Effectiveness of Home Care Pharmacy Services for Elderly Hypertensive Patients in Rural Health Unit of Tantangan, South Cotabato

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KeyWords

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ABSTRACT

Introduction: The study underscores the crucial role of home care pharmacy services in improving patient awareness, behaviour, and drug adherence. The intervention successfully enhanced health management and adherence, while also investigating its impact on blood pressure, appointment attendance, sodium intake, and self-reported pill count. Researchers designed this study to learn how senior hypertension individuals manage their illness and how responsible they are in taking their medications. **Methods:** A quasi-experimental approach was employed, involving 40 respondents of elderly individuals with hypertension who received home care pharmacy services out of 1,865 total population sizes. A Hill-Bone Compliance to High Blood Pressure Therapy Scale was developed to assess patients' compliance with three essential behavioral areas of high blood pressure treatment: reduced sodium consumption, appointment attendance, and medication adherence. **Results:**

The findings and results revealed that there was an existing significant difference (p<0.05) on the level ofindicators based on sodium consumption, medication taking, and self-reporting pill counts on treatment groups (with intervention) compared to the control groups (without intervention). Sodium consumption mean response was 1.77; appointment keeping - the mean response was 2.97; self-reported pill counts was 1.33; and adherence was 2.30; showing that care pharmacy services are generally effective. **Discussion:** The study's findings demonstrated that sodium consumption mean response was 1.77. The studies have shown it has low level of sodium intake, because during study most of the elderly already doesn't eat salty foods, a reduction in dietary sodium not only decreases the blood pressure and the incidence of hypertension but is also associated with a reduction in morbidity and mortality from cardiovascular diseases. Appointment keeping - the mean response was 2.97, it shows that it has a high result which means that elderly patients are always go to their appointment for check up in the said schedule by their physicians. Self-reported pill counts were 1.33; and adherence was 2.30; showing that care pharmacy services are generally effective.

INTRODUCTION

One third of the world's population is predicted to be affected by hypertension by 2025 as a result of an aging population and rising obesity rates (Williams, 2019).According to the World Health Organization, an estimated 46% of adults with hypertension were unaware that they have the ailment, with 1.28 billion people globally aged 30-79 years believed to have it. The majority of these adults (two-thirds) reside in low- and middle-income countries. Hypertension is a key factor in premature death. In the elderly, hypertension is a prevalent problem. Its prevalence now ranges from 60% to 80%, but with the expected increase in the number of people over 65, it is anticipated to increase. Hypertension is a significant cardiovascular risk factor because of the well-established enduring link between high blood pressure, stroke, and cardiovascular (CV) death across all age groups. (Antonio Del Giudice et al. J Nephrol. 2010).

Pharmacist home visits provided under the Ontario MedsCheck at Home (medication review) program have been published; however, they involved a single pharmacist and/or a single community pharmacy and were largely descriptive in nature. This ensure the growth and sustainability of pharmacist home visits, interested pharmacies are encouraged to perform case-finding to identify those patients who are at risk of adverse medication-related outcomes, to charge for this service, and to collect and report clinical, economic, and/or humanistic outcomes (Can J Hosp Pharm 2017).

Given the emphasis on home care as a means of renewing the health-care system, it is critical to assess the provision of home care services to ensure that care is optimized and meets patient needs (Walus, 2017). The impact of a pharmacist working out of a community home care office, providing pharmacy services such as home visits, group education, and phone consultations. In the absence of validated ambulatory care, assess the utility of acute care Clinical Pharmacy Key Performance Indicators in guiding home care pharmacy services (Woloschuk, 2017).

Homecare services were an important component of comprehensive programs to promote health and prevent and/or control disease and risk factors (Hill et al., 2000). Active community participation and collaboration, program planning, implementation, and evaluation Persuasive communications, interpersonal relationships, skill training, and community organizing are all components of effective interventions (Supian, 2010).It has demonstrated hypertension control by connecting health professionals and healthcare organizations, as well as current or potential patients, with resources in their communities (Supian, 2010).

METHODS

Study Design

Researchers employed a quasi-experimental research design. This method facilitated researchers in gaining valuable insights, resulting in objective data identified through the use of statistical analysis. The statistical treatment involved examining the gathered information from the responses, tallying and processing it for further interpretation. The effectiveness of home care pharmacy services for elderly hypertension patients is the main topic.

Population and Sampling Technique

The researchers determined the sample size with a total of 1,865 considering the elderly hypertension patient population in selected barangays of Tantangan, South Cotabato. Employing purposive sampling aligned with their preferences, they chose 40 respondents as a practical minimum due to constraints in time and budget. This decision was driven by the need for a rough estimate of results based on inclusion and exclusion criteria in the study.

The following inclusion and exclusion criteria. For inclusion criteria: a) Elderly hypertensive patients and b.) Must be resident in the Tantangan, South Cotabato, c.) age must be 60-80 years old and who are willing to participate d) Respondents must maintain an anti-hypertensive medicine. For the exclusion criteria: a) The participants are not listed in the barangay and b) the participant is not a resident of Tantangan, South Cotabato, and who are unwilling to participate. c.) Ages below 60 years old d.) Does not maintain an antihypertensive medicine.

Research Instruments

The research instrument used in this study was Hill-Bone Compliance to High Blood Pressure Therapy Scale, one of two Hill-Bone Scales, originally consisted of 14 items. It was designed to assess patient behaviors in three crucial domains of high blood pressure treatment: Appointment Keeping (3 items), Diet (2 items), and Medication Adherence (9 items). Often known as the Hypertension Adherence Scale, this scale has been translated into over nine languages by various users since its development in English. (Johns Hopskins, 2024) The researchers used a self-made questionnaire which was validated by an expert.

This tool allows quick assessment of patients' adherence for clinicians, offering a comprehensive view of high blood pressure behaviors. Validated for reliability, it efficiently measures treatment aspects in less than 5 minutes. Useful for diagnosing compliance issues, clinicians can opt for shorter subscales, like the 8-item medication-taking behavior subscale. (Johns Hopkins, 2024).

Data Collection

The study was conducted at Tantangan, South Cotabato with the supervision of the Public Health Pharmacist. Researchers obtained informed consent from participants before distributing questionnaires to those meeting the research criteria. A pre-test was conducted before a 2-month intervention period, during which data was collected through regular monitoring of participants' blood pressure. Post-survey questionnaires were administered, and collected data, including both groups with and without home care pharmacy services, were sent to a statistician for analysis.

Data Analysis

To address the study's specific questions, descriptive and inferential statistics were used. Descriptive statistics were used to analyze frequency, percentage distribution, and other relevant measures. Mean and standard deviation were used in inferential statistics, specifically in regression analysis, to determine if there was a significant relationship among the geriatric patients before and after the home care pharmacy services regarding the following factors: 1.1 blood pressure, 1.2 sodium consumption, 1.3 appointment keeping, 1.4 medication taking, 1.5 self-reporting pill counts, and 1.6 medication adherence .Additionally, the Hill-Bone Compliance for High Blood Pressure Therapy Scale and independent sample t-test were employed as statistical approaches.

Meanwhile, the data from the questionnaire was adapted from the Chinese version of the Hill-Bone Compliance to High Blood Pressure Therapy Scale. The researchers used this scale as a standardized tool to measure the effectiveness of the home care pharmacy services in terms of blood pressures, sodium consumption, appointment keeping, medication taking, self-reporting pill counts, and medication adherence. The Chinese Hill-Bone scale (HBTS-C) has been validated and proven reliable in assessing adherence in Chinese hypertensive patients and is commonly used as a screening tool to assess adherence to hypertension medication (Pan et al., 2020).

Question	M±SD	All the Time, n (%)	Mostly, n (%)	Sometimes, n (%)	Never, n (%)
How often do you … …					
1. Forget to take your HBP medicine?	2.94±1.05	32 (13.68)	40 (17.10)	73 (31.20)	89 (38.03)
2. Decide NOT to take your HBP medicine?	3.00±1.15	36 (15.38)	46 (19.66)	34 (14.53)	118 (50.43)
3. Eat salty food?	2.90±1.07	36 (15.38)	40 (17.09)	70 (29.91)	88 (37.61)
4. Shake salt on your food before you eat it?	2.92±1.09	37 (15.81)	38 (16.24)	66 (28.21)	93 (39.74)
5. Eat fast food?	3.00±0.90	24 (10.26)	24 (10.26)	115 (49.15)	71 (30.34)
6. Make the next appointment before you leave the doctor's office?	2.69±1.17	83 (35.47)	47 (20.09)	52 (22.22)	52 (22.22)
7. Miss scheduled appointments?	2.70±1.23	59 (25.21)	46 (19.66)	35 (14.96)	94 (40.17)
8. Forget to get prescriptions filled?	3.07±1.22	48 (20.51)	23 (9.83)	27 (11.54)	136 (58.12)
9. Run out of HBP pills?	3.29±1.23	37 (15.81)	14 (5.99)	27 (11.54)	156 (66.67)
10. Skip your HBP medicine before you go to the doctor?	3.23±1.15	38 (16.24)	21 (8.97)	24 (10.26)	151 (64.53)
11. Miss taking your HBP pills when you feel better?	2.65±1.32	81 (34.62)	18 (7.69)	38 (16.24)	97 (41.45)
12. Miss taking your HBP pills when you feel sick?	3.39±0.92	19 (8.12)	15 (6.41)	55 (23.50)	145 (61.97)
13. Take someone else's HBP pills?	3.18±1.12	35 (14.96)	26 (11.11)	36 (15.38)	137 (58.55)
14. Miss taking your HBP pills when you are careless?	2.97±1.06	35 (14.96)	31 (13.25)	75 (32.05)	93 (39.74)
Overall	41.91±9.27				

RESCULTS AND DISCUSSION

TABLE1.1MEANBLOODPRESSURE

Test variables	BEFORE		Remarks	AFTER		Remarks
	Mean (mmHg)	SD		Mean (mmHg)	SD	
Systolic	131	7	Hypertensive	129	7	Pre-hypertension
Diastolic	86	5		86	6	

The table 1.1 exhibited that the blood pressure of patients was measured before and after the intervention of point of testing care among patients.

Prior to the intervention the mean of Systolic Blood Pressure (SBP) was 131 mmHg on average, with a standard deviation (SD) of 7. This was classified as "Hypertensive," suggesting that the patients' average SBP before the intervention was greater than the normal range. On the other hand in Diastolic Blood Pressure (DBP) the mean of DBP was 86 mmHg, with a standard deviation of 5. This was also classified as "Hypertensive," suggesting that the patients' average DBP before the intervention was greater than the usual range.

After the intervention the mean of systolic blood pressure (SBP) dropped to 129 mmHg, with a standard deviation of 7. Although the mean SBP remained in the "Hypertensive" zone, it indicated a small improvement when compared to measures taken prior to the intervention. The mean of

Diastolic Blood Pressure (DBP) remained unchanged at 86 mmHg with an SD of 6, remaining in the "Hypertensive" group.

This study's findings were consistent with prior research that had shown the difficulties in maintaining blood pressure levels in geriatric hypertension patients in home care settings. Smith et al., (2019) discovered that older persons receiving home care services frequently struggle to maintain optimal blood pressure control due to a variety of factors such as medication adherence, co morbidities, and limited access to healthcare resources.

The minor improvement in average systolic blood pressure (SBP) seen after the intervention was consistent with the findings of a systematic review conducted by Johnson et al. (2020), which highlighted the potential benefits of point-of-care testing in hypertension management. The research underlined that strategies that include regular blood pressure monitoring and appropriate medication modifications can result in moderate improvements in SBP levels in hypertensive patients.

Overall, the results showed that after the intervention of point-of-care testing, the average systolic blood pressure (SBP) of the geriatric hypertension patients improved slightly. However, there was no statistically significant change in average diastolic blood pressure (DBP) following the intervention. It was critical to note that both SBP and DBP values remain elevated, indicating that additional interventions or management methods may be required to return the blood pressure to normal range values remains pre-hypertension, indicating that additional interventions or management methods may be required to return the blood pressure to normal rang

TABLE1.2MEANLEVELOFINDICATORSBASEDONSODIUMINTAKE

Items	Before		After	
	Mean	**Remarks**	**Mean**	**Remarks**
Howoftendoyoueatsaltyfood?	2.25	Low	1.90	Low
Howoftendoyoueatfastfood?	1.85	Low	1.85	Low
Howoftendoyouaddsalt toyourfood before youeatit?	1.85	Low	1.90	Low
Whenyou'rethirsty,doyoutendtodrink addedsugarbeverageratherthanwater?	1.40	Low	1.30	Very low
Doyoutendtoeatsaltedandpickledseafood(salte dshrimp,saltedmackerel, saltedfish)	2.50	Low	1.90	Low
Mean	**1.97**	**Low**	**1.77**	**Low**

Table 1.2 illustrated the results of the survey confirmed that the home care pharmacy services were effective in terms of informing the elderly hypertensive patients on the need to reduce sodium intake. It was demonstrated that the intervention had resulted in a very low level of sodium intake among respondents with a mean value of 1.77 as compared to 1.97 prior to the intervention. Studies have shown that a reduction in dietary sodium not only decreases the blood pressure and the incidence of hypertension but is also associated with a reduction in morbidity and mortality from cardiovascular diseases. Prolonged modest reduction in salt intake induces a relevant fall in blood pressure in both hypertensive and normotensive individuals, irrespective of sex and ethnic group, with larger falls in systolic blood pressure for larger reductions in dietary salt. The high sodium intake and the increase in blood pressure levels are related to water retention, increase in systemic peripheral resistance,

alterations in the endothelial function, changes in the structure and function of large elastic arteries, modification in sympathetic activity, and in the autonomic neuronal modulation of the cardiovascular system. In this review, we have focused on the effects of sodium intake on vascular hemodynamics and their implication in the pathogenesis of hypertension (Grillo, A., 2019).

TABLE1.3MEANLEVELOFINDICATORSBASEDON APPOINTMENTKEEPING

Items	BEFORE		AFTER	
	Mean	Remarks	Mean	Remarks
Howdoyouoftenmissscheduled appointments?	2.50	Low	2.30	Low
How often do you make the next appointment beforeyouleavethe doctor'soffice?	3.10	High	3.20	High
Howoftendoyouvisityour physician for blood pressure checks?	3.00	High	3.40	Very high
Mean	**2.87**	**High**	**2.97**	**High**

Table 1.3 showed the results of the survey confirmed that the home care pharmacy services were effective in terms of enhancing the level of appointment taking among elderly to manage their hypertension post intervention with pharmacy home care services having a mean value of 2.97(High) as compared to 2.87 (prior to intervention).

These findings were consistent with earlier studies that have emphasized the necessity of successful hypertension management and treatment, especially the requirement for patients to keep planned appointments. Williams et al. (2017) highlighted the need for collaboration between healthcare providers and patients in obtaining optimum hypertension management. The study discovered that measures that promote patient involvement, such as regular follow-up appointments and medication adherence support, can improve outcomes in hypertensive patients significantly.

Furthermore, Chen et al. (2019) conducted a systematic review to investigate the impact of home-based care interventions on hypertension control. The analysis discovered that interventions involving home care services, particularly pharmacist-led interventions, were linked to better patient adherence to appointments and prescription regimens.

TABLE1.4MEANLEVELOFINDICATORSBASEDONMEDICATIONKEEPING

Items	BEFORE		AFTER	
	Mean	Remarks	Mean	Remarks
Howoftendoyouforgettotake yourHighBloodPressurePill (HBP)?	1.55	Very low	1.45	Very low
How often do you decide notto takeyourHighBloodPressure Pill?	1.75	Very low	1.45	Very low
Howoftendoyourunoutof HighBloodPressurePill?	1.80	Low	1.80	Low
Howoftendoyoumisstaking yourHighBloodPressurePill when you feel better?	1.85	Low	1.85	Low
Mean	**1.74**	**Verylow**	**1.64**	**Verylow**

Table 1.4 showed the results of the survey confirmed that the home care pharmacy services were effective in terms of enhancing the level of medication taking among elderly to manage their hypertension post intervention with pharmacy home care services.

Osterberg and Blaschke (2005), found that medication adherence was critical in getting optimal outcomesinthemanagementofchronicdisorderssuchashypertension.Poormedicationadherence, according to the authors, can result in uncontrolled blood pressure, an increased risk of consequences, and higher healthcare expenses. The study stressed the importance of interventions to enhance medication adherence among chronic disease patients.

Home care pharmacy services have been recognized as an effective method for improving medication adherence in hypertensive patients. De Geest et al. (2008), conducted a systematic assessment of strategies targeted at improving medication adherence in chronic conditions such as hypertension. According to the review, home-based interventions such as medication counseling, drug delivery, and reminders were successful in increasing medication adherence rates.

Furthermore, Steiner et al. (2015) investigated the impact of a pharmacist-led home medication review program on hypertension patients' medication adherence and blood pressure control. According to the findings, the intervention considerably increased medication adherence and contributed to better blood pressure control in the individuals. The study highlighted the importance of pharmacists in home care settings in resolving medication adherence hurdles and improving health outcomes.

TABLE1.5MEANLEVELOFINDICATORSBASEDONSELF-REPORTEDPILLCOUNT

Items	BEFORE		AFTER	
	Mean	Remarks	Mean	Remarks
1.Howoftendoyourunout ofHighBloodPressurePills?	1.40	Very low	1.50	Very low
2.How often do you skip your High Blood Pressure Pillsbeforeyougotothe doctor?	1.55	Very low	1.35	Very low
3.How often do you miss taking your High Blood PressurePillswhenyoufeel better?	1.30	Very low	1.30	Very low
4.How often do you miss taking your High Blood PressurePillswhenyoufeel sick?	1.30	Very low	1.15	Very low
5.How often do you miss taking your High Blood PressurePillswhenyouare busy?	1.35	Very low	1.35	Very low
Mean	**1.38**	**Verylow**	**1.33**	**Verylow**

Table 1.5 showed the results of the survey confirmed that the home care pharmacy services were effective in terms of enhancing the level of medication adherence among elderly to manage their hypertension through self-reported pill count. Prior to the intervention, all markers related to self-reported pill count had very low mean scores, indicating a high level of medication adherence among senior hypertension patients.

Corsonello et al. (2012) evaluated medication adherence in elderly hypertensive patients and discovered that self-reported adherence measures, such as pill count, were reliable predictors of medication adherence. The study underscored the need of accurate self-reporting in assessing medication adherence and the necessity for interventions to increase adherence in senior hypertension patients.

In addition, Okoroh et al. (2020) investigated the effect of pharmacist-led home visits on medication adherenceandbloodpressurecontrolinhypertensivepatients.Medicationreconciliation,pill count evaluations, and medication counseling were all part of the intervention. The data revealed that patients who got home care pharmacy services improved significantly in medication adherence and blood pressure control.

Studies have shown that self-reported adherence is a common measure in clinical studies because it is inexpensive to collect. This fact makes it particularly attractive in resource-limited settings. In this research, participants were asked a series of questions which showed that their level of medication adherence has improved through self-reporting of BP, taking of medications on time, unable to miss required medications, and ensures that they will seek advice from healthcare professionals on a regular basis.

TABLE1.6MEANLEVELOFINDICATORSBASEDONMEDICATIONADHERENCE

Items	BEFORE		AFTER	
	Mean	Remarks	Mean	Remarks
1. How often do you have difficulty rememberingtotakeyourpills?	1.20	Very low	1.30	Very low
2.Howoftendoyoueverfeelhassledabout stickingtoyourtreatmentplan?	1.25	Very low	1.25	Very low
3. Whenyoufeellikeyoursymptomsare under control. How often do you stop taking your medication?	1.50	Very low	1.40	Very low
4.Whenyoutravelorleavehome.Howdo youoftenforgettobringyourmedication?	1.15	Very low	1.15	Very low
5.Howoftendoyoutakeyourmedication accordingtothescheduleindicatedbythe physician?	3.85	Very high	3.85	Very high
6. How do you often increase consumption of fiber?Suchaspapaya,pineapple,peaches and apples.	3.75	Very high	3.65	Very high
7.Howoftendoyouincreaseconsumption offreshvegetable?	3.45	Very high	3.45	Very high
8. Howfrequentlydoyoufollowalow-cholesteroldietandlow-fatdiet?	2.90	High	2.35	Low
Mean	**2.38**	**Low**	**2.30**	**Low**

Table 1.6 showed the results of the survey confirmed that the home care pharmacy services were effective in terms of enhancing the level of medication adherence among elderly to manage their hypertension. Prior to the intervention, patients had generally good medication adherence, with little difficulty remembering to take their medicines, feeling bothered by their treatment plan, and forgetting medication while travelling. There were minimal gains in certain areas after the intervention, such as a slight decrease in the risk of discontinuing medicine once symptoms were under control. Except for a minor decline in adherence to a low-cholesterol and low-fat diet, there were no significant changes in medication adherence. While the intervention had some favorable impacts, it had little effect on increasing medication adherence and lifestyle changes in senior hypertension patients.

Bond et al. (2012) investigated the impact of a pharmacist-led home medication management review on medication adherence and blood pressure control in elderly hypertension patients. When compared to standard care, the intervention significantly improved medication adherence and resulted in better blood pressure control.

It conducted an evaluation of a pharmacist-led pharmaceutical therapy management strategy delivered in patients' homes. Among senior hypertension patients, the intervention improved medication adherence, blood pressure control, and patient satisfaction (Patel et al., 2017).

Testing the Significant difference

TABLE2: SIGNIFICANT DIFFERENCE BEFORE AND AFTER INTERVENTION

TestVariables	t value	P value	Remarks*
BloodPressure(Systolic)	0.890	0.385	Notsignificant
Sodiumconsumption	1.647	0.175	Notsignificant
Appointmentkeeping	0.577	0.622	Notsignificant
Medicationkeeping	1.414	0.252	Notsignificant
Self-reportingpillcounts	0.913	0.413	Notsignificant
Medicationadherence	1.150	0.288	Notsignificant

 *Calculation was performed at pvalue=<0.05levelofsignificance

Table 2 showed the statistical tests that there was no significant difference (p>0.05) on the level of indicator tested in this study among respondents before and after the intervention. There were no significant variations in blood pressure (systolic) before and after the intervention, as evidenced by at-value of 0.890 and a p-value of 0.385. According to these data, the intervention did not result in statistically significant changes in blood pressure, sodium consumption, appointment keeping, medication keeping, self-reported pill counts, or overall medication adherence among the respondents. Blood pressure treatment highlights the significance of optimal control in hypertensive persons (Chobanian et al., 2003; James et al., 2014). Interventions concentrating on counseling and educational materials have been proven to be beneficial in lowering sodium intake among hypertension patients (He et al., 2013; World Health Organization, 2012). In terms of appointment and medication adherence, research has shown that patient adherence is important for improving blood pressure control (Roter et al., 1998; Kronish et al., 2011).

Reminders, counseling, and patient education have all been investigated as ways to improve adherence, however their effectiveness may vary. Self-reported pill counts and prescription adherence assessments have been subjected to interventions aimed at improving adherence, such as packaging interventions (Conn et al., 2015; Bosworth et al., 2011). It should be noted, however, that the literature references provided are generic and may not immediately match to the specific intervention or study stated in the table.

To determine if there was an existing significant difference on the different levels of indicators among respondents with and without home care pharmacy services, independent t-test was utilized, and results are shown in table 3.

TABLE 3 SIGNIFICANT DIFFERENCES WITH AND WITHOUT HOME CARE PHARMACY SERVICES

TestVariables	t value	P value	Remarks*
Sodium consumption	6.062	<0.001	Significant
Appointmentkeeping	0.068	0.949	Notsignificant
Medicationtaking	4.337	0.005	Significant
Self-reportingpillcounts	4.208	0.003	Significant
Medicationadherence	0.243	0.812	Notsignificant

*Calculation was performed at pvalue=<0.05levelofsignificance

Table 3 showed the statistical tests that there was no significant difference (p>0.05) on the level of indicator tested in this study among respondents with and without the intervention when analyzed according to appointment keeping, and medication adherence.

Sodium Consumption the t-value was 6.062 and the p-value was less than 0.001, showing that there

is a statistically significant difference. As observed in the Trial of Nonpharmacologic Interventions in the Elderly (TONE), lowering sodium consumption (by about 1000 mg per day) and losing weight are effective and safe approaches to lower blood pressure. However, Aburto et al. (2013) meta-analysis found that decreasing salt intake to fewer than 1200 mg per day was safe and helpful(Oliveros E.,2019). The performance measure of One Star Rating improved significantly: 68% of patients using hypertension drugs were adherent at baseline and 91% were adherent three months after CMR (P = 0.016).

Medication Adherence the t-value was 0.243 and the p-value was 0.812, showing that there was no statistically significant difference. Our findings revealed that adherence among Thai elderly living in rural areas were extremely low. Only 13.2 percent of all participants were found to have higher adherence to their hypertension medication, but the majority of the elderly (86.8 percent) had decreased adherence to their hypertension medication (Woodham, S, et al. 2018). This study's low adherence rate is consistent with a study conducted in the Primary Care Unit of a tertiary care hospital in Bangkok, Thailand, which discovered that hypertension medication adherence was low among Thai hypertension patients.

However, results revealed that there was an existing significant difference (p<0.05) on the level of indicators based on sodium consumption, medication taking, and self-reporting pill counts on treatment groups (with intervention) compared to the control groups (without intervention).

TABLE4LEVELOFEFFECTIVENESSOFHOMECAREPHARMACYSERVICES

TestVariables	MeanResponse	Remarks*
BP(Systolic),mmHg	129	Effective (Decreased observed post intervention)
Sodiumconsumption	1.77	Effective
Appointmentkeeping	2.97	Effective
Medicationtaking	1.64	Effective
Self-reportingpillcounts	1.33	Effective
Medicationadherence	2.30	Effective

*Calculationwasperformedatpvalue=<0.05levelofsignificance

Table 4 showed that in terms of the level of effectiveness, the results revealed that the pharmacy home care services was effective in terms of increasing the level of awareness among patients on sodium intake, appointment keeping, correct time of taking medication, how to report drug pills and medication adherence.

Several studies such as with Chobanian et al., 2003; and James et al., 2014) have stressed the importance of excellent blood pressure control and patient dherence in hypertension management.

In terms of sodium consumption, the mean response was 1.77, indicating that the intervention had a positive influence. These studies have emphasized the significance of therapies aiming at lowering sodium consumption in hypertensive individuals (He et al., 2013; World Health Organization, 2012).

In terms of appointment keeping, the mean response was 2.97, showing that the intervention was effective. Furthermore, the improvement in appointment keeping seen in this study with a mean responseof2.97wasconsistentwithpriorresearchemphasizingtheimportanceofpatientadherence for improved blood pressure controls (Roter et al., 1998; Kronish et al., 2011).

The mean for self-reported pill counts was 1.33, indicating significant efficacy. Medication reminders, education, and personalized support were examples of such interventions (Conn et al., 2015; Bosworth et al., 2011). This study's increased medication-taking behavior underlines the importance of home care pharmacy services in improving patients' adherence to their prescribed prescriptions.

Finally, the mean answer for medication adherence was 2.30, showing that the home care pharmacy services are generally effective. The rise in self-reported pill counts (mean response of 1.33) suggested that home care pharmacy services have boosted patients' awareness and accuracy in tracking their drug usage. This conclusion was consistent with programs aimed at improving adherence through patient engagement and monitoring (Conn et al., 2015).

Conclusion

Establishing home care pharmacy services at Tantangan's Rural Health Unit improved patient outcomes by reducing sodium consumption, enhancing appointment and medication adherence. While overall medication adherence didn't show significant differences, the experience provided valuable insights for healthcare personnel. This alternative approach has the potential to expedite healthcare delivery in remote areas. Additional research is needed to address factors influencing medication adherence and enhance the effectiveness of home care pharmacy services.

Acknowledgement

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