

---

## A Systemic Review: The Impact of Patient Counselling on Medication Adherence in Hypertensive Patients

Vaghmarya Dipika M.\*, Dr. Hetal Solanki D., Ganvit Tara A. and Gavli Kaushika A.

Department of Pharmacology and Pharmacy Practice, Shivam Pharmaceutical Studies and Research  
centre Valasan, Anand, India  
dipikavaghmarya222@gmail.com

---

### ARTICLE DETAILS

---

**Research Paper**

---

**Keywords:**

*counselling, Hypertension,  
Adherence, Blood pressure,  
Medication*

---

---

### ABSTRACT

---

One of the main global public health concerns is hypertension (HTN), contributing to 13% of worldwide mortality and increasing the cardiovascular disease risk, renal failure and stroke. Medication adherence is critical for managing hypertension effectively, yet poor adherence remains a significant barrier to optimal treatment outcomes. This systematic study assesses how counseling interventions affect hypertension patients' blood pressure control and medication adherence. 23 papers in all, including cross-sectional analysis, quasi-experimental research, and randomized controlled trials, were examined.. Findings indicate that pharmacist-led interventions, health literacy programs, and digital health strategies significantly improve adherence and blood pressure outcomes. Key factors influencing adherence include patient knowledge, social support, and personalized counseling. Despite the effectiveness of these interventions, challenges such as socioeconomic disparities, comorbidities, and rural residence impact adherence levels. A multifaceted approach integrating patient education, behavioral counseling, pharmacist-led support, and technological tools is recommended for sustainable hypertension management. Future research should focus on personalized strategies that address individual barriers to adherence. A

---



collaborative, patient-centered approach is essential for improving long-term medication adherence and reducing hypertension-related complications.

---

DOI : <https://doi.org/10.5281/zenodo.15225425>

---

## INTRODUCTION

Hypertension (HTN) is among the most important public health concerns. which is also thought to be the primary risk factor for death worldwide. In addition to being a major risk factor for the development of cardiovascular disease, which affects 25% of adults, hypertension currently contributes 13% of deaths worldwide. [1] The mortality and morbidity rates associated with hypertension are significant in India. In India, hypertensive heart disease was responsible for over 2.5 million disability-adjusted life years and 98,912 deaths, according to the 2017 Study on the Global Burden of Disease. [2] It is the main risk factor for coronary artery disease (CAD), heart failure, and stroke and if left unchecked, it can have a negative impact on health. [3] One reason for the rise in yearly morbidity and mortality is the trend toward sedentary living. The risk of heart disease can be decreased by heeding recommendations. Blood pressure management is linked to certain specific diseases. That can greatly reduce the risk of having potentially fatal heart, brain, or kidney issues. Insufficient understanding and noncompliance may result in uncontrollable problems that impact blood pressure. [1,4] The Number of Hypertension Prevalence As the number of cases of hypertension rises annually, it is projected that 1.15 billion people worldwide, or almost 29% of the entire population, would have the condition in 2025 [5]. Patients with hypertension should follow a healthy lifestyle and the combination of medication and counselling Those who require adjustment include those who suffer from hypertension. [6] Uncontrolled blood pressure may be discouraged by adherence to this therapy. [7] A few studies were conducted to determine medication adherence in patients using different medication adherence scales and to compare medication adherence in hypertension patients with treated and uncontrolled situations.

A consistently elevated systolic blood pressure of 140 mmHg or higher and a diastolic blood pressure of 90 mmHg or higher are the hallmarks of hypertension, sometimes referred to as high blood pressure. [8]

Blood pressure is commonly expressed as the ratio of the diastolic blood pressure (the pressure when the heart relaxes) to the systolic blood pressure (the pressure that the blood applies to the artery walls when the heart contracts). [9]



## MEDICATION ADHERENCE

described as "the degree to which a patient's behavior complied with a healthcare provider's recommendations." [10] is consistent with ▪ The most crucial element influencing therapy results is medication adherence, particularly for individuals with long-term conditions like hypertension. ▪ No matter how effective the medication is, it won't work unless the patient takes it. Because it substantially undermines the advantages of modern medical care and places a heavy cost on both individual patients and the health care system overall, low drug adherence has gained prominence. [11]

## COUNSELLING

The process of giving patients information, guidance, and support to help them take their medications as prescribed is known as patient counselling. Patients are more likely to use their drugs safely and effectively if they are knowledgeable about them. Primary, secondary, and tertiary healthcare are offered in India, and the majority of patients are treated with medication. Most prescribers don't have much time to explain how to use these drugs to their patients because of their busy schedules. Insufficient knowledge could lead to the patient not taking the drug as prescribed, which could lead to side effects, therapeutic failure, more costs for research and treatment, or even hospitalization. The following outcomes are the goal of effective patient counselling: Findings, improved comprehension of the condition by the patient. Better adherence to medicines More efficient medication therapy decreased rates of prescription errors, side effects, and needless medical expenses enhanced patient quality of life.[12]

## METHODS

### LITERATURE SEARCH STRATEGY

This review article offers a comprehensive summary of several research that were selected based on a certain theme. The secondary data used in this study came from the findings of earlier research projects rather than direct observations. Research articles having a predetermined theme and national and worldwide recognition served as secondary data sources. PubMed and Google Scholar are two databases used in this systematic review's literature search, which spans the years 2015–2024.

Utilize keywords to narrow down or broaden your search so that it's easier to find the article you're looking for. The terms counselling AND adherence, counselling AND blood pressure, and counselling AND



hypertension are used in the search strategy. Finding articles in the order of title, abstract, and full text is how the search is conducted. Counselling impact on hypertension patients' adherence and blood pressure management has been documented in 200 publications. Twenty-three studies were chosen for the final analysis out of the original 200 research.

## RESULT

Table 1. Outcome of Article Extraction

No	Reference(s)	Type of Study	Type of intervention	Outcome
1)	[13]	Medication possession ratio (MPR) is the scale for a randomized controlled experiment.	A comprehensive pharmacist intervention involving six months of telephone follow-up, medication, review, customized adherence counseling with motivational interviewing, and joint care	The 12-month nonadherence rate of 20.3% in the intervention group compared to 30.2% in the control group demonstrated a substantial improvement in medication adherence.
2)	[14]	study using a cross-sectional methodology and observational analysis	Patient information leaflets (PILs) are used in patient counseling and education.	The intervention group's systolic blood pressure significantly decreased by 10 mmHg ( $p < 0.0001$ ).
		study using a cross-sectional	Evaluation of patients'	discovered a significant relationship between



3)	[15]	methodology and observational analysis	understanding of hypertension and its relationship adherence to medication Knowledge-Level Scale for Hypertension; Adherence to Medication and Refills Scale (ARMS)	patients' comprehension levels and their compliance with Treatment of hypertension
4	[16]	Prospective interventional study	Patient counseling sessions led by a clinical pharmacist with an emphasis on managing hypertension and drug adherence	According to the study, hypertension patients' medication adherence significantly improved after seeing the clinical pharmacist.
5				
6	[17]	Randomized controlled trial	Program for health literacy-based self-management education	Medication adherence considerably improved and mean systolic and diastolic blood pressures dropped following the intervention.
7	[18]	Cross-sectional study	Assessment of health literacy and social support	Both traits were significantly connected with improved medication adherence.
8	[19]	A Quasi - Experimental Study	A cognitive-behavioral treatment	The intervention group demonstrated significant



			aimed at improving older patients' adherence to antihypertensive medication through psychoeducation and cognitive restructuring	improvements in treatment plan adherence and a reduction in the proportion of patients with uncontrolled hypertension when compared to the control group.
9	[20]	Cross-sectional study	This study is observational and most likely makes use of self-reported adherence a validated medication adherence scale, like the Morisky Medication Adherence Scale (MMAS).	The degree of medication adherence among hypertension patients is the main outcome. The study might also look at factors that impact adherence, including as demographics, awareness of hypertension, side effects, and medical support.
10	[21]	Quasi-Experimental Study	A multidisciplinary approach that includes education, counseling, and frequent follow-ups to help older hypertension individuals better regulate their blood pressure.	Over a three-month period, The systolic and diastolic blood pressure measurements of the intervention group were considerably lower than those of the control group, according to the study.



11	[22]	pretest-posttest control group design that is quasi-experimental.	Knowledge interventions are presented at different frequency (single and double exposures) in two formats: Direct Interaction (DI) and Audio-Visual (AV). HyCompS, or the Hypertension Compliance Scale	Comparing the intervention groups to the control group, notable gains were seen in the treatment of hypertension and drug adherence. Interestingly, the audio-visual version of double exposure was less successful.
12	[23]	Quasi-experimental study with control and intervention group	Over a two-year period, trained volunteers offer intensive health education with an emphasis on improvements in lifestyle and drug adherence.	The intervention group experienced a significant decrease in dietary risk factors, smoking, and low levels of physical activity. Improvements in medication adherence and blood pressure control were also noted.
13	[24]	Pre-intervention, intervention, and post-intervention phases comprise this quasi-experimental controlled study.	sessions for patient education with the goal of increasing understanding of hypertension and the significance of taking medications as prescribed.	The intervention group had improved drug adherence than the control group.



14)	[25]	Quasi-experimental design.	a three-month mobile health initiative aimed at raising patients' health literacy.	The intervention group had better medication adherence and blood pressure control than the control group.
15	[26]	Quasi-experimental	A three-month interdisciplinary approach that includes monthly pill counts, medication adherence education, family-supportive care, community-based care, and the use of computerized pill boxes as reminders.	The intervention group's blood pressure was better regulated and their systolic and diastolic readings were lower than those of the control group.
16	[27]	Quasi-experimental	Health education programs designed to enhance seniors' preventative techniques, and self-care habits about hypertension	Significant gains in hypertension-related knowledge and self-care practices were observed when comparing the intervention group to the control group.
17	[28]	Cross-sectional	The study evaluated antihypertensive medication adherence rates and determined factors that predicted poor	Medication non-adherence was more likely to occur in patients with comorbidities and those taking several drugs. One of the primary factors linked to non-





			adherence in patients who visited primary health clinics in Riyadh, Saudi Arabia.	adherence was the patients' level of disease awareness.
18	[29]	Cross-sectional	The study evaluated levels of medication adherence in individuals with hypertension and investigated related variables.	The study revealed poor adherence to antihypertensive medications, significantly associated with factors such as age, income, rural residence, and marital status
19	[30]	Cross-sectional	The study investigated patients' knowledge about hypertension and their adherence to medication.	Results showed sufficient knowledge levels but low medication adherence, with a substantial positive relationship between adherence and knowledge
20	[31]	Prospective Adherence: KAP & QOL	Quality of life, lifestyle change, adherence evaluation, patient counseling, and patient information pamphlets.	Compared to those without comorbidities (41.1%), the majority of hypertension patients (58.8%) have comorbidities, and blood pressure increases by 29.85% in people between the ages of 51 and 60. As a result, pharmacist counselling can enhance patient understanding, compliance, and quality of life.



21	[32]	The quasi-experiment MUSE for self-efficacy MMAS-8 adherence	Interventions for counselling, pamphlets, and adherence evaluation	Patients' confidence in controlling their hypertension increased after receiving counselling and pamphlets.
22	[33]	Retro-prospective cohort study	Pharmacist-led counseling over a two-month period.	Morisky Medication Adherence Scale (MMAS-8) scores increased from 4.58 to 6.28 ( $p = 0.000$ ), indicating a significant improvement in medication adherence. Both the diastolic and systolic blood pressures dropped from $91.23 \pm 12.82$ mmHg to $87.14 \pm 9.94$ mmHg ( $p = 0.014$ ) and $160.49 \pm 23.15$ mmHg to $149.04 \pm 21.02$ mmHg ( $p = 0.001$ ).
23	[34]	Randomized controlled trial.	Individualized psychosocial counseling and further patient education	Beyond what could be accomplished with routine doctor visits alone, the study found no discernible increase in blood pressure control or compliance.

## Discussion



Research articles collected from some Research articles collected from different countries. In Ten of the publications utilize the quasi-experiment approach, one uses the prospective method, three are chosen from a cross-sectional study, and three employed a randomized controlled trial. One group of hypertension individuals had no comorbidities, while the other group had comorbidities, according to the literature study. Comorbidities include heart failure, diabetes mellitus, and chronic renal failure.

Diabetes mellitus, chronic renal disease, and chronic heart disease are examples of comorbidities. In addition to providing the patient with the right medications and counseling, the intervention pharmacist has increased the patient's understanding. research papers gathered from a few nations, including America, Arabia, Indonesia, and Iran.

Twenty publications are chosen, including four from cross-sectional studies, five from randomized controlled trials, ten using the quasi-experiment method, and one using the prospective method. One group of hypertension individuals had no comorbidities, while the other group had comorbidities, according to the literature study.

Comorbidity, such as heart failure, diabetes mellitus, dyslipidemia, and chronic renal failure. Diabetes mellitus, chronic renal disease, dyslipidemia, and chronic heart disease are examples of comorbidities. In addition to providing the patient with the right medications and counseling, the intervention pharmacist has increased the patient's understanding. Twenty publications are chosen, including four from cross-sectional studies, five from randomized controlled trials, ten using the quasi-experiment method, and one using the prospective method.. One group of hypertension individuals had no comorbidities, while the other group had comorbidities, according to the literature study. Comorbidities include heart failure, diabetes mellitus, dyslipidemia, and chronic renal failure.

Diabetes mellitus, chronic renal disease, dyslipidemia, and chronic heart disease are examples of comorbidities. In addition to providing the patient with the right medications and counseling, the intervention pharmacist has increased the patient's understanding.

The results of this systematic analysis demonstrate how counseling interventions significantly improve hypertension patients' blood pressure control and medication adherence. Counseling and education-based therapies consistently showed improvements in adherence and reductions in blood pressure levels across a range of study designs, including cross-sectional studies, quasi-experimental studies, and randomized controlled trials.



Interventions with Multiple Aspects Are Successful Medication adherence and the management of hypertension were found to significantly improve in studies that included pharmacist-led counseling, interdisciplinary interventions, and mobile health programs [9, 12, 17, 21]. These therapies' individualized approach, frequent follow-ups, and integration of several healthcare providers are all factors in their success.

Health Literacy and Patient Knowledge Are Important Observational and cross-sectional research [11, 14, 16, 26] found a strong relationship between patients' adherence to therapy for hypertension and their degree of knowledge. Better adherence was demonstrated by patients who were more knowledgeable about their illness and treatment plan, highlighting the necessity of focused educational initiatives.

Support from the community and family enhances results. Involving patients' social networks in their treatment process greatly increased adherence and lifestyle changes, according to studies on social support, family-supportive care, and community-based care (22, 23).

Audio-visual and digital interventions Show Promise: Although differences in efficacy were noted depending on frequency and delivery type, mobile health programs (21) and audio-visual treatments (18) showed promise in improving medication adherence.

Even with these encouraging results, some obstacles still exist. Poor medication adherence was linked to a number of characteristics, including age, socioeconomic status, comorbidities, and living in a rural area, according to several studies (24, 25). This emphasizes the necessity of specialized interventions that tackle socioeconomic and demographic obstacles to efficient management of hypertension.

## **Conclusion**

It seems that the best way to increase medication adherence in hypertension patients is to take a diversified strategy.

Combining patient education, behavioral counseling, pharmacist-led interventions, and technological aids results in better adherence and improved health outcomes. Future research should focus on integrating these strategies into healthcare systems to maximize their impact and sustainability. Additionally, addressing individual patient barriers, including socioeconomic and psychological factors, is essential to developing personalized adherence programs that cater to diverse patient needs. Ultimately, a



collaborative and patient-centered approach remains the key to achieving optimal hypertension management and long-term adherence to antihypertensive medications.

### References:

1. Dewi, P. P. (2019). Effectiveness of Counseling for Hypertensive Patients on Adherence and Blood Pressure Outcome in Primary Care Provider in Indonesia. *International Research Journal of Pharmacy*.
2. snehal shah. (2020). Effectiveness of Amlodipine on Blood Pressure Control in Hypertensive Patients in India: A Real-World, Retrospective Study from Electronic Medical Records. *Drugs - Real World Outcomes*.
3. Benjamin EJ, Blaha MJ, Chive SE “Review Heart Disease and stroke Statistics – 2017 update,” A Report from American heart association, 2017, (10), 146-603.
4. Peacock, E., & Krousel-Wood, M. (2017). Adherence to Antihypertensive Therapy. *The Medical clinics of North America*, 101(1), 229–245. <https://doi.org/10.1016/j.mcna.2016.08.005>
5. Adnelda, W. P., Kardela, W., & Ifora, I. (2020). *A review: Effect of counseling adherence and blood pressure control in hypertensive patients*. Department of Pharmacology and Clinical Pharmacy, 6(667-672).
6. van Onzenoort, H. A., Verberk, W. J., Kessels, A. G., Kroon, A. A., Neef, C., van der Kuy, P. H., & de Leeuw, P. W. (2010). Assessing medication adherence simultaneously by electronic monitoring and pill count in patients with mild-to-moderate hypertension. *American journal of hypertension*, 23(2), 149–154. <https://doi.org/10.1038/ajh.2009.207>
7. Ambaw, A. D., Alemie, G. A., W/Yohannes, S. M., & Mengesha, Z. B. (2012). Adherence to antihypertensive treatment and associated factors among patients on follow up at University of Gondar Hospital, Northwest Ethiopia. *BMC public health*, 12, 282. <https://doi.org/10.1186/1471-2458-12-282>
8. Schroeder, K., Fahey, T., & Ebrahim, S. (2004). How can we improve adherence to blood pressure-lowering medication in ambulatory care? Systematic review of randomized controlled trials. *Archives of internal medicine*, 164(7), 722–732. <https://doi.org/10.1001/archinte.164.7.722>



9. Oparil, S., Acelajado, M. C., Bakris, G. L., Berlowitz, D. R., Cífková, R., Dominiczak, A. F., Grassi, G., Jordan, J., Poulter, N. R., Rodgers, A., & Whelton, P. K. (2018). Hypertension. *Nature reviews. Disease primers*, 4, 18014. <https://doi.org/10.1038/nrdp.2018.141>
10. Oparil, S., Acelajado, M., Bakris, G. *et al.* Hypertension. *Nat Rev Dis Primers* 4, 18014 (2018). <https://doi.org/10.1038/nrdp.2018.14>
11. G PARTHSARTHI, KARIN NYFORT, HANSEEN, MILAP C NAHATA “A Textbook of Clinical pharmacy Practice” Essential concept and Skills, 2nd Edn,
12. Joseph T. Dipro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke, Barbara G. Wells, L. Michael Posey “Pharmacotherapy Book” 6th Edn, pp 186.
13. Hedegaard, U., Kjeldsen, L. J., Pottegård, A., Henriksen, J. E., Lambrechtsen, J., Hangaard, J., & Hallas, J. (2015). Improving Medication Adherence in Patients with Hypertension: A Randomized Trial. *The American journal of medicine*, 128(12), 1351–1361. <https://doi.org/10.1016/j.amjmed.2015.08.011>
14. Shah Patel H, Oza K, Shah N, Despande S, Patel C. Effect of Patient Counseling based Intervention in Hypertensive Outpatients “Indian Journal of Pharmacy Practice.2022;15(1):22-29
15. Pristiany, L., Hingis, E. S., Priyandani, Y., & Rahem, A. (2023). Relationship between knowledge and adherence to hypertension treatment. *Journal of public health in Africa*, 14(Suppl 1), 2502. <https://doi.org/10.4081/jphia.2023.2502>
16. Medication Adherence of Hypertensive Patients: Impact of Clinical Pharmacist Intervention in Treatment of Hypertension in a Tertiary Care Hospital. (2020). *Indian Journal of Public Health Research & Development*, 11(6), 208-215.
17. Delavar, F., Pashaeypoor, S., & Negarandeh, R. (2020). The effects of self-management education tailored to health literacy on medication adherence and blood pressure control among elderly people with primary hypertension: A randomized controlled trial. *Patient education and counseling*, 103(2), 336–342. <https://doi.org/10.1016/j.pec.2019.08.028>



18. Guo, A., Jin, H., Mao, J. *et al.* Impact of health literacy and social support on medication adherence in patients with hypertension: a cross-sectional community-based study. *BMC Cardiovasc Disord* **23**, 93 (2023). <https://doi.org/10.1186/s12872-023-03117-x>
19. Bernal-Razon, C. M., Jordan-Jinez, M. L., & Padilla-Raygoza, N. (2017). Effect of a Cognitive-behavioral Program on Adherence to Antihypertensive Therapeutic Regimen in Older Adults: A Quasi-experimental Study. *International Journal of TROPICAL DISEASE & Health*, 22(2), 1–11. <https://doi.org/10.9734/IJTDH/2017/31479>
20. Bhusal, A., Jadhav, P. R., & Deshmukh, Y. A. (2017). Assessment of medication adherence among hypertensive patients: a cross-sectional study. *International Journal of Basic & Clinical Pharmacology*, 5(4), 1606–1612. <https://doi.org/10.18203/2319-2003.ijbcp20162480>
21. Woodham, N. S., Taneepanichskul, S., Somrongthong, R., Kitsanapun, A., & Sompakdee, B. (2020). Effectiveness of a Multidisciplinary Approach Intervention to Improve Blood Pressure Control Among Elderly Hypertensive Patients in Rural Thailand: A Quasi-Experimental Study. *Journal of multidisciplinary healthcare*, 13, 571–580. <https://doi.org/10.2147/JMDH.S254286>
22. Andrew, A., Hariharan, M., Monteiro, S. R., Padhy, M., & Chivukula, U. (2022). Enhancing adherence and management in patients with hypertension: Impact of form and frequency of knowledge intervention. *Indian heart journal*, 74(4), 302–306. <https://doi.org/10.1016/j.ihj.2022.06.002>
23. Le MH, Nguyen TK, Pham TT, Pham TT, Tran V. Effectiveness of a Health Education Program in Hypertensive Patients with Dyslipidemia and/or Microalbuminuria: A Quasi-Experimental Study in Vinh Long Province, Vietnam. *Healthcare (Basel)*. 2023 Aug 4;11(15):2208. doi: 10.3390/healthcare11152208. PMID: 37570448; PMCID: PMC10418689.
24. Ayodapo AO., *et al.* "Patient Education and Medication Adherence: A Quasi-Experimental Study in Tertiary Hospitals Southwestern Nigeria". *Acta Scientific Medical Sciences* 4.6 (2020): 37-44.
25. Karami, M., Ashtarian, H., Rajati, M. *et al.* The effect of health literacy intervention on adherence to medication of uncontrolled hypertensive patients using the M-health. *BMC Med Inform Decis Mak* **23**, 289 (2023). <https://doi.org/10.1186/s12911-023-02393-z>
26. Woodham NS, Taneepanichskul S, Somrongthong R, Kitsanapun A, Sompakdee B. Effectiveness of a Multidisciplinary Approach Intervention to Improve Blood Pressure Control Among Elderly



Hypertensive Patients in Rural Thailand: A Quasi-Experimental Study. *J Multidiscip Healthc.* 2020 Jul 3; 13:571-580. doi: 10.2147/JMDH.S254286. PMID: 32694916; PMCID: PMC7340360.

27. zoemena, E.L., Iweama, C.N., Agbaje, O.S. *et al.* Effects of a health education intervention on hypertension-related knowledge, prevention and self-care practices in Nigerian retirees: a quasi-experimental study. *Arch Public Health* 77, 23 (2019). <https://doi.org/10.1186/s13690-019-0349>

28. Algabbani, F. M., & Algabbani, A. M. (2020). Treatment adherence among patients with hypertension: findings from a cross-sectional study. *Clinical hypertension*, 26, 18. <https://doi.org/10.1186/s40885-020-00151-1>

29. Thirunavukkarasu, A., Naser Abdullah Alshahrani, A., Mazen Abdel-Salam, D., Homoud Al-Hazmi, A., Farhan ALruwaili, B., Awad Alsaidan, A., Narapureddy, B. R., Muteb Al-Ruwaili, A., Ghuwayli Aljabri, F., Khalaf Albalawi, R., & Alanazi, K. A. F. (2022). Medication Adherence Among Hypertensive Patients Attending Different Primary Health Centers in Abha, Saudi Arabia: A Cross-Sectional Study. *Patient preference and adherence*, 16, 2835–2844. <https://doi.org/10.2147/PPA.S388365>

30. Giakoumidakis K, Patelarou E, Brokalaki H, Bastaki M, Fotos NV, Ifantopoulou P, Christodoulakis A, Chatziefstratiou AA, Patelarou A. Patient Knowledge, Medication Adherence, and Influencing Factors: A Cross-Sectional Study among Hypertensive Patients in Greece. *Healthcare.* 2024; 12(9):916. <https://doi.org/10.3390/healthcare12090916>

31. Sindhuja C, Chowdary PS, Manohar P, Umar KM, Sailaja B. Measurement of Outcomes in Hypertensive Patients with Relation to Counselling. *Int J Pharma Res Heal Sci.* 2016;4(3):1202–9.

32. Dewanti SW, Andrajati R, Supardi S. The Effect of Counselling and Leaflet on Self-Efficacy, Adherence, and Blood Pressure of Hypertensive Patient at Two Community Health Center in Depok City. *J Kefarmasian Indones.* 2015;5(1):33–40.

33. Nasution A, Khairunnisa.,Tanjung H R (2015). IMPACTS OF COUNSELING ON ADHERENCE TO PRESCRIBED MEDICATIONS AND BLOOD PRESSURE OF HYPERTENSIVE PATIENTS IN FOUR INDONESIAN PRIMARY HEALTH CENTERS. *International Journal of Pharmacy and Pharmaceutical Sciences*, 7(3), 114-117. <https://europub.co.uk/articles/-A-578943>

34. Webb PA. Effectiveness of patient education and psychosocial counseling in promoting compliance and control among hypertensive patients. *J Fam Pract.* 1980 Jun;10(6):1047-55. PMID: 7373255.





