-1,364	0,198

Sumber : Data Primer, 2023

Blood pressure before and after administering anti-hypertensive drugs to hypertensive pregnant women at the Handil Baru Health Center obtained a p value of $0.000 < 0.05$, meaning that there was an effect of administering anti-hypertension drugs on reducing blood pressure in hypertensive pregnant women at the Handil Baru Health Center. Blood pressure before and after administering Pakcoy (Brassica rapa L) juice and anti-hypertension medication on blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center obtained a p value of $0.000 < 0.05$, meaning that there is a combination effect of administering Pakcoy (Brassica rapa L) juice and medication. anti-hypertension to reduce blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center. The difference in blood pressure after administering anti-hypertensive drugs and after Pakcoy (Brassica rapa L) juice and anti-hypertension drugs in hypertensive pregnant women at the Handil Baru Community Health Center obtained a p value of $0.198 > 0.05$, meaning there was no difference in blood pressure after administering anti-hypertensive drugs and after giving Pakcoy (Brassica rapa L) juice and anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center.

DISCUSSIONS

Blood pressure before and after administration of antihypertensive drugs in hypertensive pregnant women

Based on the research results, it is known that the average blood pressure score before administering anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center is 113.886. The average blood pressure score after administering anti-hypertension medication to hypertensive pregnant women at the Handil Baru Community Health Center is 95.929. This shows a decrease in blood pressure after administering anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center.

The results of this study are in accordance with research by Chalid (2018) showing that hypertension in pregnant women can be caused by various factors including age with a MAP above 100. Hariati's (2020) research shows that hypertension in pregnant women can be caused by various factors including

parity with systolic > 140 . Mayangsari (2020) shows that hypertension in pregnant women can be caused by various factors, including a previous history of hypertension.

The causes of hypertension in pregnancy are not yet clearly known. Many theories have been put forward about the occurrence of hypertension in pregnancy, but none of these theories is considered absolutely correct. Although the cause is still unknown, evidence of clinical manifestations begins to appear early in pregnancy, in the form of subtle pathophysiological changes that accumulate throughout pregnancy, and eventually become clinically apparent. These clinical signs are thought to be the result of vasospasm, endothelial dysfunction, and ischemia. (Imaroh et al, 2018).

Therefore, the occurrence of hypertension in pregnant women can be caused by gravidity, multiple pregnancies, mother's age, family history of hypertension, hypertension that existed before pregnancy, high body mass index and lack of calcium consumption.

Blood pressure after administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center.

Based on the research results, it is known that the average blood pressure score before administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center is 113,886. The average blood pressure score after administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension medication to hypertensive pregnant women at the Handil Baru Community Health Center was 94.757. This shows a decrease in blood pressure after administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center.

According to research by Mayangsari (2020), there was a decrease in blood pressure in clients who were given Pakcoy green smoothies for 1 week. Likewise, the results of Juliarti's research (2021) show that pak choy can significantly reduce total blood cholesterol levels compared to controls.

Reducing blood pressure in pregnant women with hypertension can be done pharmacologically or non-pharmacologically. Non-pharmacological therapy consists of adjusting a diet with a diet rich in vegetables and high in potassium by consuming Pakcoy (*Brassica rapa L*) food made in the form of juice or green smoothies. Pak choy contains many nutrients including protein, vegetable fat, calories, carbohydrates, fiber, calcium, magnesium, sodium, Ca, P, Fe, Vitamin A, Vitamin B, and Vitamin C, so as a leaf vegetable, pak choy is a rich source of vitamins and minerals. (Damayanti et al, 2019).

During pregnancy the need for folate increases. Insufficient folate intake can cause complications, such as spina bifida and anencephaly. Including dark leafy vegetables in pregnant women's diet, such as bok choy, can help pregnant women meet their increased folate needs to ensure a healthy pregnancy (Fahrudin, 2019).

Therefore, it was concluded that there was a decrease in blood pressure in hypertensive pregnant women after one week of consuming Pakcoy (*Brassica rapa*

L) juice and anti-hypertension drugs. This is because pak choy contains secondary metabolite compounds which have antioxidant content so that they have the effect of reducing total blood cholesterol levels.

The effect of the combination of giving Pakcoy juice (*Brassica rapa L*) and anti-hypertension drugs on reducing blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center.

Based on the research results, it is known that the blood pressure before and after administering anti-hypertensive drugs to hypertensive pregnant women at the Handil Baru Community Health Center obtained a p value of $0.000 < 0.05$, meaning that there was an effect of administering anti-hypertensive medication on reducing blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center.

Blood pressure before and after administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension medication on blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center obtained a p value of $0.000 < 0.05$, meaning that there is a combination effect of administering Pakcoy (*Brassica rapa L*) juice and medication. anti-hypertension to reduce blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center. The difference in blood pressure after administering anti-hypertensive drugs and after Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs in hypertensive pregnant women at the Handil Baru Community Health Center obtained a p value of $0.198 > 0.05$, meaning there was no difference in blood pressure after administering anti-hypertensive drugs and after giving Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs to hypertensive pregnant women at the Handil Baru Community Health Center.

According to research by Mayangsari (2020), there was a decrease in blood pressure in clients who were given Pakcoy green smoothies for 1 week. Likewise, the results of Juliarti's research (2021) show that pak choy can significantly reduce total blood cholesterol levels compared to controls.

The non-pharmacological approach is the initial treatment before adding hypertension drugs, besides needing attention for someone who is on drug therapy. Meanwhile, in patients with controlled hypertension, this non-pharmacological approach can help reduce drug doses in some sufferers. Therefore, lifestyle modification is an important thing to pay attention to, because it plays a role in the successful treatment of hypertension (Hikayati, 2018).

Therefore, it was concluded that there was a combined effect of giving Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs on reducing blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center. This is because the nutritional content in pak choy is very good, especially for pregnant women, it contains secondary metabolite compounds which contain antioxidants so that they have the effect of reducing total blood cholesterol levels.

CONCLUSIONS AND RECOMMENDATIONS

The average blood pressure score or what is usually called MAP before administering hypertension medication was 113.886 and after administering anti-hypertension medication to hypertensive pregnant women at the Handil Baru Community Health Center, namely 95.929. This shows that there is an effect of anti-hypertension therapy on pregnant women by 17%. The average blood pressure or MAP score before administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension medication was 113.886 and after administering Pakcoy (*Brassica rapa L*) juice and anti-hypertension medication to hypertensive pregnant women at the Handil Baru Community Health Center, namely 94.757. The decrease in the amount of MAP in this intervention shows that there was a greater effect when giving pak choy juice and anti-hypertension medication to pregnant women, namely a decrease in MAP of 19%. There was a combined effect of giving Pakcoy (*Brassica rapa L*) juice and anti-hypertension drugs on reducing blood pressure in hypertensive pregnant women at the Handil Baru Community Health Center (p value $0.000 < \alpha: 0.05$).

The Handil Baru Community Health Center is expected to provide health education outreach about preventing hypertension in pregnant women and also provide pakchoy juice food through visits to homes or health service locations which are carried out periodically or repeatedly and evenly distributed in their work area, thereby reducing the incidence of hypertension in pregnant women. . Pregnant women are expected to seek information about pregnancy in health services or on social media to obtain information about pregnancy to prevent hypertension.

REFERENCES

- Andriyani. 2021. Determinan Kejadian Hipertensi pada Ibu Hamil di Kota Bekasi, Jawa Barat. *Jurnal Kedokteran dan Kesehatan*.
- Amalia, H.N. 2019. Pengaruh Relaksasi Nafas Dalam Terhadap Penurunan Tekanan Darah Pada Ibu Hamil Hipertensi Di Puskesmas Kendit Kecamatan Kendit Situbondo. Laporan Penelitian. Situbondo.
- Arikunto, S. 2018. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Astuti, Maya. 2019. *Buku Pintar Kehamilan*. Jakarta: EGC.
- Bandiara, R. 2018. An Update Management Concept in Hypertension. Sub Bagian Ginjal Hipertensi Bag. Ilmu Penyakit Dalam FK UNPAD/RS Dr.Hasan Sadikin. Bandung.
- Chalid, Ifdaliah. 2018. Pengaruh penyuluhan dan konsumsi minuman lokal terhadap tekanan darah ibu hamil di puskesmas kassi-kassi Kota Makassar. *Jurnal Mitrasehat, Volume VIII Nomor 2*
- Damayanti NS, DW Widjajanto, Sutarno. 2019. Pertumbuhan dan produksi tanaman sawi pakcoy (*Brassica rapa l.*) akibat dibudidayakan pada berbagai media tanam dan dosis pupuk organik. *J Agro Complex 3(3) : 142-150*.
- Dinas Provinsi Kalimantan Timur. 2022. *Angka Kematian Ibu di Kalimantan Timur*.
- Fahrudin, Fuad. 2019. Budidaya Pakcoy (*Brassica rapa L.*) menggunakan Ekstrak Teh dan Pupuk Vermikompos. Skripsi Universitas Sebelas Maret.
- Febyan, F. dan Pamaron, I.B.R. 2020. Faktor Risiko Kejadian Hipertensi dalam Kehamilan di Rumah Sakit Bhayangkara Denpasar. *Indones. J. Obstet. Gynecol. Sci. 3(2)*.
- Hariati, Niken Widyastuti. (2020). Fruit and vegetable juice formulation for blood pressure control in hypertensive elderly. *Jurnal Gizi dan Dietetik Indonesia (Indonesian Journal of Nutrition and Dietetics) Vol. 8, No. 1, 2020: 45-53*
- Harsiwi, Sri. 2021. Hubungan graviditas dan indeks massa tubuh (IMT) dengan kejadian hipertensi dalam kehamilan (HDK) pada ibu hamil di Puskesmas Sewon 1 Tahun 2020. Skripsi thesis, Poltekkes Kemenkes Yogyakarta.
- Hastono. 2018. *Analisis Data Pada Bidang Kesehatan*. Jakarta: PT Raja Grafindo Persada.

- Hikayati, Flora. 2018. Penatalaksanaan Non Farmakologis Terapi Komplementer Sebagai Upaya Untuk Mengatasi Dan Mencegah Komplikasi Pada Penderita Hipertensi Primer Di Kelurahan Indralaya Mulya Kabupaten Ogan Ilir. *Jurnal Pengabdian Masyarakat*. Universitas Sriwijaya.
- Imaroh, I.I., Nugraheni, S. A. & Dharminto. 2018. Faktor Risiko Yang Mempengaruhi Kejadian Hiperensi Pada Ibu Hamil Di Wilayah Kerja Puskesmas Kedungmundu, Kota Semarang Tahun 2017. *J. Kesehat. Masy.* 6, 570-580.
- Jasmine, Shofi. 2021. Faktor-faktor yang berhubungan dengan hipertensi dalam kehamilan dan menurunkan angka hipertensi dalam kehamilan di Rumah Sakit Ibu dan Anak Cinta Kasih tahun 2021. *Motorik Journal Kesehatan*.
- Jevšnik, Mojca. (2021). Food Safety Knowledge and Practices of Pregnant Women and Postpartum Mothers in Slovenia. Faculty of Health Sciences, University of Ljubljana, Zdravstvena pot 5, 1000 Ljubljana, Slovenia; file:///C:/Users/Asus/Downloads/foods-10-02412.pdf
- Juliarti, Rika. (2021). Pemberian ekstrak etanol daun Pakcoy (*Brassica rapa subsp. Chinensis*) memberi efek pada penurunan kadar kolesterol total darah mencit.
<http://eprints.stikesalfatah.ac.id/id/eprint/100/1/KTI%20RIKA%20JULIARTI.pdf>
- Kemenkes RI. 2021. Profil Kesehatan Indonesia Tahun 2020. Kementerian Kesehatan RI. Jakarta :Kemenkes.
- Kenia, N.M. 2018. Pengaruh Relaksasi (Aromaterapi Mawar) Terhadap Perubahan Tekanan Darah Pada Lansia Hipertensi. *Jurnal Stikes* 6(1).
- Kuswaningsih. 2021. Pengaruh Teknik Relaksasi Nafas Dalam Terhadap Kecemasan Pada Ibu Hamil Dengan Hipertensi di Puskesmas Prangat Kabupaten Kutai Kartanegara. Skripsi Politeknik Kesehatan Kementerian Kesehatan Republik Indonesia Kalimantan Timur.
- Liszayanti, Fety. 2019. Pengaruh Terapi Rendam Kaki Dengan Air Hangat dan Serai Terhadap Tekanan Darah Ibu Hamil Penderita Pre Eklamsi. <https://prosiding.unimus.ac.id/index.php/mahasiswa/article/view/477>
- Maimunah, Endang. (2018). Uji Efektivitas Air Buah Jeruk Nipis (*Citrus aurantifolia*) dalam menghambat *Candida albicans*. https://repo.stikesicme-jbg.ac.id/1477/2/151310011_Endang%20Maimunah_%20KTI%20PDF.pdf

- Manuaba, I.B.G. 2017. Ilmu Kebidanan Penyakit Kandungan dan Keluarga Berencana Untuk Pendidikan Bidan. Jakarta: EGC.
- Mayangsari, Riska. 2020. Pendampingan Pemberian Green Smoothies Pakcoy Untuk Menurunkan Tekanan Darah Pasien Hipertensi Di Wilayah Kerja Puskesmas Poasia. Karya Kesehatan Journal of Community Engagement.
- Notoadmodjo, S. 2017. Metodologi Penelitian Kesehatan. PT Rineka Cipta. Jakarta.
- Novianti. 2017. Asuhan Kebidanan Komprehensif Kehamilan, Persalinan, Bayi Baru Lahir (BBL), Nifas Dan Keluarga Berencana (KB) Pada Ny. Y G2P1A0 Umur 30 Tahun Umur Kehamilan 38 Minggu 3 hari di Puskesmas II Tambak. Jurnal Kebidanan.
- Nugroho, I.A. 2017. Efektivitas Pijat Refleksi Kaki Dan Hipnoterapi Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi. Jurnal Ilmiah Kesehatan Keperawatan 8 (2).
- Nursalam. 2018. Metodologi Penelitian Ilmu Keperawatan : Pendekatan Praktis. Edisi 4. Jakarta : Salemba Medika.
- Prawiroharjo, S. 2018. Ilmu Kebidanan. Jakarta : Bina Pustaka.
- Purnawan, I. 2018. Pengaruh Terapi Mandi Uap Terhadap Respon Fisiologis Stress Penderita Hipertensi. Jurnal Keperawatan Soedirman (The Soedirman Journal Of Nursing), 10(1).
- Rochmawati, D.H. 2017. Teknik Relaksasi Otot Progressif Untuk Menurunkan Kecemasan. Makalah Kesehatan Program Studi S1 Keperawatan Fakultas Ilmu Keperawatan. Universitas Islam Sultan Agung Semarang.
- Sanjaya, A. 2019. Hubungan Interaksi Sosial dengan Kesepian Pada Lansia. Naskah Publikasi Fakultas Keperawatan Universitas Sumatera Utara.
- Setiawan GP. 2018. Pengaruh dosis vermikompos terhadap pertumbuhan tanaman pakcoy (*Brassica rapa L.*) dan perubahan beberapa sifat kimia tanah Ultisol taman Bogo. Lampung: Fakultas Pertanian. Universitas Lampung.
- Sugiyono. 2020. Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung. ALFABETA.
- WHO. 2019. Departement of Reproductive Health and Research. Maternal Mortality. World Health Organization

Mardiyah, Mardiana, Noviasari, Setyawati

Wiknjosastro, H. 2019. Ilmu Kebidanan. Jakarta : Bina Pustaka Sarwono Prawirohardjo.

Yuliasari, Dewi. (2021). Konsumsi madu Meningkatkan HB pada IBu Hamil Di Desa Jati Baru. JPM (Jurnal Perak Malahayati), Vol 3, No. 2. November 2021, E:ISSN 2684-8899 (Online) P:ISSN 2685-547X (Cetak), Hal 124-1