
Assessment of the Effectiveness of a Hypertensive Education Intervention to the Residents of Sitio Magnolia, Quezon City

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ABSTRACT

Background: In the Philippines, hypertension is one of the most common conditions that a Filipino can acquire. Understanding the level of knowledge about hypertension may contribute to its prevention.

Objectives. The objectives of this study were to assess the perceived knowledge and medication adherence through implementing education intervention to respondents in Sitio Magnolia, Quezon City; to find the difference between age-groups regarding post-test scores, on which age group acquired the most understanding, and their difference regarding medication adherence, on which age group adheres the most to their medication regimen.

Methods: The Descriptive Design was applied in this study to assess the usefulness of the hypertension flipchart as an interventional tool in enhancing the perceived knowledge of respondents in Sitio Magnolia. This design was used to describe the patient's perceived knowledge after the implementation of the educational material. Purposive sampling was implemented in gathering the participants, in accordance with the set inclusion and exclusion criteria. The education intervention was implemented on a "one-time" basis and was conducted in a small group discussion setup, where one researcher was designated to three participants (1:3). Three (3) questionnaires were given to the participants, namely the post-test, MARS questionnaire, and respondents' satisfaction questionnaire.

Results: The post-test results showed that the age groups of 20-30 and 31-40 acquired the most understanding. Regarding medication adherence, the 31-40 age group has the most adherence to their medication regimen with a mean adherence score of 8.00. In terms of the respondents' satisfaction, all respondents were highly satisfied with the education intervention with an overall mean score of 4.86.

Conclusion. Assessing knowledge and medication adherence helps prevent hypertension misconceptions, but more efforts are needed to improve overall hypertension awareness. Further studies should assess long-term impacts of education intervention regarding hypertension.

Key words: hypertension, medication adherence

In the Philippine setting, hypertension has been one of the most common conditions that Filipino aged individuals acquire. Also known as high blood pressure, hypertension is a long-term medical disorder characterized by high arterial blood pressure. It is a critical concern for world health since it increases the risk of stroke, cardiovascular disease and other

significant consequences. Within the Philippines, hypertension is prevalent in Region 7 (Central Visayas), National Capital Region (NCR) and Region 10 (North Mindanao). In contrast, Region 6 had the lowest prevalence in hypertension. Hypertensive individuals were found more in urban areas than in rural areas. In terms of age and gender, male patients have a higher prevalence of having hypertension at ages 30 to 39, especially those among aged 60 and above (Sison, et al, 2020)

Hypertension is a significant health issue in low and middle-class countries, especially in the

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Philippines. Heart disease and stroke, named the two primary causes of death, are linked to poor blood pressure control (Ona, et al, 2021). Hypertension accounted for 38.6% of cardiovascular diseases in a hospital-based survey conducted by the Philippine Heart Association, while stroke, coronary artery disease (CAD) and heart failure accounted for 30%, 17.5% and 10.4%, respectively. Diabetes, dyslipidemia, smoking, obesity and waist-hip ratio (BMI) in men and women are the prevailing cardiovascular risk factors, with corresponding percentages of 3.9%, 72%, 31%, 4.9%, 10.2% and 65.6% (Sison, et al, 2020).

As written by Ott and Schneider (2022), hypertension is the leading cause of cardiovascular disease and premature death worldwide. The trends of blood pressure has risen in Oceania, sub-Saharan Africa, and in East, South and Southeast Asia, more commonly in low-income and middle-income countries as compared to high-income countries (Zhou, et al, 2021). These high-income countries include Canada, South Korea, Australia and the UK (Zhou, et al, 2019). Due to the extensive usage of antihypertensive drugs during the last four decades, worldwide mean blood pressure (BP) has either dropped significantly or remained stable. Hypertension, on the other hand, is growing increasingly common (Ott and Schneider, 2022).

Having a diagnosis of hypertension is said to affect people in a psychosocial manner. Labeling people to be diagnosed with mild hypertension can cause psychosocial consequences such as guilt, shame, anxiety about work and leisure, stress regarding feelings of aging, of having an “illness”, or fear of death. Being diagnosed with hypertension may be called a significant event that affects a life once present (Gyuricza, et al, 2022).

The role of educational videos in modifying one’s lifestyle such as a change in dietary habits was emphasized by Ab Hamid, et al (2022). It was found that the educational materials can be a useful tool for physicians to successfully provide patient care to respondents. The study reveals that the implementation of a program has the potential to enhance several dimensions of patient lifestyle.

A pre-experimental study utilizing a “One group Pretest-Posttest design without control” was conducted promoting health education using flipchart media, the results show that the participants can make positive progress in their quality of life and dietary adherence after they have been instructed about well-

being utilizing flipchart media (Yobel & Kristiani, 2023).

With the lack of understanding and established literature regarding hypertensive education intervention to respondents, it is crucial to assess the effectiveness of hypertensive education intervention to develop better educational methodologies, address the dilemma of malpractices, and improve adherence to treatment and medication.

It is crucial to assess the effectiveness of hypertensive education intervention to develop better educational methodologies tailored to help improve patients’ knowledge about hypertension, address the dilemma of malpractices of hypertensive Filipino patients in the management of hypertension, and improve adherence to treatment and medication.

Thus, this study assessed the effectiveness of implementing the education intervention to the residents of Sitio Magnolia, Quezon City. Specifically, this research described the sociodemographics of the respondents of Sitio Magnolia; the duration of having hypertension of the respondents, risk factors (such as smoking, drinking alcohol, family history, diet, exercise and others) and other comorbidities that respondents have (such as diabetes mellitus and dyslipidemia). In addition, the researchers measured the following: perceived knowledge of respondents after the discussion using the educational flipchart; medication adherence score of respondents through the Medication Adherence Rating Scale (MARS), and determination of patient satisfaction regarding the communication efforts of the research and the implementation of the educational intervention flipchart regarding hypertension. Moreover, the data acquired from this study may help in contributing to the development of better educational flipcharts for educating the lay people regarding hypertension, making an impact on how they take care of their health in the presence of it.

MATERIALS AND METHODS

Study Design and Locale

This research adopted the Descriptive Research Design to assess the usefulness of the hypertension flipchart as an interventional tool in enhancing the perceived knowledge of respondents in Sitio Magnolia and is used to describe the respondents’ perceived knowledge after the implementation of the educational material, and enhances the reliability

and validity of the research through the provision of the statistical significance of the data collected. This research study was conducted in a multipurpose center in Sitio Magnolia, West Fairview, Quezon City. Sitio Magnolia is one of the many sitios or communities under Barangay Greater Fairview that is densely populated with respondents and in varying ages which was the focus of this study.

Population and Sampling Technique

The study population was composed of residents of Sitio Magnolia, West Fairview, Quezon City and who have consented to participate. All sexes (male, female) aged 20 - 59 years old with or without comorbidities; and who have the ability to read and write, were permitted to join the study. Contrariwise, those residents who did not consent to participate and have impaired cognitive ability (e.g. Alzheimers and Dementia) were excluded from the study.

Purposive Sampling was implemented in gathering the participants necessary for the study who possess the characteristics of interest based on the set inclusion and exclusion criteria. Based from the demographic profile of the selected sitios of Barangay West Fairview, Sitio Magnolia is divided into 3: Sitio Magnolia 1, Sitio Magnolia 2, and Sitio Magnolia 3, which are composed of 50, 83 and 42 households respectively. Due to time constraints, data about the community's whole population was not gathered. From the 60 families that were surveyed, it has been counted that 243 individuals comprised the surveyed families. The sample size was calculated using the software CDC Epi Info. The 243 individuals from surveyed families served as the sample population, with 95% confidence level, 5% margin of error, and 90% expected frequency. Hence, the final sample size needed was 88.

Research Instrumentation and Validation

This study has adapted a flipchart educational material and questionnaire to assess the potentiality of the devised educational tool as an intervention by measuring the perceived knowledge and satisfaction. The research instrumentation utilized both the English and Filipino languages

The educational material (Flipchart) contains the following topics: (i) What does blood pressure mean? (Ano ibig sabihin ng blood pressure?); (ii) What

does hypertension mean? (Ano ang ibig sabihin ng altapresyon?); (iii) What are the stages of hypertension? (ano-ano ang mga stages ng hypertension?); (v) What are the causes of hypertension (Mga sanhi ng pagkakaroon ng hypertension); (vi) What are the symptoms of hypertension? (ano ang mga sintomas ng hypertension?); (vii) Ways to prevent hypertension (Mga paraan para maiwasan ang altapresyon); (viii) How to control hypertension (pagkontrol ng altapresyon); (ix) what should be monitored when you have hypertension? (Ano ang mga dapat i-monitor ng mga taong may altapresyon); and (x) How to monitor your blood pressure at home. (Pag monitor sa blood pressure kapag nasa bahay)

The researchers adopted the following materials from journal articles: 1) Education Materials entitled "Altapresyon 101"; 2) Questionnaires; 3) Respondents' Satisfaction Questionnaire from University of Wollongong's Short Assessment of Patient Satisfaction and Patient Satisfaction with Services Questionnaire (PSPSQ 2.0) of M Fahad, et al (2021). Following the adaptation of the materials from their respective resources, modifications were made based on the latest information available published by health organizations and journal articles, and were translated into Filipino. The English versions served as the basis for the checking of the content of the materials, while the Filipino versions are the ones utilized in the actual implementation of the study.

As preparatory to the actual collection of data, the questionnaire underwent re-validation by consulting licensed health professionals, particularly three (3) medical doctors, two (2) nurses, and three (3) pharmacists. Specifically, the Flipchart educational material has already been validated previously by two (2) medical doctors and two (2) registered pharmacists. After the validation of research tools, modifications were made based on the comments and suggestions that were made by the healthcare professionals and Filipino teachers. The final validation of the research tools was made by consulting a statistician. The materials were checked by the Data Privacy Officer to protect the confidentiality of the participants.

Table 1 displays the results of a Flipchart's Content Validity Test, assessing its content's validity using ratings from 10 raters across 8 criteria. Ratings ranging from 3 to 4 indicate a favorable range supporting the expected validity of the test questions. The Item-Content Validity Index (I-CVI) for each item question was calculated, and all items achieved the acceptable threshold of 0.75, demonstrating consistent

agreement among raters. The Scale-Content Validity Index/Average (S-CVI/Ave) yielded a value of 0.75, indicating satisfactory content validity. While the total agreement was 8, the Scale-Content Validity Index/Universal Agreement (S-CVI/UA) was 0.73, reaffirming the overall validity of the Flipchart for its intended purpose. These results suggest that the Flipchart effectively covers the specified criteria and can be considered a valid tool for the intended educational or informational context.

Table 1. Content validity test under flipchart.

Item Questions	Number of Agreement	I-CVI	Interpretation
#1	3	0.75	Accepted as VALID
#2	3	0.75	Accepted as VALID
#3	3	0.75	Accepted as VALID
#4	3	0.75	Accepted as VALID
#5	3	0.75	Accepted as VALID
#6	3	0.75	Accepted as VALID
#7	3	0.75	Accepted as VALID
#8	3	0.75	Accepted as VALID
S-CVI/Ave		0.75	
Total Agreement		8	VALID
S-CVI/UA		0.73	

Data Collection

Data collection was conducted last March 2024. The process was divided into three major parts: 1) Pre-Implementation; 2) Actual-Implementation and 3) Post-Implementation.

Before the implementation, the researchers adapted educational materials, questionnaires, and patient satisfaction tools from journal articles and translated them into Filipino. The tools were validated by different healthcare professionals such as doctors, pharmacists, and nurses. A letter was sent to the community engagement coordinator for stakeholder assistance as well as a meeting request for local officials for potential participants based on our inclusion and exclusion criteria. This phase of the implementation took nine (9) weeks to complete.

The actual implementation of the research was done in the Multipurpose Center of Sitio Magnolia, Quezon City, for one (1) day. The participants will go through two stations respectively: 1) Registration and 2) Researcher's Table. The participants were first guided to the Registration area, wherein they were checked for their blood pressure before proceeding to Station 2. Once the participants are done with their registration, they are sent to the available researcher

to receive educational intervention. The intervention used a uniform script during the small group discussion, and consent forms were distributed to the participants. After consenting to be part of the study, the gathering of demographic profiles was carried out. The researchers then presented the educational intervention for about thirty (30) to forty-five (45) minutes depending on the participant and researcher's interaction. Lastly, the researchers provided a post-questionnaire survey.

After the implementation, the participants answered a satisfaction survey and provided each participant with a token to appreciate their time and involvement in the study. This was completed the same day as the actual implementation. The tallying & analysis of data as well as the completion of the paper took place in a span of two (2) months.

Data Processing and Analysis

Post-implementation, the questionnaires were checked for completeness and if there were questions that were not answered; the data was manually encoded and tabulated from the answered questionnaires onto Google Sheets, and was imported to Microsoft Excel, which was used in the data analysis process of the study. The percentage was utilized to display the proportion of participants who provided a particular response in assessing their demographics prior the implementation of an educational intervention. The frequency was employed to show the occurrences of the responses of the participants. The mean was used to understand the data in assessing the patients' satisfaction regarding the researchers throughout the conduct of education intervention and data collection.

Ethical Considerations

The study received approval and clearance from the Data Privacy Office (DPO) of Far Eastern University - Dr. Nicanor Reyes Medical Foundation, and by the university's own Institutional Ethics Review Committee (FEU-NRMF IERC) on the 19th day of February 2024 before its commencement. The participants were given informed consent forms reiterating that their participation is voluntary; are informed regarding the disclosure of their personal information which would be kept confidential for study purposes, and are educated of their right to withdraw if they no longer want to participate in the study.

Results

The main objective of this study was to assess the perceived knowledge and medication adherence of the respondents in Sitio Magnolia. This was done by conducting a post-test, with a small group discussion to determine the potential functionality of the hypertension flipchart as an educational intervention. The research had a target population of 88, of which only 50 were eligible. The analysis consisted of a total of 50 respondents, and the desired sample size was not attained. This was due to lack of available participants in the area, and the estimate for the basis of the sample size computation had a discrepancy, since the researchers failed to acquire a report containing the exact number of respondents who were residing in Sitio Magnolia, Quezon City from the Community Engagement Office. The basis for the sample size computation was derived from the existing data from the demographics report, particularly the number of residents residing in Sitio Magnolia.

RESULTS

Description of Respondents

Table 2 shows that the majority of the respondents fall within the age of 41 to 50 years old (42%) and 51 to 59 years old (30%). This indicates that hypertension is more common among individuals aged 40 years and above compared to other age groups. The age group 31 to 40 years old have quite a frequency with 22%. This may suggest that individuals in this age group are likely to be affected by hypertension. The age group 20 to 30 years old has the smaller proportion of 6%.

Table presents that there is a huge proportion of female respondents (82%) compared to males with only 18%. This implies that hypertension is more common in females than in males.

The data shows that a majority of respondents have finished Junior High School with 32%. This implies that respondents in Sitio Magnolia have completed their High School Degree (old curriculum).

With the majority of the respondents able to finish their junior high school degree (old curriculum), there is still a significant representation (18%) of individuals who had achieved a college degree. This is closely followed by Senior High School and Elementary Level with 16%. There is also a relatively higher proportion of respondents that have Vocational degree with 14%. This may imply that individuals

that finished a low level of education may affect their perceived knowledge with regards to hypertension. On the other hand, a small percentage of respondents (4%) have finished pre-school.

The data shows that half of the respondents were married with 50%. This may suggest that hypertension may be common to married people. There is a relatively higher frequency of with spouses but not married and those that chose to not disclose their civil status, with 20% and 18% respectively. There is a small percentage of widowed respondents with 6%. And, among the individuals the lowest frequency of respondents were single (4%) and separated (2%).

The table shows that the majority of respondents are unemployed (46%). This may imply that unemployed individuals may be common to not follow their medication regimen. These results relate to a study by Malih Radhi, et al (2023), which concluded that the patients who have higher income have the higher treatment adherence. Patients who are employed adhere to their treatment differently than those who are unemployed.

The findings of this study show a diverse range of employment by the respondents. There is a relatively high frequency of other occupations (20%) which includes a couple government officers, a housemaid, an office worker, streetsweeper, and freelancer. Followed by drivers (tricycle or jeepney) with 12%. This is closely followed by individuals that chose not to disclose their occupation (10%). The lowest frequency were reported to be factory worker, cook, and labor worker with 2% each.

The table shows the monthly income of the respondents of Sitio Magnolia. Majority of the patients opted to not disclose their income (48%). This is closely followed by individuals who earn less than 9,000 pesos per month, with 32%. This may imply that respondents' adherence and hypertension management may be hindered with only just enough income to feed their families in a month. There is also a notable representation of individuals who earn 10,000 to 14,999 pesos per month with 16%. This is followed by 15,000 to 19,999 pesos and 20,000 to 24,999 pesos (2%), respectively.

Table 3 shows how long the respondents were diagnosed. There is a significant number of respondents that was marked as "N/A" with 48%. This may suggest that patients were not diagnosed yet. This is followed by patients that have been diagnosed for 1 to 5 years with 34%. This may imply that this proportion was assessed during the height of the pandemic.

Table 2. Sociodemographic profile of the respondents.

Characteristics	f (n = 50)	Responses (%)
<i>Age (years)</i>		
20-30	3	6.00
31-40	11	22.00
41-50	21	42.00
51-59	15	30.00
<i>Sex</i>		
Male	9	18.00
Female	41	82.00
<i>Educational Attainment</i>		
College	9	18.00
Elementary	8	16.00
Junior High School (old curriculum)	16	32.00
Pre School	2	4.00
Senior High	8	16.00
Vocational	7	14.00
<i>Civil Status</i>		
Married	25	50.00
Separated	1	2.00
Single	2	4.00
With spouse but not married	10	20.00
Widow	3	6.00
N/A	9	18.00
<i>Occupation</i>		
Driver	6	12.00
Factory Worker	1	2.00
Cook	1	2.00
Labor	1	2.00
Vendor	3	6.00
Others	10	20.00
Unemployed	23	46.00
N/A	5	10.00
<i>Monthly Income</i>		
10,000 - 14,999	8	16.00
15,000 - 19,999	1	2.00
20,000 - 24,999	1	2.00
Less than 9k	16	32.00

There is also a fairly high frequency of patients diagnosed for less than a year with 12%. On the other hand, there's a notable representation of patients diagnosed for more than 5 years (6%) of which two out of three were diagnosed for 23 years.

Table 3. Duration of hypertension of respondents.

Duration of Hypertension (years)	f (n = 50)	Percentage (%)
Less than 1 year	6	12.00
1-5 years	17	34.00
More than 5 years	3	6.00
N/A	24	48.00

Table 4 found that more than half of the respondents' risk factors fall on unhealthy diet; eating fatty and salty food (kumakain ng mataba at maaalat) with 58%. This may suggest that one of the main risk factors for hypertension is having an unhealthy diet. There is also a great proportion of patients that reports that other family members have hypertension (may kapamilya na may altapresyon) with 40%. This may also indicate that hypertension is hereditary.

While a huge proportion of the patients reported unhealthy diet and hereditary risk factors, there is a notable representation of smoking (naninigarilyo) and drinks alcohol (umiinom ng alak) with both of these reporting to have 26% each. This implies that smoking and drinking alcohol is also a common risk factor for respondents. There are also patients that marked the risk factors as N/A (26%) which may suggest that they may not be aware of these risk factors or are unwilling to share the information.

Table 4. Sitio Magnolia respondents' risk factors.

Risk Factors	f (n = 50)	Percentage (%)
Unhealthy diet; eating fatty & salty food (Kumakain ng mataba at maaalat)	29	58.00
Other family members have hypertension (May kapamilya na may altapresyon)	20	40.00
Smoking (Naninigarilyo)	13	26.00
Drinks alcohol (Umiinom ng alak)	13	26.00
N/A	13	26.00

The data found that the current medication regimen of the respondents of Sitio Magnolia where half of the individuals chose to not disclose their medication regimen with 50% (Table 5). This may imply that these patients were not able to remember their prescribed regimen as they do not adhere to it or they are just unwilling to share such information. Majority of the patients that disclosed their medicine were found to have one medicine (24%), this may suggest that these patients are on their Stage 1 of Hypertension. This is closely followed by patients taking at least two medicines (16%) and a notable representation of patients who were taking 3 or more medicines (10%).

This data also shows that the common medicines in the medication regimen of the respondents are Losartan (44%) and Amlodipine (26%) [see Table 6]. A notable representation of Metformin (4%) were

reported as part of their medication regimen. Patients have also listed other medicines (e.g. omeprazole, calcium carbonate) with 4%. There is also a low frequency of Aspirin, TMZ, Statins (Simvastatin and Rosuvastatin) with 2% each. These results may indicate that these patients have other comorbidities. Majority of the patients that are on monotherapy take Losartan.

Table 7 data presents the comorbidities of the respondents where the majority marked N/A (52%), which may imply that patients do not have other comorbidities. By half, dyslipidemia is the major comorbidity that is found within the selected population with 26%. Which is consistent with the results in the medication regimen (Table 6) where statins are present. This is followed by Diabetes with 12%, which may prove that this is a common comorbidity of respondents and is consistent with the results above (Table 6) as few of the medicines were Metformin. Other comorbidities (12%) listed by the individuals are Cardiomegaly and GERD.

Table 5. Number of medicines of respondents.

Number of Medicine	f (n = 50)	Percentage (%)
0	25	50.0
1	12	24.0
2	8	16.0
3 or more	5	10.0

Table 6. Respondents' current medication regimen.

Medicines	f (n = 50)	Percentage (%)
Amlodipine	13	26.00
Aspirin	1	2.00
Losartan	22	44.00
Metformin	2	4.00
TMZ	1	2.00
Rosuvastatin	1	2.00
Simvastatin	1	2.00
Others	2	4.00

Table 7. Comorbidities of respondents

Comorbidities	f (n=50)	Percentage (%)
Diabetes	6	12.00
Dyslipidemia	13	26.00
Others	6	12.00
N/A	26	52.00

II. Difference on the Mean Score of Perceived Knowledge of Respondents Post Implementation of Education Material Among the Age Groups

The table presents the mean scores per age group on the post-test questionnaire subsequent to the educational intervention. Notably, the age cohorts of 20-30 and 31-40 yielded the highest scores (10). Following the age group of 51-59 (9.93). Lastly, individuals within the 41-50 age group (9.67).

The table presents the mean scores per age group on the post-test questionnaire subsequent to the educational intervention. Notably, the age cohorts of 20-30 and 31-40 yielded the highest scores (10). Following the age group of 51-59 (9.93). Lastly, individuals within the 41-50 age group (9.67).

Table 7. Score of perceived knowledge of respondents' post implementation of education intervention by age-group.

Age Group	Mean Score
20-30	10.00
31-40	10.00
41-50	9.67
51-59	9.93

III. Difference Between the Respondents' Adherence Score Through Medication Adherence Rating Scale (MARS)

Table 8. Mean adherence score of Medication Adherence Rating Scale (MARS) of respondents by age-group.

Age Group	Mean Score	Mean Adherence Score
20-30	2	4.00
31-40	4	8.00
41-50	10	5.50
51-59	9	6.00

In terms of Medication Adherence Rating Scale (MARS), the table shows the mean adherence score and the number of respondents with medications per age group. The highest score belongs to the 31-40 age group with a (8.00). This is followed by the oldest age group, age 51-59 (6.00). Third among the four groups is the 41-50 age group (5.50). Lastly, the lowest score came from the age group 20-30 with a mean (4.0).

Table 8. Level of satisfaction among respondents regarding the communication efforts of the researchers throughout the implementation.

Satisfaction with the educational material and communication efforts						Results
	1 - Very Dissatisfied	2 - Dissatisfied	3 - Neutral	4 - Satisfied	5 - Very Satisfied	Mean
Q1: How satisfied are you with the explanations the researcher has given you about hypertension?	0 (0%)	1 (2%)	0 (0%)	3 (6%)	46 (92%)	4.88
Q2: Did the researchers spend as much time necessary to deliver the education intervention?	0 (0%)	0 (0%)	1 (2%)	4 (8%)	40 (90%)	4.88
Q3: Are you satisfied with the care you received in the assessment/interview?	0 (0%)	0 (0%)	0 (0%)	2 (4%)	48 (96%)	4.96
Q4: Were the researchers professional in all of your interactions?	0 (0%)	1 (2%)	1 (2%)	2 (4%)	46 (92%)	4.86
Q5: Did the researchers explain information to me in a manner that I could understand?	0 (0%)	1 (2%)	2 (4%)	1 (2%)	46 (92%)	4.84
Q6: Did the researchers check if I understood all the information?	0 (0%)	1 (2%)	0 (0%)	2 (4%)	47 (94%)	4.90
Q7: Did the researchers make sure I understood how important it is to follow the drug regimen (QOC 6)?	1 (2%)	0 (0%)	0 (0%)	3 (6%)	46 (92%)	4.86
Q8: Did the researchers encourage me to achieve my treatment goals?	2 (4%)	0 (0%)	3 (6%)	4 (8%)	41 (82%)	4.64
Q9: Did I feel comfortable in my interactions with the researchers?	1 (2%)	0 (0%)	1 (2%)	0 (0%)	48 (96%)	4.88
Q10: Were the researchers respectful towards me during our interactions?	0 (0%)	0 (0%)	0 (0%)	3 (6%)	47 (94%)	4.94

Table 7 presents the respondent's satisfaction with educational material and the communication efforts of the researchers. For Q1, most of the respondents answered Very Satisfied (92%) with a mean score of 4.88. For Q2, most respondents answered Very Satisfied (90%) with a mean score of 4.88. For Q3, most respondents answered Very Satisfied (96%) with a mean score of 4.96. For Q4, most respondents answered Very Satisfied (92%) with a mean score of 4.86. For Q5, most respondents answered Very Satisfied (92%) with a mean score of 4.86. For Q6, most respondents answered Very Satisfied (94%) with a mean score of 4.90. For Q7, most respondents answered Very Satisfied (92%) with a mean score of 4.86. For Q8, most respondents answered Very Satisfied (82%) with a mean score of 4.64. For Q9 most respondents answered Very Satisfied (96%) with a mean score of 4.88. For Q10, most respondents answered Very Satisfied (94%) with a mean score of 4.94. Overall, the respondents were highly satisfied

with the educational intervention prepared by the researchers with an overall mean score of 4.86.

DISCUSSION

The findings suggest that the prevalence of hypertension among four groups were 6%, 22%, 42% and 30%, respectively. The prevalence is especially high among the middle-aged brackets. This is consistent with existing literature that suggests middle ages are at an increased risk for hypertension. (Zhang, et al, 2021). The data presents that the majority of the respondents were females with 82% taking up the whole population, while male completes the population with 18%. This may indicate that females are more likely to be affected by hypertension. This is consistent with the study conducted by Bager, et al (2023) wherein females that belong to the older age brackets have been shown to have worse blood pressure control than their male counterparts. The data shows that 32% of the respondents had achieved Junior High School (old curriculum). This suggests that educational attainment may affect the perceived knowledge of individuals with regards to hypertension and its management. This is consistent with a study on uneducated brazilian adults who were found to have had higher levels of hypertension and other diseases than those that achieved higher education. (X. Zhang, et al, 2024). The data presents that 50% of the hypertensive population is married. This may indicate that marital status and hypertension may be associated, and the prevalence of hypertension in married individuals are high in comparison to those that are single/widowed/separated. This result mirrors the findings of a study in Korea where unmarried male were most associated with hypertension, while prevalence of hypertension is high among married females. (Son, et al, 2022). The data revealed that 46% of the targeted population are unemployed. This may indicate that employment may affect the odds of acquiring hypertension, with the data it may suggest that individuals who are unemployed may contract hypertension more than those people that have jobs. This findings is consistent with a study that shows that employment status and occupation type affects the risk of hypertension. It reveals that employment has reduced odds of contracting hypertension than those of unemployed, hence unemployed individuals are more likely to have hypertension or any related cardiovascular diseases. (Aijaz, et al, 2022). The data shows that 32% of

respondents are earning less than 9,000 pesos per month. This may imply that income may hinder the adherence and hypertension management of the patients. Additionally, multiple pieces of evidence have suggested that low socioeconomic status is associated with higher prevalence of hypertension due to poor lifestyle and other habits (e.g. drinking, smoking). Hence, individuals that are part of a near poor population may be likely to be most at risk of hypertension. (Qin, et al, 2022). About 34% of the population have been reported to be hypertensive from 1 to 5 years. This suggests that the majority of the respondents were diagnosed during the pandemic, even with little to no access to healthcare during pandemic. The association of hypertension to COVID-19 prompted the healthcare authorities to check for the risk of hypertension of the population. (Trimarco, et al, 2024). The findings show that more than half of the respondents identified unhealthy diet (58%) as the major risk factor for their hypertension. This may imply that poor development of lifestyle habits is a big and major factor in the prevalence of hypertension among the individuals included in this study. It is also worthy to note that individuals that have a family member with hypertension (40%) is one of the major risk factors identified in this study. There is also a high frequency of bad habits (i.e. smoking, alcohol intake). These results are proven to be consistent with multiple studies where poor lifestyle is greatly associated with the higher odds of hypertension, especially to middle and older age brackets. (Zhu, et al, 2023). The findings show that 26% of respondents are experiencing dyslipidemia as their major comorbidity is often linked to hypertension due to shared risk factors such as obesity, unhealthy diet, and sedentary lifestyle. Additionally, the presence of “statins” medication supports the management of dyslipidemia in these patients (Ayoade, et al, 2020). The data shows that 12% of respondents are experiencing diabetes as their comorbidities show that hypertension and diabetes share the same common risk factor like obesity. The use of Metformin in the medication regimen further supports that patients use this medication as a management for their diabetes (Asiimwe, et al, 2020). Based among the four (4) age groups, the data indicates that the highest score came from the age groups of 20-30 and 31-40 with both having the same mean score of 10. Following the lowest mean score of those in the group 41-50. This implies that both the age groups of 20-30 and 31-40 got the highest mean score. Indicating that post-test

scores can increase hypertension knowledge stated by Goodfriend (2020). Suggesting that interactive education intervention is one of the most effective strategies in community-based health promotion education programs for respondents. The respondents' satisfaction survey measured how the education intervention is implemented, covering communication manners, professionalism of the researchers, ease and efficacy of communication, and feedback assessment. In all four (4) age groups, the respondents' satisfaction scores show a frequency of 5, expressing highest satisfaction on the communication efforts and etiquette shown by the researchers during the conduct of the education intervention, which made a positive impact in aiding the delivery of important ideas regarding hypertension. This supports evidence that pharmacist-led education interventions are significantly effective in improving disease knowledge about hypertension and blood pressure control among respondents, therefore leading to utmost respondents' satisfaction (Okoro, et al, 2022; Waszyk-Nowaczyk, et al, 2019).

The strength of the study provides a comprehensive analysis of factors associated with hypertension, including demographic characteristics, medication adherence, perceived knowledge, and participant satisfaction following an educational intervention. Overall, the study highlights the importance of addressing both medical and social factors in managing hypertension and suggests that educational and counseling interventions can play a key role in improving health outcomes.

This study may provide baseline findings on the perceived knowledge of the respondents in Sitio Magnolia, but it has its own limitations: 1) Sample size was not achieved, thus the ability to generalize the findings of the study is reduced. The researchers suggest to expand the groups including the geriatric population contribute to stronger data and more comprehensive results; 2) The distribution of the number of participants between age groups turned out to be unequal To rectify this discrepancy, future researchers should set a fixed quantity of participants per age group during the screening process; 3) The collection of blood pressure is not within the scope of the study. Which may be substantial in presenting which stage of hypertension were the respondents. Collaborating with other health care professionals that will diagnose and perform laboratory tests, future researchers may enhance the program; 4) The research tools (Post-test Questionnaire, MARS Questionnaire, and Respondents' Satisfaction Questionnaire) were

not meticulously explained per item leading to some participants not being able to answer some of the questions which affected the results of the data. In addition, it may cause different interpretations of questions from what is intended. Researchers suggest the extension of the implementation duration of the education intervention.

CONCLUSION

The study has meticulously examined several factors of hypertension, particularly the demographic profile, medication adherence, perceived knowledge after the implementation of education intervention, and respondents' satisfaction to the researchers. In terms of demographics, the prevalence of hypertension demonstrates notable variations across age groups, with 31-50 age groups exhibiting elevated rates. Gender disparities are evident, with differing rates between men and women. Women are likely to have hypertension. Moreover, there is a potential link between education levels and health outcomes. Marital status, employment status, and socioeconomic factors also influence hypertension prevalence, emphasizing the impact of social and economic determinants on health. Factors such as the duration of hypertension, lifestyle-related risks, and medication regimens contribute to the difficulty in managing hypertension effectively. Common medications like HMG-CoA reductase inhibitors, Angiotensin II receptor blockers (ARBs), and Biguanides are pivotal in treating hypertension, and other comorbidities such as dyslipidemia and diabetes.

The post-test findings show a difference of perceived knowledge upon the implementation of education intervention. Indicating the 20-30 and 31-40 age groups having the highest understanding of the contents of education intervention while 41-50 age group has the least understanding. Thus, the older population was able to comprehend the information that was presented and discussed regarding hypertension. Furthermore, respondents' satisfaction surveys across all age groups consistently showed high satisfaction scores regarding the communication, professionalism and ease of the education intervention.

In summary, the study fully examines the factors influencing hypertension among respondents, including the demographics, perceived knowledge, and respondents' satisfaction. It also emphasizes the impact of social and economic factors on hypertension

prevalence. Post-intervention assessments showed progressed knowledge, especially among older age groups. While medication adherence appears consistent across the different age groups, counseling sessions are considered essential. In general, respondents' satisfaction with the intervention is high, highlighting effective communication and professionalism of researchers towards the participants.

Recommendations are given by the researchers to improve interventions could further enhance hypertension management outcomes and extent of disease knowledge. The following recommendations to improve the education intervention among respondents are hereby made: 1) Extend the duration of educational intervention; 2) Continued development of education materials; 3) Expansion of the sample size; 4) Equal distribution of the sample size among age & gender groups; 5) Collaboration with other health care professionals

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