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PUBLIC HEALTH & PRIMARY CARE | RESEARCH ARTICLE

Does family involvement in patient education improve hypertension management? A single-blind randomized, parallel group, controlled trial

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Abstract: This study aimed to evaluate the effectiveness of family involvement in patient education on hypertension (HTN) management. This single-blind randomized, parallel group controlled trial was conducted in Sayyed-Al Shohada hospital in Urmia. One hundred participants who met inclusion criteria were selected by convenience sampling and randomly allocated into control, patient-oriented, family-oriented and patient and family-oriented groups. Interactive educational interventions were given to three intervention groups for four months. The control group received routine care. The Hill-Bone Compliance to High Blood Pressure Therapy Scale and a mercury manometer were used to collect data. Data was analyzed using SPSS V20. The results showed a significant difference in the mean scores of the medical treatment compliance (primary outcome) and blood pressure (BP) among four study groups after the intervention ($p < 0.0001$). Tukey's test revealed that medical treatment compliance significantly improved in the patient and family-oriented group compared to other groups after the intervention

Naser Parizad

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Masumeh Hemmati Maslakpak has a Ph.D. in nursing. Currently, she is an associate professor in the Urmia nursing and midwifery faculty. She is also working as an educational deputy of faculty and active member of the Maternal and Childhood Obesity Research Center with an interest in study design, data analyzing and manuscript writing and editing.

Behrooz Rezaei has a master of science innursing. He works full-time as an RN in a hospital who actively participated in designing, collecting and writing of the manuscript.

Naser Parizad has Ph.D in nursing. He is working as an assistant professor in Urmia nursing and midwifery faculty and an interest in a number of areas of nursing research who worked closely with the research team to design the trial, write, edit and approve the final manuscript.

PUBLIC INTEREST STATEMENT

"Hypertension is quite prevalent among the Iranian population. The awareness of hypertension is generally low in Iranians. Despite strong recommendations for prescribed therapy only 40–50% of patients adhered to their treatment. Poor medical treatment compliance prevents the patients from controlling their blood pressure. An uncontrolled blood pressure, in turn, results in frequent visits to medical centers, reduction in the quality of life of patients, and an increase in medical costs. This study aimed to evaluate the effectiveness of family involvement in patient education on hypertension management. In this study, 100 eligible participants, including patients and their family members were investigated in four different groups. The results showed that interactive educational interventions have a beneficial effect on treatment compliance. Patient education with the presence of a family member will promote adopting a healthier lifestyle, better managing blood pressure and eventually reduces the medical cost for patients and healthcare systems".

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World Health Organization. (2018). Raised blood pressure; situation and trends. Retrieved from http://www.who.int/gho/ncd/risk_factors/blood_pressure_text/en/

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($p < 0.0001$). Family involvement in patient education had a beneficial effect on treatment compliance and patient outcomes. Patients education with the presence of a family member will promote adopting a healthier lifestyle and better managing BP in patients with HTN. It will eventually reduce the medical cost for patients and healthcare systems.

Subjects: Nursing; Nurse Education & Management; Nursing Research; Primary Care Nursing

Keywords: hypertension management; patient; family members; education; randomized controlled trial; Iran

1. Introduction

Cardiac vascular diseases (CVDs) have been found to be the number one cause of death worldwide. An estimated 17.7 million individuals died from CVDs in 2015, demonstrating 31% of all international deaths (World Health Organization [WHO], 2017). Of these, complications of hypertension (HTN) account for 9.4 million deaths worldwide every year (Lim et al., 2012). Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke (WHO, 2017). HTN is a worldwide epidemic (Stamler, 2013). Globally, around 20% of females and 24% of males aged 18 and older had a raised blood pressure (BP) in 2015 (World Health Organization [WHO], 2018). Having HTN is defined as blood pressure (BP) which exceeds of 140/90 mm Hg, having a physician telling someone twice that they have HTN or if they take anti-hypertensive medications (Roger et al., 2012). Further, because of weak health systems, the numbers of people with HTN who are undiagnosed, untreated and uncontrolled are higher in low- and middle-income countries compared to high-income countries (World Health Organization [WHO], 2013). HTN is quite prevalent among the Iranian population (Aghaei Meybodi, Khashayar, Rezai Homami, Heshmat, & Larijani, 2014). Estimation of the overall prevalence of HTN in those ages 30–55 of the Iranian population was around 23% and 50%, respectively (Haghdoust, Sadeghirad, & Rezazadeh, 2008). HTN was reported as the most significant risk factor for CVDs in an Iranian population (Sarrafzadegan et al., 2011).

Despite effective pharmacologic and non-pharmacologic therapies, HTN of approximately half of adults remains uncontrolled (Magid & Green, 2013; Mozaffarian et al., 2016). According to available data, the awareness, treatment and control rate of HTN in Iranians are generally low and estimated to be approximately 50%, 35% and, 16%, respectively (Khosravi et al., 2010). Despite strong recommendations for prescribed therapy adherence by caregivers, only roughly 40–50% of those with chronic diseases such as HTN adhered to their medications worldwide (Roberts et al., 2014). Patient compliance to medical treatment can be defined as following through on the dietary, medication and lifestyle changes recommended by the health care providers (Leiva et al., 2010). Poor medication compliance prevents the patients from achieving the goals of their treatment plans and, ultimately, controlling their BP. An uncontrolled BP, in turn, results in frequent visits to medical centers, reduction in the quality of life of patients, and an increase in medical costs (Vervloet et al., 2011).

It is well known that lifestyle factors play a crucial role in the development of HTN and future steps need to be taken to provide interventions that improve lifestyle factors in economically developed and developing countries (Bromfield & Muntner, 2013). Several reports have documented the importance of lifestyle modifications (exercise, a diet rich in fruits and vegetables and low in fat and sodium, weight control/reduction, restricting alcohol consumption, especially excessive drinking) in the prevention and treatment of high BP (Baena et al., 2014; Khalesi, Irwin, & Sun, 2018; Weber et al., 2014). A clinical practice guideline by the American Society of Hypertension and the International Society of Hypertension for the management of HTN recommend lifestyle modification as an important and effective first-line treatment strategy (Weber et al., 2014). The

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current challenge to clinicians is implementing lifestyle changes in the context of routine medical care (N. Huang & Duggan, 2008).

Patient education regarding medication compliance along with teaching healthy lifestyle behaviors is an effective tool for BP management in the hypertensive population (Hacihasanoğlu & Gözüm, 2011). A wide range of different strategies and interventions have been used to support the patients in adherence to treatment plans, although the results are not consistent (Bobrow et al., 2014). Finding better ways of communicating with patients, such as actively listening to the patient and including the patient in the decision-making process has been demonstrated to effectively reduce patient anxiety, along with improving treatment adherence and lifestyle changes (Cobos, Haskard-Zolnierek, & Howard, 2015). A possible strategy to improve HTN management is an extensive education program for the public and people with HTN (Campbell & Sheldon, 2010). Effective change in behavior occurs when learners actively interact with the content to be learned, with the teacher and with each other (MacKeracher, 2004). Group discussion allows for an ideal level of interaction and improves communication skills (Meo, 2013). Westberg and Jason (2004) cite several compelling reasons for using group discussion to promote learning. They believe learners are more likely to learn from each other in a supportive, nonjudgmental environment. All group members can both give and receive peer-oriented feedback and they can practice skills that can be applied later in real-life situations (Westberg & Jason, 2004).

Enhancement of community-wide BP control rates and HTN prevention can only be achieved via multilevel and multicomponent approaches that include families and many other community organizations (Beato, 2004). Family-oriented patient education defines as involvement of family members or significant others in education of patients and may be useful in the control of HTN (Chobanian, 2003). Family members should be involved in training programs to understand and identify the needs of patients and to comply with treatment plans and provide care support (Hinkle & Cheever, 2015). Family involvement plays a significant role in HTN treatment, by encouraging the acceptance of self-care practices such as proper diet, medication adherence and physical exercise. Thus, it was considered as a facilitating agent of adherence to treatment (Barreto & Marcon, 2014). Long-term BP control requires intervention that includes training and reminders about medication, medical appointments and follow-up to support adherence and persistence on treatment (Bobrow et al., 2014). This study primarily aimed to evaluate the effectiveness of interventions (small group discussion) based on a healthy lifestyle on HTN management (medication adherence, low sodium regimen adherence, medical appointments adherence and the overall treatment compliance) in four groups (control, patient-oriented, family-oriented, patient and family-oriented groups). The second objective of the study is to evaluate the effectiveness of interventions on the controlling of systolic and diastolic BP in patients with HTN. Our hypothesis was that the interactive group discussion might have an effect on patients' scores on HTN management and systolic and diastolic BP in three intervention groups.

2. Methods

2.1. Research design and setting

This single-blind randomized, parallel group controlled trial study was conducted at the Urmia clinical-educational center of Sayyed-Al Shohada in Iran between December 2015 and March 2016. The institutional review board of Urmia University of Medical Sciences approved the study (Research ethical code IR.UMSU.ac.ir.2013.284). The study was carried out in accordance with the code of ethics of the world medical association (Declaration of Helsinki). This study was registered in the Iranian Registry of Clinical Trials (Registration number IRCT2015122317059N4).

2.2. Participants

Patients with HTN and their family member were considered as participants in this study. Patients referring to the clinical-educational center of Sayyed-Al Shohada, were included in the trial if they met the following criteria: (1) had a known history of HTN for at least a year, (2) aged between 18

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and 60 years, (3) had no underlying health problem such as a history of psychological disorders, cognitive impairment, hearing problems, chronic kidney failure, or CVDs, and (4) both the patient and the family member were literate and willing to cooperate in the study. Exclusion criteria consisted of: (1) patients' or family members' failure to participate regularly in the educational sessions, (2) unwillingness to participate further in the study, (3) having underlying health conditions such as CVDs, cognitive impairment, hearing problems, psychological disorders and chronic kidney failure and (4) having no family. After consulting with a statistician and considering the findings of a similar study by Sadeghi et al (SBP = 154.43 ± 16.16 in the intervention group, SBP = 152.62 ± 14.40 in the control group) the sample size was calculated at 100 participants for four groups by using the Power Analysis Software. Considering the probability of attrition in the study, 108 participants were recruited based on the convenience method and assessed for eligibility. Eight participants were excluded due to not meeting the inclusion criteria or not willing to participate in the study (Sadeghi, Mohseni, & Khanjani, 2014).

Primarily these 100 selected participants were invited to a meeting with researchers. All of them were given informed consent to sign and participate in the study. At the introductory meeting, the researchers introduced the objectives of the study and explained the steps involved in the research process, and recorded participants' telephone numbers. In the next step, 100 selected participants were randomly allocated into 4 equal, 25-member groups: control group, patient-oriented group, family-oriented group and patient and family-oriented group by using four different-colored envelopes. Patient-oriented group included patients with HTN. Family-oriented group included designated family members. Patient and family-oriented group included both patients and designated family members. The participants in the three interventional groups (patient-oriented, family-oriented and patient and family-oriented groups) were invited to attend another meeting to select an appropriate time for their interactive educational sessions (Figure 1).

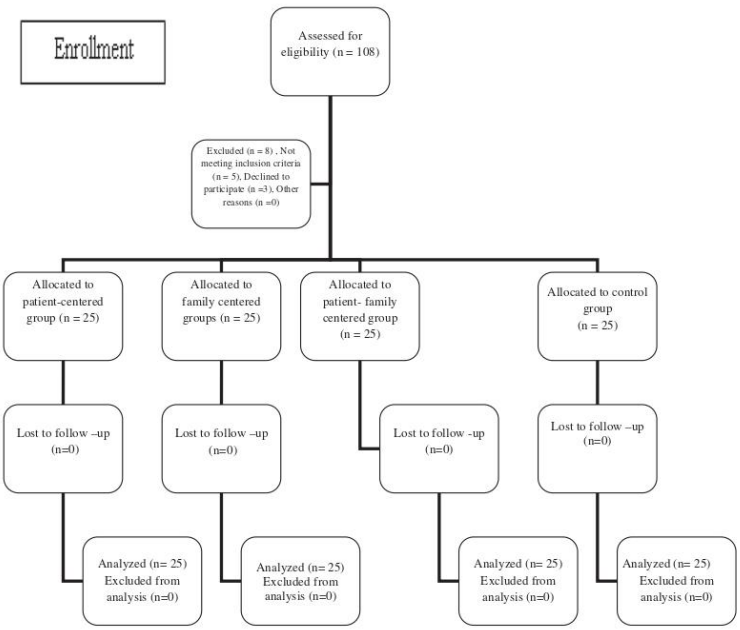

Figure 1. The sampling framework of the study.

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2.3. The primary outcome measures

All study variables were measured twice: at baseline and after the intervention. The primary outcome measure was the Hill-Bone Compliance to High Blood Pressure Therapy Scale, as developed by Kim et al in 2000 (Kim, Hill, Bone, & Levine, 2000). The questionnaire consists of 14 questions which fall into three categories: medication adherence, low sodium regimen adherence and medical appointments adherence. Nine of 14 questions measured medication adherence such as "How often do you forget to take your HBP medicine?". Two items asked about medical appointments-keeping such as " How often do you miss scheduled appointments?". Three questions calculated low sodium regimen adherence, for example "How often do you eat salty food?". Each item was a four-point Likert scale: never (1), occasionally (2), often (3) and always (4); the maximum and minimum possible scores were 56 and 14, respectively. Higher scores indicate lower adherence. In the questionnaire, there was also a section for participants' demographics including age, gender, marital status, number of children, level of education, place of residence, employment status, level of income (for patient and family member), how long they have had the disease, history of HTN in the family, and whether or not the patient has any other major underlying health problems. In both phases of the study, three researchers interviewed all the participants face-to-face, going through each question and completing the questionnaires themselves. Interviewing researchers had been already briefed about and oriented to the questionnaires by the lead researcher.

This scale has been validated in many investigations, one of which was in a South African primary health care setting. Lambert et al. verified the criterion validity and internal consistency of the Hill-Bone Scale; their results were compared favorably with those from an urban African-American setting (Standardized Cronbach's alpha was 0.74–0.84) (Lambert, Steyn, Stender, Everage, & Fourie, 2006). In Iran, Taher et al. confirmed the validity of the scale based on the content validity approach and under the supervision of 12 faculty members at the Shahid Beheshti School of Nursing. Moreover, the reliability of the scale was confirmed by calculating the Cronbach's alpha coefficient of the scores of 20 patients with HTN; the alpha was found to be 0.80 (Taher, Abredari, Karimy, Abedi, & Shamsizadeh, 2014). In the present study, the content validity of the scale was verified by 10 nursing faculty members and 5 cardiovascular specialists, and the reliability of the instrument was calculated to be 0.87, 0.94, 0.79, 0.88, respectively for total treatment, medication, low sodium regimen and medical appointments adherence using Cronbach's alpha.

2.4. The secondary outcome measures

In addition to our primary outcome measures, we also calculated means and standard deviations (SD) of the six measured BPs. BP was measured by using a mercury manometer (MA-166) which was fixed on the left arm of participants. Systolic blood pressure (SBP) and diastolic blood pressure (DBP) measurement were taken while the participants were seated with their right arm at heart level. In the test session, SBP and DBP were taken three times in the morning and three times in the evening within 5 minutes apart (Jade, 2018). The average of six measured SBP and DBP was considered. The same instruments were used for the baseline and follow-up measures.

2.5. Procedure

The content of group discussion was about eating healthy food and decreasing the salt in the diet, maintaining a healthy weight, increasing physical activity, managing stress, quitting smoking, monitoring BP at home, adhering medical appointments and adhering medication regime. In this study, the same educational content was used to educate the three interventional groups. The participants in the patient-oriented, family-oriented and patient and family-oriented groups, were subsequently scheduled to attend the educational classes held at the clinical-educational center of Sayyed-Al Shohada in Urmia.

After consulting with the cardiologist and considering educational content volume, the research team decided to hold 48 training sessions during the following 4 months. After

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conferring with the participants, the classes were scheduled as follows: The classes were held four times a week in the first month. They were held three times a week in the second and third month and twice a week in the fourth month. These interactive educational classes were held between 8 A.M. and 2 P.M. during working days. Patients and their designated family members in family-oriented and patient and family-oriented groups (one fixed member for each patient) chose an appropriate time according to their convenience. These classes lasted around 50 minutes. In each 50 min session, in addition to group discussion, a combination of didactic methods such as a short lecture, eliciting experience of individual participants, small group work, experiential exercises and individual work is also used. The last session included action planning by writing a "'letter to oneself'", which every participant received 4 months after education. Didactic materials included overhead transparencies, flip charts, handouts and worksheets. The aims of this program included providing information regarding lifestyle and health, initiating self-reflection on healthy lifestyles, changing attitudes, enhancing positive emotions regarding lifestyle changes and encouraging action planning. All interactive educational group discussions were led by three researchers who had been trained and coordinated by a research group leader before the intervention. They had also involved in developing the intervention and used peer supervision for any difficulties while conducting the intervention.

To assure the treatment integrity, samples from all courses at each site were observed by external judges using a structured observational sheet. It contained a checklist regarding contents, the didactic methods sequence, and duration of each of the sessions as well as the proportion of patients participating actively. These checks confirmed that the intervention was delivered as prescribed by the manual. It showed that the majority of the participants was actively taking part during a session. The participants in the control group were given routine education. The control group received the paper-based educational materials and all participants completed the Hill-Bone Scale and their BP was measured six times at the end of the intervention.

2.6. Data analysis

Analysis was performed on 100 participants who completed both the baseline and 4-month follow-up assessments (Figure 1). We used the Shapiro–Wilk test to determine the normal distribution of the data. The analysis of variance (ANOVA) was used in the case of normal distribution. Whenever there were significant differences among four groups with regard to normal distribution, we used Tukey's test to make statistical comparisons among intervention groups. The alpha level of significance for all inferential statistics was set at 0.05. Data was analyzed by the researcher who was blinded to the data using IBM SPSS software (version 20.0 SPSS Inc., Chicago, IL, USA).

3. Results

3.1. Demographic characteristics

Chi-square and Fisher exact test showed no significant difference in the patients' demographic characteristics (gender, education, marital status, employment status, and smoking). ANOVA test showed that the difference in the mean number of age, disease duration and BMI was not statistically significant ($p < 0.05$) (Table 1).

3.2. Primary outcomes(treatment compliance)

The ANOVA analysis showed no significant differences among the four study groups regarding the medication adherence score in the pre-intervention period ($p = 0.352$). However, there were significant differences among the four groups' mean medication adherence scores at the end of the study (control group: 21.72 ± 2.20, family-oriented group: 13.44 ± 3.26, patient-oriented group: 16.64 ± 2.59 and patient and family-oriented group: 12.36 ± 2.36; $p < 0.0001$). At the beginning of the study, the results of ANOVA showed no significant differences among the four groups in mean scores of low sodium regimen adherence. However, after the intervention, analysis showed a significant difference in mean low sodium regimen adherence scores of control group

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Table 1. Demographic characteristics of participants in the four study groups

Variable		Control, *N* (%)	Family-oriented group, *N* (%)	Patient-oriented group, *N* (%)	Patient-and-family-oriented group, *N* (%)	*p* Value
Gender	Female	10(40)	(64) 16	14(56)	15(60)	$p = 0.341$ *
	Male	15(60)	9(36)	11(44)	10(40)	
Marital status	Married	24(96)	25(100)	25(100)	25(100)	$p = 0.287$ **
	Single	1(4)	0(0)	0(0)	0(0)	
Employment status	Currently unemployed	8(32)	6(24)	5(20)	1(4)	$p = 0.212$ **
	Employed	16(64)	18(72)	18(72)	23(92)	
	Retired	1(4)	1(4)	2(8)	1(4)	
Education level	Primary and secondary school	21(84)	21(84)	24(96)	25(100)	$p = 0.071$ **
	High school & University	4(16)	4(16)	1(4)	0(0)	
Smoking	Yes	5(20)	2(8)	6(24)	7(28)	$p = 0.622$ *
	No	20(80)	28(92)	19(76)	18(72)	
Age Mean)SD)		53.20 ± 10.05	51.88 ± 8.58	54.28 ± 8.82	49.96 ± 8.27	$p = 0.363$ ***
BMI(SD)		24.77 ± 2.9	24.92 ± 3.18	24.10 ± 2.1	24.64 ± 3.03	$p = 0.104$ ***
Disease duration Mean)SD)		5.33 ± 1.66	5.67 ± 2.89	5.26 ± 1.47	5.62 ± 1.11	$p = 0.322$ ***

* Chi-square. ** Fisher exact test. *** Analysis of variance.

(7.48 ± 1.12), family-oriented group (4.68 ± 1.18), patient-oriented group (5.24 ± 1.16) and patient and family-oriented group (3.80 ± 0.81) ($p < 0.0001$). With regard to the medical appointments adherence scores, the results of the ANOVA indicated no significant differences among the four study groups in the pre-intervention period ($p = 0.608$). Nevertheless, there were significant differences among the four groups' mean medical appointments adherence scores after the intervention (control group: 5.16 ± 0.80, family-oriented group: 3.12 ± 0.88, patient-oriented group: 3.80 ± 0.81 and patient and family-oriented group: 3.48 ± 0.71; $p < 0.0001$). No significant differences were observed among the four groups in mean scores of the overall treatment compliance before the intervention. However, a significant difference was observed in mean the overall treatment compliance scores of (control group: 34.36 ± 2.78, family-oriented group: 21.24 ± 3.62, patient-oriented group: 25.68 ± 3.59 and patient and family-oriented group:19.46 ± 2.73) (ES = 1.8, $p < 0.0001$,) (Table 2).

3.3. Secondary outcomes

The results of the ANOVA showed that means and SDs of SBP and DBP were not different among the four study groups before the intervention. The interventions decreased mean of SBP (5.00 ± 4.53 mmHg in the family-oriented group, 7.32 ± 2.54 mmHg in the patient-oriented group and 8.40 ± 6.11 mmHg in the patient and family-oriented group). After the intervention means and SDs of SBP were significantly different among the four study groups ($p < 0.0001$). Similar results were observed for DBP values (4.84± 2.77 mmHg in the family-oriented group and 8.72± 6.20 mmHg in the patient-oriented group and 8.76 ± 6.20 mmHg in the patient and family-oriented group). After the intervention means and SDs of DBP were different among the four study groups ($p < 0.0001$) (Table 3).

Tukey's test revealed that medication adherence ($p < 0.0001$), low sodium regimen adherence ($p < 0.0001$), medical appointments adherence ($p < 0.019$) and treatment compliance ($p < 0.0001$) significantly improved in the patient and family-oriented group compared to other groups after the intervention (Table 4).

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Table 2. Comparison of treatment compliance and its domains among the four groups at the beginning and at the end of the study

Variable		Control group	Family-oriented group	Patient-oriented group	Patient-and-family-oriented group	*p* Value ANOVA
		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	
Medication adherence	Pre-intervention	19.40 ± 2.02	18.64 ± 1.52	18.96 ± 1.54	19.68 ± 2.03	$F = 1.856$ $p = 0.142$
	Post-intervention	21.72 ± 2.20	13.44 ± 3.26	16.64 ± 2.59	12.36 ± 2.36	$F = 74.658$ $p < 0.0001$
Low sodium regimen adherence	Pre-intervention	7.76 ± 1.85	7.20 ± 1.19	7.48 ± 1.26	7.60 ± 1.15	$F = 0.625$ $p = 0.601$
	Post-intervention	7.48 ± 1.12	4.68 ± 1.18	5.24 ± 1.16	3.80 ± 0.81	$F = 52.983$ $p < 0.0001$
Medical appointments adherence	Pre-intervention	5.24 ± 0.87	4.96 ± 0.88	4.76 ± 0.83	5.16 ± 1.17	$F = 1.270$ $p = 0.289$
	Post-intervention	5.16 ± 0.80	3.12 ± 0.88	3.80 ± 0.81	3.48 ± 0.71	$F = 30.617$ $p < 0.0001$
Treatment compliance	Pre-intervention	32.40 ± 3.60	30.80 ± 2.06	31.20 ± 2.02	32.44 ± 3.30	$F = 0.58$ $p = 0.981$
	Post-intervention	34.36 ± 2.78	21.24 ± 3.62	25.68 ± 3.59	19.46 ± 2.73	$F = 26.129$ $p < 0.0001$

Table 3. Comparison of systolic and DBP among the four groups at the beginning and at the end of the study

Variable		Control group (Mean ± SD)	Family-oriented group (Mean ± SD)	Patient-oriented group (Mean ± SD)	Patient-and-family-oriented group (Mean ± SD)	ANOVA
(SBP)	Pre-intervention	13.28± 152.48	143.08 ± 11.01	8.83 ± 147.32	14.18± 146.80	73. $F = 7$ 062.0 = p
	Post-intervention	154.68 ± 13.27	138.08± 9.70	140.00± 9.12	138.40± 11.43	03. $F = 24$ $p < 0.0001$
	Pre minus post	−2.20± 2.06	5.00± 4.53	7.32± 2.54	8.40± 6.11	36. $F = 60$ $p < 0.0001$
(DBP)	Pre-intervention	85.48± 7.51	81.48± 9.93	88.32± 6.83	83.96± 10.24	71. $F = 7$ 0.057 = p
	Post-intervention	86.88± 8.00	76.64± 9.63	79.60± 6.75	75.20± 8.35	14. $F = 22$ $p < 0.0001$
	Pre minus post	−1.40± 2.12	4.84± 2.77	8.72± 6.20	8.76± 6.20	82. $F = 56$ $p < 0.0001$

4. Discussion

Study results were discussed in three separate sections: first, interactive group discussions had a significant affect on treatment compliance (medication, low sodium regimen and medical appointments adherence) of patients with HTN. Second, the affect of interactive educational intervention on medical treatment compliance was more significant in patients and family-oriented group compared to others. Third, family-oriented patient education resulted in improving BP control and ultimately reduced systolic and DBP in patients with HTN.

In line with our results previous studies have confirmed that educational interventions improved patients' knowledge about their disease, general comprehension of medications and their beliefs about medicines and ultimately would increase their active participation in treatment (Magadza, Radloff, & Srinivas, 2009; Rubin, 2005). Similar to our findings, Kayima et al. mentioned one of the ways to improve treatment compliance in patients with high BP is to educate patients (Kayima,

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Table 4. Pairwise comparison of self-care and its domains among the four groups at the beginning and at the end of the study

Variable	Groups	Control	Patient-oriented	Patient-and-family-oriented	Family-oriented
Medication adherence	Family-oriented	$p < 0.0001$	$p = 0.476$	$p < 0.0001$	–
	Patient-oriented	$p < 0.0001$	–	$p < 0.0001$	$p = 0.476$
	Patient-and-family-oriented	$p < 0.0001$	$p < 0.0001$	–	$p < 0.0001$
	Control group	–	$p < 0.0001$	$p < 0.0001$	$p < 0.0001$
Low sodium regimen adherence	Family-oriented	$p < 0.0001$	$p = 0.025$	$p = 265$	–
	Patient-oriented	$p < 0.0001$	–	$p < 0.0001$	$p = 0.025$
	Patient-and-family-oriented	$p < 0.0001$	$p < 0.0001$	–	
	Control group	–	$p < 0.0001$	$p < 0.0001$	$p < 0.0001$
Medical appointments adherence	Family-oriented	$p < 0.0001$	$p = 0.394$	$p = 0.019$	–
	Patient-oriented	$p < 0.0001$	–	$p = 0.499$	$p = 0.394$
	Patient-and-family-oriented	$p < 0.0001$	$p = 0.499$	–	$p = 0.019$
	Control group	–	$p < 0.0001$	$p < 0.0001$	$p < 0.0001$
Treatment compliance	Family-oriented	$p < 0.0001$	$p = 0.298$	$p < 0.0001$	–
	Patient-oriented	$p < 0.0001$	–	$p = 0.001$	$p = 0.298$
	Patient-and-family-oriented	$p = 0.007$	$p = 0.001$	–	$p < 0.0001$
	Control group	—	$p < 0.0001$	$p = 0.007$	$p < 0.0001$
(SBP)	Family-oriented	$p < 0.0001$	$p = 1.000$	$p = 0.926$	–
	Patient-oriented	$p < 0.0001$	–	$p = 0.956$	$p = 1.000$
	Patient-and-family-oriented	$p < 0.0001$	$p = 0.956$	–	$p = 0.926$
	Control group	–	$p < 0.0001$	$p < 0.0001$	$p < 0.0001$
(DBP)	Family-oriented	$p < 0.0001$	$p = 0.926$	$p = 0.585$	–
	Patient-oriented	$p < 0.0001$	–	$p = 0.241$	$p = 0.926$
	Patient-and-family-oriented	$p = 0.013$	$p = 0.241$	–	$p = 0.585$
	Control group	–	$p < 0.0001$	$p = 0.013$	$p < 0.0001$

*Tukey's test

Wanyenze, Katamba, Leontsini, & Nuwaha, 2013). Through patient education, all misunderstandings that patients have about their treatment can be explained. This can improve patients' adherence to treatment (Saounatsou et al., 2001) and may then possibly lead to improved BP control (Gwadry-Sridhar et al., 2013; Park et al., 2011).

The results also showed that patients' treatment compliance has promoted more in the patient and family-oriented group compared to other intervention groups. Consistent with our findings, a study result indicated that poor family support along with other factors as causes of poor treatment compliance among patients with HTN (Olowookere et al., 2015). Shen et al. revealed that the family member-based educational intervention has positive effects on patients' adherence to BP monitoring and hypertensive medications (Shen et al., 2017). Implementing of a family member-based management in patients with HTN in rural China shows satisfactory effects with respect to improved treatment compliance and BP control (S. Huang, Chen, Zhou, & Wang, 2014). Thus, family caregivers need information and training to ensure that patients' needs are met and this requires developing patient/family education materials and training programs (Houts, Nezu, Nezu, &

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Bucher, 1996). A systematic review reported that interventions including patients and families education through individual and group discussion improved patients' knowledge of medications, anti-hypertensive therapy and BP control (Gwadry-Sridhar et al., 2013). Similar to our findings, the positive effect of family-based education on appointment-keeping behavior, BP monitoring in patients with HTN has been confirmed in an earlier study (Morisky, DeMuth, Field-Fass, Green, & Levine, 1985). Barreto and Marcon reported that the family facilitates patients' adherence to treatment. Patients perceive the family as a safety, sympathetic and supportive sources. Thus, recognizing the strengths and weaknesses of patients' families can help nurses to adopt proper strategies in their care in a therapeutic process (Barreto & Marcon, 2014). Miller et al. confirmed that family support had an important impact on treatment adherence in patients with chronic diseases. They also, reported that non-adherence to medical treatment increased in patients, when there were no family members involved in patient education and daily care (Miller & DiMatteo, 2013).

In this study, interactive educational group discussions in all intervention groups (family-oriented, patient-oriented and patient and family-oriented groups) led to decreased systolic and diastolic BP in patients. Talking to patients and their families about changing lifestyle and encouraging them to have a healthy lifestyle, exercising appropriately for their age, consuming proper nutrition with a low salt diet was an effective step in reducing BP. An experimental evidence has suggested that support from family can help patients take their anti-hypertensive medications correctly and their systolic or diastolic BP were decreased significantly after 6 months intervention (Shen et al., 2017). Consistent with our result, Morisky et al. revealed that the family member support educational program had significant effects on decreasing in DBP variability (Morisky et al., 1985). A recent study in Iran, investigated the effects of group discussion with mail high school students on their parents' lifestyle and HTN control showed positive effects of the intervention on patients regarding controlling HTN, decreasing BP, adhering to diet and anti-hypertensive medications (Ezzati, Anoosheh, & Mohammadi, 2012). Implementation of the family-centered empowerment model for elderly people with HTN has been associated with controlling and improving the BP (Keshvari, Hedayati, Moeini, & Alhani, 2015). This fact can also be observed in the present study, as family involvement in patient education was reported as facilitating BP management in patients with HTN.

Our study has several possible limitations. First, our study population was limited to a select group of patients with HTN and their family members living in Urmia, and these patients may not represent all other hypertensive patients. Second, our sample size calculated 100 patients for four groups that are relatively low. Therefore, our study findings should be generalized to the clinical situation with caution. Third, patients selected one family member to participate in educational sessions, and it is more likely that family members participating in the groups were more supportive of patients than family members not participating. There was also a possibility of confounding variables, including uncontrollable variables, such as the psychomental characteristics and the cultural background of patients and their families, as well as their motivation to learn that could affect their learning ability.

5. Conclusion

The results revealed that family involvement in patient education plays a significant role in HTN management, by encouraging the patients to adhere to medication, low sodium diet and medical appointments. The results also indicate that iteractive educational interventions based on a healthy lifestyle with the patient or family are effective in increasing treatment compliance and reducing systolic and diastolic BP. However, if education is held with the presence of both the patient and the family, the greater effect on treatment compliance and BP control will be observed.

5.1. Implication for practice

Therefore, it is suggested that iteractive educational interventions such as small group discussions to be held with the presence of a family member to promote adopting a healthier lifestyle and better managing BP in patients with HTN. Health system managers and policy makers can include

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and mandate family-oriented education in the routine nursing care and clinical services in order to promote HTN management. It ultimately reduces the medical cost for both patients and health-care systems.

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Competing interest
The authors declare no conflicts of interest.

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Effect of Family-Oriented Health Education Program on Awareness, Adherence to Treatment and Control among Hypertensive Patients

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Abstract

Background: Hypertension is a major health problem in Egypt with low rates of awareness, adherence, and control. Family oriented health education program is needed to know the effect of family involvement on the outcome of hypertension. Aim of the study: to improve care provided to hypertensive patients in family practice settings. Subjects and methods: This study was conducted as an intervention study. The awareness, adherence to treatment and control of hypertension were assessed before and after the intervention program through a structured interview with hypertensive patients and their families (at least one family member attended once/month over 6 months). The study was conducted at two family practice settings (the family practice outpatient clinic and El Mahsama family practice center, both are affiliated to Suez Canal University, Egypt). There were 206 hypertensive patients, who were recruited to reach the estimated sample size (190 patients) to start the intervention program. Results: The overall awareness, adherence, and control before the intervention were 60.2%, 37.1%, and 12.9% respectively. One month after the end of the intervention program, all non-aware patients became aware (p<0.001) and the pre-post adherence and BP control improved significantly (p<0.01 and p< 0.001 respectively). The rural residence and adherence improvement were statistically significant positive predictors of improvement of hypertension control. Conclusion: The family oriented-health education program is effective to improve awareness, adherence, and control of hypertension.

***Keywords*:** Hypertension, Adherence, Control, Family oriented, Health education

Introduction

The detection and control of hypertension is a major public health challenge [(1)]. Up to three-quarters of the world's hypertensive population will be in developing countries by the year 2025[(2)], and Egypt is one of these developing countries. The prevalence of hypertension in Egypt is 26.3% with low rates of awareness (37.5%), adherence (23.9%), and control (8%)[(3)]. The Healthy People 2010 report targets a control rate of 50% within 5 years, which would be reached if at least 80% of hypertensive individuals will be aware of their condition, 90% will be treated, and 70% of those treated will be controlled[(4,5)]. The chronic care model puts emphasis on the involvement of the community as well as the family members in the management plan[(6)]. Behavioral risk factors tend to cluster within families because members share similar

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diets, physical activities, and tobacco use[7]. Studies on family involvement were conducted on children and adolescents with chronic medical diseases[8,9], as well as caregivers of elderly individuals with dementia, stroke, or cancer, or those undergoing palliative care[10]. Little attention, however, has been paid to the effect of family involvement on chronic physical diseases among adults. To the best of my knowledge, this is the first study discussing the effect of family oriented care on a chronic disease in Egypt.

Subjects and Methods

Patients with hypertension (BP ≥140/90 mmHg) were recruited from two family practice settings (the family practice outpatient clinic and El Mahsama Family practice center, which are both affiliated to Suez Canal University, Egypt). These settings were selected because both of them provide a comprehensive care to patients with chronic diseases (e.g. hypertension) as well as they are the sites of the researcher's work (which give more accessibility). Patients >18 years, both genders, with essential hypertension and mentally competent were included in the study, while pregnant and patients with history of disabling complications (e.g. stroke, end stage renal disease, retinopathy) were excluded because of pregnancy induced hypertension and inability to participate in the program respectively. A convenience sample was conducted, from which 206 hypertensive patients were recruited until the calculated sample size (190 participants) of unaware, non-adherent, and uncontrolled hypertensive patients was fulfilled. The participants and their families (At least one family member attended once/month over 6 months) were interviewed to assess socio-demographic, disease and medication characteristics, as well as patient's awareness and family member's role. The modified Hill-Bone compliance scale, which is a valid tool in English, was translated into Arabic and used to assess the level of adherence. It is comprised of 10 items. Responses ranged from none of the time (scoring 1) to all of the time (scoring 4), so adherence scores of 10 indicated perfect adherence and greater than 10 indicated imperfect adherence[11, 12]. Blood pressure was measured according to a standard method to assess BP control (BP<140/90)[13]. The health education program was conducted once/ month for 6 months, using different educational methods e.g. discussions, counseling and distribution of materials. The contents of the program were tailored according to each patient's level of knowledge and based on social cognitive theory[14]. Pilot study was conducted on 20 patients (not included in the sample) to ensure understandability and relevance of the questions. An intervention study was used in which awareness, adherence to treatment and control of hypertension were assessed before and after the intervention program. Figure(1)gives additional details about the steps.

Operational definitions

Awareness: is based on the subjects report of a prior diagnosis of hypertension made by a health professional[12].

Adherence: is defined as the extent to which a person's behavior–taking medication, following a diet, and/or executing lifestyle changes-corresponds with agreed recommendations from a health care provider[21].

Control of hypertension: defined as pharmacological treatment associated with SBP <140 mmHg and a DBP <90 mmHg[14].

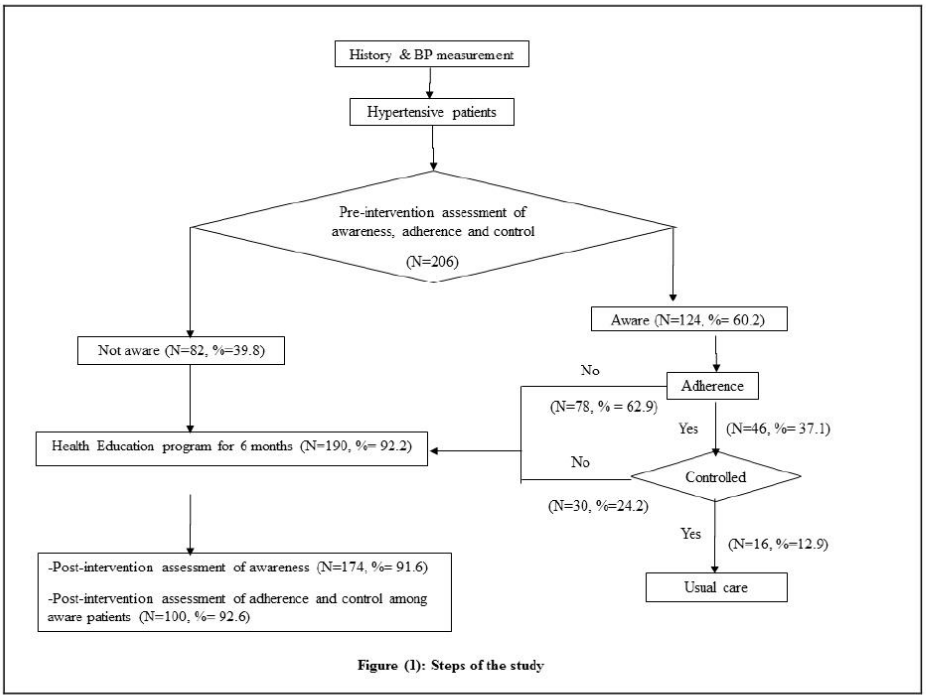

Figure (1): Steps of the study

Statistical Analysis

The statistical package for social sciences (SPSS 20.0.0) was used for analysis of data. Descriptive tables in the form of frequencies and percentages were used for qualitative variables, and means and standard deviations for quantitative variables. Pre-post results were compared using chi-square test. P-value <0.05 was considered statistically significant.

Results

The total sample before the intervention was 206 hypertensive patients in which the overall awareness, adherence and control before the intervention were 60.2% (124 out of 206 patients), 37.1% (80/124 aware patients) and 12.9% (16/124 aware patients) respectively. Table 1 demonstrates the socio-demographic, disease and medication characteristics of patients who participated in the study before intervention. The mean age was 54.3 ±8.2, with a range between 40-80 years. Female patients represented 51.5% and less than two-thirds (63.1%) were illiterate or had basic education; also less than two thirds were married (64.1%). The non-employed patients (house wives, retired and non-employed) represented 52.9%. About half of patients (51%) had insufficient income, while the non-smokers represented 54.9%. More than half of patients (53.4%) had no co-existing diseases. The duration since diagnosis was from 5-10 years in 47.6% of patients. More than half of patients (53.2%) received two or more medications, while less than two-thirds (62.9%) received two or more doses per

day. The medications were covered by health insurance in about two thirds of patients (64.5%) and more than two thirds (68%) had a positive family history. The response rate was 91.6% (174 participants), in which the post-intervention assessment for awareness was conducted, while the post-intervention assessment for adherence, and control was conducted on aware patients only (100 patients). Table 2 illustrates the pre-post awareness, adherence, and control of hypertension among patients who participated in the intervention. According to the table, awareness of hypertension has shown a statistically significant improvement, p<0.001. Thus, before the intervention only more than half (57.5%) were aware. This improved to 100% awareness after the intervention. In addition, the adherence among hypertensive patients who participated in the intervention has shown a statistically significant improvement (*P*= 0.01). The imperfect adherence had been improved from 24% before the intervention to 58% after the intervention. Furthermore, 100% of the participants had uncontrolled BP. This was reduced to 84% after the intervention. This improvement is statistically significant, p <0.001.

Discussion

Awareness rate in the total study sample was 60.2% which is higher than that reported in the Egyptian national survey conducted between 1991-1993 and the national Saudi survey (37.5%, 44.7% respectively)[3,16]. In explaining this difference, this study is a health care setting-based study, where more people are health care seekers, which resulted in more awareness, adherence, and control, while the other studies were community based, where asymptomatic patients are less aware.

Table 1: Patients' characteristics before intervention

Characteristics	Frequency	
	No.	%
Gender		
- Male	100	48.5
- Female	106	51.5
Age		
- Range	40-80	
- Mean ±SD	54.3±8.2)	
Marital status		
- Single	17	8.3
- Married	132	64.1
- Widow	55	26.7
- Divorced	2	1
*Educational level**		
- Level 0-2	130	63.1
- Level 3-5	56	27.2
- Level 6-8	20	9.7
Occupation		
- Employed	97	44.9
- Unemployed	109	55.1
Perceived income		
- Sufficient	101	49
- Insufficient	105	51
Smoking		
- Smoker	93	45.1
- Non- smoker	113	54.9
Co-morbidities		
- Yes	96	46.6
- No	110	53.4
Family history		
- Positive	140	68
- Negative	66	32
Duration (years)		
- <5	36	29
- 5-10	59	47.6
- 10+	29	23.4
No. of medications		
- 1	58	46.8
- 2+	66	53.2
No. of daily doses		
- 1	46	37.1
- 2+	78	62.9
Insurance coverage		
- Insured	80	64.5
- Not insured	44	35.5

*****Level 0-2: no education, primary or preparatory education; level 3-5: secondary, post secondary education or technical programs; level 6-8: bachelor, master, or doctoral degree [15].

Table 2: Pre-post awareness, adherence, and control among hypertension patients in the sample who participated in the intervention

	Awareness		Adherence		Control	
	Aware	Not aware	Perfect	Imperfect	Controlled	Uncontrolled
Pre	100	74	24	76	ND	100
Post	174	ND	42	58	16	84
χ^2	94		7.3		17.4	
P value	<0.001*		0.01*		<0.001*	

ND= Not Detected; * statistically significant at P <0.05.

On the other hand this finding is lower than awareness rates in the US 2009-2010 (81.9%) and Zaria, Nigeria (71.1%)[17,18]. In the current study 37.1% of the aware patients in the total study sample were adherent, while only 12.9% were controlled. These results were higher than those reported in the Egyptian national survey (23.9% and 8% for adherence and control correspondingly)[3]. This is explained by the higher awareness rates in our study in comparison with other studies

The results of this study are not satisfactory in comparison with the US recording 76.4% and 53.3% for adherence and control respectively between 2009-2010[17]. In addition adherence and control rates were better in Saudi Arabia 72% and 37% respectively[19]. However, our results were comparable with Seychelles which is a developing country (34% adherence, and 10% controlled)[20]. The difference between developed and developing countries in many aspects, e.g. socio-economic status, could explain this. In the present study, the pre-post awareness, adherence, BP control among patients in the total sample was analyzed. All non-aware patients became aware about hypertension, and this improvement was statistically significant (p<0.001). This is in line with previous findings in the literature, which show that patient education programs can be utilized to increase patients' awareness about hypertension[21-23]. The pre-post adherence has shown a statistically significant improvement after the intervention (p= 0.01). This could be due to the improvement in the level of awareness. However, WHO reported that information alone is not enough for creating or maintaining good adherence habits[23]. In addition, two other studies showed no improvement in adherence levels after an educational intervention[23,24]. The BP control has shown also a statistically significant improvement after the intervention (p< 0.001).

This coincides with many studies showing the effect of health education programs with different approaches to patients, families, health professionals and community in Australia, Iran, Spain, USA and Brazil which revealed better blood pressure control rates[24-29]. This conflicting results may be explained by using different approaches of interventions to improve awareness, adherence and control (e.g. education in self-management; pharmacy management programs; nurse, pharmacist and other non-medical health professional intervention protocols; counseling; behavioral interventions; follow-up and reminders, among others). Also, in a landmark study conducted by Morisky et al[30], pa-

tients were assigned to three adherence-promoting interventions: physician counseling, family support for monitoring pill taking, group sessions with a social worker or to a control group. The 5-year analysis showed a continuing positive effect on appointment keeping, weight control, and blood-pressure control in the intervention groups. Study patients assigned to any of the experimental groups displayed a statistically significant 30 % increase in BP control at the two-year follow-up, and a statistically significant 65% increase in BP control over the five-year period. Analysis of the main effects of the educational program demonstrated that the family member support intervention accounted for the greatest decrease in diastolic blood pressure variability[30].

Conclusions

Interventions focused on family oriented care might be a successful approach to improving the management of hypertension. The care of patients with chronic diseases should be shifted from addressing only the individual patient to addressing the broader social context in which the patient lives and in which the disease is managed. The study recommends raising the awareness of diseases by health education programs, Family support should be encouraged to improve the outcome of diseases. Health care providers should mange chronic diseases in a familial context. Further studies can be carried out over a longer period to investigate whether or not this will have long-term effect on participants' levels of adherence and health outcomes.

Limitations of the Study

Some participants were accompanied by a family member however, we confirm that the patient should accompany the same family member every session, and that the contents of the missed session to be summarized to the main family member. Furthermore, the participants were highly selected patients attending a health care setting. Therefore, the results of this study cannot be extrapolated to other patients.

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Table 3: Relation between characteristics of patients in the total study sample and adherence to treatment after intervention (n=100)

Characteristics	Adherence		χ^2	P value
	Perfect No. (%)	Imperfect No. (%)		
Gender			7.8	0.005*
Male	18 (42.9)	41 (70.7)		
Female	24 (57.1)	17 (29.3)		
Age (Mean ±SD)	57.2(±8.9)	56.5(±8.5)	0.4@	0.7
Educational level			1.04	0.6
Level 0-2	24 (57.1)	29 (50)		
Level 3-5	14 (33.3)	25 (43.1)		
Level 6-8	4 (9.5)	4 (6.9)		
Marital status			6.5	0.09
Single	0	7 (12.1)		
Married	26 (61.9)	33 (56.9)		
Widow& divorced	16 (38.1)	18 (31)		
Occupation			2.2	0.1
Employed	14 (33.3)	28 (48.3)		
Unemployed	28 (66.7)	30 (51.7)		
Perceived income			7.1	0.008*
Sufficient	14 (33.3)	35 (60.3)		
Insufficient	28 (66.7)	23 (39.7)		
Smoking			15.1	<0.001*
Smoker	14 (33.3)	42 (72.4)		
None	28 (66.7)	16 (27.6)		
Co-morbidities			4.8	0.03*
Yes	26 (61.9)	23 (39.7)		
No	16 (38.1)	35 (60.3)		
Family history			8.7	0.003*
Positive	27 (64.3)	20 (34.5)		
Negative	15 (35.7)	38 (65.5)		
Duration (years)			0.96	0.6
<5	9 (21.4)	13 (22.4)		
5-	20 (47.6)	32 (55.2)		
10+	13 (31)	13 (22.4)		
No. of medications			1.1	0.3
1	24 (57.1)	27 (46.6)		
2+	18 (42.9)	31 (53.4)		
No. of daily doses			11.1	0.001*
1	23 (54.8)	13(22.4)		
2+	19(45.2)	45 (77.6)		
Insurance coverage			0.2	0.6
Insured	27(64.3)	40 (69)		
Not insured	15 (35.7)	18 (31)		
Perceived role of family member			2.6	0.1
Supportive	22 (52.4)	21 (36.2)		
Non-supportive	20 (47.6)	37 (63.8)		

*=Statistically significant at P <0.05; @=t-test.

Table 4: Characteristics of patients and hypertension control after intervention (N=100).

Characteristics	Control			
	Yes	No	χ^2	P value
Gender			6.1	0.01*
Male	5 (31.2)	54 (64.3)		
Female	11 (68.8)	30 (35.7)		
Age (Mean ±SD)	54.3(±6.8)	57.1 (±8.8)	-1.2[@]	0.2
Educational level			6.4	0.04*
Level 0-2	13 (81.2)	40 (47.6)		
Level 3-5	3 (18.8)	36 (42.9)		
Level 6-8	0 (0)	8 (9.5)		
Marital status			1.7	0.6
Single	0 (0)	7 (8.3)		
Married	10 (62.5)	49 (58.3)		
Widow& divorced	6 (37.5)	28 (33.3)		
Occupation			4.2	0.04*
Employed	3 (18.8)	39 (46.4)		
Unemployed	13 (81.2)	45 (53.6)		
Perceived income			2.4	0.1
Sufficient	5 (31.2)	44 (52.4)		
Insufficient	11 (68.8)	40 (47.6)		
Smoking			1.2	0.3
Smoker	7 (43.8)	49 (58.3)		
None	9 (56.2)	35 (41.7)		
Co-morbidities			4.4	0.04*
Yes	4(25)	45(53.6)		
No	12 (75)	39 (46.4)		
Family history			6	0.014*
Positive	12 (75)	35 (41.7)		
Negative	4 (25)	49 (58.3)		
Duration (years)			9.1	0.001*
<5	2 (12.5)	20 (23.8)		
5-	5 (31.2)	47 (56)		
10+	9 (56.2)	17 (20.2)		
No. of medications			0.008	0.9
1	8 (50)	43 (51.2)		
2+	8 (50)	41 (48.8)		
No. of daily doses			0.02	0.9
1	6 (37.5)	30 (35.7)		
2+	10(62.5)	54 (64.3)		
Insurance coverage			0.5	0.5
Insured	12 (75)	55 (65.5)		
Not insured	4 (25)	29 (34.5)		
Perceived role of family member			9	0.003*
Supportive	16 (100)	52 (61.9)		
Non-supportive	0	32 (38.1)		

Data are presented as No. (%); *=statistically significant at $p<0.05$; [@] t-test.

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Artikel Jurnal 3

Jurnal Ilmu Keperawatan
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Pendidikan Kesehatan Dalam Peningkatan Pengetahuan, Sikap Dan Keterampilan Keluarga Dengan Hipertensi - *Pilot Study*

Health Education in the Improvement of Knowledge , Attitude and Practice in the Family with Hypertension – a Pilot Study

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Abstrak

Hipertensi merupakan salah satu masalah utama kesehatan masyarakat saat ini, prevalensi di Indonesia mencapai 31,7% tahun 2007 dan 25,8% pada tahun 2013, namun angka ini masih dalam kategori tinggi. Bila tidak ditangani dengan baik sedini mungkin bisa menjadi *the silent killer*. Beberapa penelitian menunjukkan bahwa pendekatan nonfarmakologis termasuk penurunan berat badan, pembatasan alkohol, natrium dan tembakau, latihan dan relaksasi merupakan intervensi wajib pada penanganan hipertensi. Disamping tenaga medis, keluarga juga berperan penting, namun pengaruh intervensi pendidikan kesehatan terhadap peningkatan pengetahuan, sikap dan keterampilan keluarga dengan hipertensi masih kurang *evidence* terutama di Aceh. Tujuan penelitian mengetahui pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan, sikap dan keterampilan keluarga dengan hipertensi di Kemukiman Bluek Grong-Grong Kecamatan Indrajaya Kabupaten Pidie. Intervensi Pendidikan kesehatan tentang hipertensi dengan metode ceramah, diskusi dan demonstrasi menggunakan media *power point* dan *booklets*. Jenis penelitian kuantitatif dengan desain *pre experimental* berupa *the one group pretest-posttest design* terhadap 37 responden yang diperoleh secara *simple random sampling*. Instrumen penelitian adalah kuesioner. Teknik analisa data menggunakan uji statistik parametrik *Paired T-test*. Hasil penelitian menunjukkan terdapat pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan (p = 0,0001), sikap (p = 0,0001) dan keterampilan (p = 0,0001). Diharapkan pendidikan kesehatan tentang hipertensi dapat dijadikan salah satu tindakan keperawatan pada keluarga dengan hipertensi di komunitas.

Kata Kunci : Hipertensi, Keluarga, Pendidikan kesehatan, Sikap

Abstract

Hypertension is one of the major public health problem today, prevalence in Indonesia reached 31.7 % in 2007 and to 25.8 % in 2013, but this figure is still in the high category. If not handled properly as early as possible it can be "the silent killer". Some research suggests that non-pharmacological approaches include weight loss , alcohol restrictions , sodium and tobacco , exercise and relaxation are compulsory intervention on hypertension management. Other than medical personnel, the family also plays an important role. However , the effect of health education interventions to increase knowledge, attitudes and practice of families with hypertension still less evidence , especially in Aceh. This study aims to determine the effect of health education to increase knowledge , attitude and practice of families with hypertension in Bluek Grong-Grong Sub-Subdistrict Indrajaya Subdistrict Pidie District. Health education intervention on hypertension with lectures, discussions and demonstrations using media power point and booklets. This research is a quantitative research design pre experiment with the one group pretest-posttest design of the 37 respondents were obtained through simple random sampling. The research instrument was a questionnaire. Data analysis techniques using parametric statistical tests Paired t-test . The results showed there are significant health education to increase knowledge (p = 0,0001), attitude (p = 0,0001), and practice (p = 0,0001). Expected health education about hypertension can be one nursing actions on families with hypertension in the community.

Keywords: hypertension, family, health education, attitude

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Latar Belakang

Hipertensi dapat didefinisikan sebagai tekanan darah persisten dengan tekanan sistoliknya ≥ 140 mmHg dan tekanan diastolik ≥ 90 mmHg. Hipertensi sering disebut *the silent killer* atau "pembunuh diam-diam", karena orang dengan hipertensi sering tidak menampakkan gejala. Institut Nasional Jantung, Paru dan Darah U.S.A. memperkirakan sepuluh orang yang menderita hipertensi tidak sadar akan kondisinya. Begitu penyakit ini diderita, tekanan darah pasien harus dipantau dengan interval teratur mengingat hipertensi merupakan kondisi seumur hidup (Smeltzer & Barre, 2002).

Apabila hipertensi tidak terkontrol, akan menyerang target organ, dan dapat menyebabkan serangan jantung, stroke, gangguan ginjal, serta kebutaan. Dari beberapa penelitian dilaporkan bahwa penyakit hipertensi yang tidak terkontrol dapat menyebabkan peluang 7 kali lebih besar terkena stroke, 6 kali lebih besar terkena *congestive heart failure*, dan 3 kali lebih besar terkena serangan jantung (Rahajeng & Tuminah, 2009; Lu, *et al*. 2015).

Data dari *World Heath Organization* (WHO) dan *the International Society of Hypertension (ISH)*, saat ini terdapat 600 juta penderita hipertensi di seluruh dunia, dan 3 juta diantaranya meninggal setiap tahunnya, 7 dari 10 penderita tersebut tidak mendapatkan pengobatan secara adekuat (Rahajeng & Tuminah, 2009). Jumlah penderita hipertensi di Indonesia pada tahun 1995 baru sekitar 5 persen dari populasi. Survei tahun 2008 yang dilakukan WHO menjadi 32 persen (Widiani, 2013).

Tahun 2007, prevalensi hipertensi di Indonesia mencapai 31,7%. Prevalensi menjadi 25,8% pada tahun 2013, namun angka ini masih dalam kategori tinggi bahkan sebagian besar (63,2%) kasus hipertensi di masyarakat tidak terdiagnosis (Kemenkes, 2013). Di Provinsi Aceh diketahui prevalensi hipertensi mencapai 30.2%, paling tinggi di Indonesia (Kemenkes, 2007).

Di Kabupaten Pidie, kasus hipertensi yang dirawat di puskesmas tahun 2012 berjumlah 1.590 kasus dan 919 kasus baru. Tahun 2013 jumlah kasus baru sudah mencapai 15.245 kasus (Dinkes Pidie, 2014).

Peningkatan kasus hipertensi terjadi di hampir semua Puskesmas. Di Puskesmas Indrajaya misalnya pada tahun 2013 telah merawat rata-rata 65 kasus hipertensi perbulan dan periode Januari sampai dengan Juni 2014 sebanyak 466 kasus atau 143 kasus perbulan (Puskesmas Indrajaya, 2014). Ini merupakan peningkatan jumlah kasus yang sangat signifikan. Sedangkan jumlah penderita hipertensi di Kemukiman Bluek Grong-Grong Kecamatan Indrajaya Kabupaten Pidie sebanyak 114 orang yang

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tersebar di 16 desa.

Menurut Friedman (2010) salah satu fungsi keluarga adalah fungsi perawatan atau pemeliharaan kesehatan yaitu keluarga berfungsi untuk mempertahankan keadaan kesehatan anggota keluarga, namun kenyataannya banyak keluarga yang tidak memiliki kemampuan merawat anggota keluarga dengan hipertensi sehingga diperlukan intervensi pendidikan kesehatan bagi keluarga. Masyarakat tidak sepenuhnya memahami hipertensi dan manfaat *early diagnosis* dan *early prevention*, terutama masyarakat berpendidikan rendah dan kelompok tidak bekerja.

Pendidikan kesehatan sebagai intervensi keperawatan mandiri dapat direncanakan untuk meningkatkan kemampuan keluarga dalam merawat anggota keluarga yang mengalami hipertensi. Keluarga merupakan sumber daya penting pemberian layanan kesehatan, baik bagi individu maupun keluarga. Saat perawatan difokuskan pada keluarga, efektifitas perawatan terbukti meningkat. Pengkajian dan pemberian layanan kesehatan keluarga adalah hal yang penting dalam membantu tiap anggota keluarga mencapai tingkat kesejahteraan yang optimum (Gilliss & Davis, 1993 dalam Friedman, 2010).

Pendidikan kesehatan merupakan prioritas utama dan merupakan salah satu intervensi keperawatan yang efektif untuk meningkatkan tingkat kesadaran masyarakat akan pentingnya pemahaman yang benar mengenai hipertensi. Namun demikian, efektifitas pendidikan kesehatan belum sepenuhnya diketahui pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan, sikap dan keterampilan keluarga terutama dalam merawat anggota keluarga dengan hipertensi. Penelitian ini bertujuan untuk mengetahui apakah ada pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan, sikap dan keterampilan keluarga dengan hipertensi

Metode

Desain penelitian adalah *pre experimental* dengan rancangan the *one group pretest-posttest*. Penelitian dilakukan di Kemukiman Bluek Grong-Grong wilayah kerja Puskesmas Indrajaya kabupaten Pidie pada tanggal 16 Maret sampai dengan 25 April 2015. Populasi dalam penelitian ini adalah semua keluarga yang anggota keluarganya menderita hipertensi yang tinggal di Kemukiman Bluek Grong-grong Kecamatan Indrajaya Kabupaten Pidie sebanyak 114 keluarga. Teknik sampel dengan *simple random sampling* berjumlah 37 orang. Instrumen penelitian menggunakan kuesioner yang dirancang oleh peneliti yang telah diuji validitas dan reliabilitas.

Metode pengumpulan data dilakukan dalam beberapa tahapan. *Pretest* satu kali pada setiap responden. Satu minggu setelah *pretest* dilanjutkan dengan kegiatan intervensi berupa

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pendidikan kesehatan 4 (empat) kali pertemuan dengan interval waktu 1 (satu) minggu. Intervensi pertama sampai dengan ketiga dilakukan secara kelompok di Aula Puskesmas Indrajaya dengan metode ceramah menggunakan media *power point* dan *booklets* selama 60 menit dengan materi pendidikan kesehatan tentang perawatan hipertensi meliputi pengertian tekanan darah tinggi, penyebab, gejala, komplikasi, ketaatan pada pengobatan, manajemen berat badan, nutrisi dan aktivitas fisik. Nutrisi atau diet pada hipertensi terdiri dari rendah lemak, rendah garam, tinggi buah-buahan, sayuran dan ikan. Aktivitas fisik berupa aktivitas fisik sedang minimal 30 menit/hari. Pertemuan keempat dilakukan di rumah responden secara individu dengan metode demontrasi dan redemonstrasi selama 30 – 40 menit dengan materi cara mengukur tekanan darah di rumah. Tahapan terakhir dilakukan *posttest* 1 kali pada setiap responden.

Analisis data meliputi analisis *univariat* dan analisis *bivariat* menggunakan uji statistik *Paired t-test* pada *confidence interval* 90% (α=10%) setelah melakukan uji normalitas data menggunakan uji *Kolmogorov-Smirnov Z* dengan hasil untuk seluruh variabel pada *pretest* dan *posttest* paling rendah adalah 0,1 dan paling tinggi adalah 0,756 atau lebih besar dari 0,05 sehingga dapat disimpulkan data terdistibusi normal.

Hasil

Data karakteristik responden dapat terlihat pada Tabel 1.

Tabel 1. Responden Menurut Umur, Jenis Kelamin dan Pendidikan (n = 37)

No	Karakteristik	f	%
1	Umur		
	Remaja Akhir (17 – 25 Tahun)	11	29,7
	Dewasa Awal (26 – 35 Tahun)	14	37,8
	Dewasa Akhir (36 – 45 Tahun)	9	24,3
	Lansia Awal (46 – 55 Tahun)	3	8,1
2	Jenis Kelamin		
	Laki-laki	4	10,8
	Perempuan	33	89,2
3	Pendidikan		
	Dasar (SD & SMP)	10	27,0
	Menengah (SMA)	14	37,8
	Tinggi (D III & S1)	13	35,1

Berdasarkan tabel 1 di atas sebagian besar responden dengan kelompok umur dewasa dengan dewasa awal dan dewasa akhir 62,1%, jenis kelamin perempuan 89,2% dan tingkat pendidikan menengah dan tinggi 72,9%.

Skor *pretest* dan *posttest* didapatkan nilai rata-rata (*mean*) pengetahuan 46,62 (SD. 13,746) dan 69,86 (13,307), sikap 80,16 (9,677) dan 88,05 (9,375), keterampilan 20,72 (21,30) dan 86,49 (17,50).

Perbedaan nilai rata-rata pengetahuan, sikap dan keterampilan responden *pretest* dan *posttest* disajikan pada Tabel 2.

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Tabel 2. Perbedaan Nilai Rata-Rata Pengetahuan, Sikap dan Keterampilan Responden *Pretest* dan *Posttest*

Variabel	*Mean*	*SD*	Min - Max	*Mean Difference*	P Value
Pengetahuan					
Pretest	46,62	13,746	20-75	-23,24	0,0001
Posttest	69,86	13,307	40-95		
Sikap					
Pretest	80,16	9,677	62-94	-7,892	0,0001
Posttest	88,05	9,375	64-98		
Keterampilan					
Pretest	20,72	21,30	0-100	-65,77	0,0001
Posttest	86,49	17,50	33,3-100		

Nilai rata-rata (*mean*) pengetahuan responden *pretest* 46,62 dan *posttest* 69,86 (0,0001) menunjukkan ada pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan keluarga dengan hipertensi. Nilai rata-rata (*mean*) sikap responden *pretest* 80,16 dan *posttest* 88,05 (0,0001) menunjukkan ada pengaruh pendidikan kesehatan terhadap peningkatan sikap keluarga dengan hipertensi. Nilai rata-rata (*mean*) keterampilan responden *pretest* 20,72 dan *posttest* 86,49 (0,0001) menunjukkan ada pengaruh pendidikan kesehatan terhadap peningkatan keterampilan keluarga dengan hipertensi.

Pembahasan

Penelitian ini menemukan ada pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan keluarga dengan hipertensi. Hal ini sejalan dengan penelitian sebelumnya (Purwati, *et al.*, 2014) terdapat pengaruh penyuluhan kesehatan terhadap peningkatan pengetahuan klien hipertensi.

Penelitian Beigi, *et al.*, (2014), menunjukkan bahwa program pendidikan efektif dalam meningkatkan pengetahuan, meningkatkan manajemen diri, dan mengendalikan kebiasaan gaya hidup yang merugikan pasien dengan hipertensi. Hasil penelitian Roca, *et al.,* (2003) bahwa program pendidikan hipertensi dapat berguna dalam meningkatkan pengetahuan tentang hipertensi.

Penelitian Susanti, *et al*., (2012) menunjukkan bahwa ada pengaruh yang signifikan antara pemberian pendidikan tentang hipertensi terhadap peningkatan pengetahuan mengelola hipertensi. Hasil penelitian Bayo (2008) bahwa ada pengaruh pendidikan kesehatan terhadap pengetahuan klien tentang cara pencegahan hipertensi.

Proses belajar dalam pendidikan kesehatan merupakan proses terjadinya perubahan kemampuan pada subjek belajar dengan keluaran yang diharapkan adalah kemampuan sebagai hasil perubahan perilaku dari sasaran didik (Notoatmodjo, 2010). Peningkatan pegetahuan yang terjadi setelah diberikan pendidikan kesehatan merupakan salah satu aspek kemampuan yang dicapai oleh sasaran didik sebagai akibat adanya proses belajar.

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Pendidikan kesehatan merupakan aktifitas pembelajaran yang dirancang oleh perawat sesuai kebutuhan klien. Pencapaian tujuan pendidikan kesehatan akan lebih mudah dengan penggunaan media pembelajaran yang sesuai dan dapat meningkatkan kemudahan penerimaan informasi. Menurut Nies dan McEwen (2001) penggunaan alat bantu berupa tulisan akan lebih menghasilkan peningkatan pengetahuan daripada dengan kata-kata.

Pendidikan kesehatan tentang perawatan hipertensi dilakukan dengan menggunakan media berupa *power point* dan *booklet*. Notoatmodjo (2010) menjelaskan bahwa kurang lebih 75% dari pengetahuan manusia diperoleh melalui mata, sedang sisanya melalui indera yang lain. Dengan menggunakan *power point* dan *booklet*, informasi yang disampaikan melalui mata lebih banyak, sehingga informasi akan lebih mudah diterima oleh keluarga.

Berdasarkan hasil penelitian ini pendiddikan kesehatan efektif untuk meningkatkan pengetahuan keluarga tentang perawatan hipertensi di Kemukiman Bluek Grong-grong Kecamatan Indrajaya Kabupaten Pidie. Hal ini dimungkinkan karena responden juga sudah merawat keluarganya yang menderita hipertensi dan materi pendidikan kesehatan diberikan dengan metode ceramah dan menggunakan media power point dan booklets sehingga responden dapat memahami pesan dengan baik. Hal ini sesuai dengan pendapat Ali (2000) bahwa penyuluhan kesehatan adalah kegiatan pendidikan yang dilakukan dengan cara menyebarkan pesan, menanamkan keyakinan, sehingga orang tidak saja sadar, tahu dan mengerti, tetapi juga mau dan bisa melakukan suatu anjuran yang ada hubunganya dengan kesehatan.

Menurut Notoatmodjo (2010) bahwa pengetahuan adalah merupakan hasil tahu dan ini terjadi setelah orang melakukan penginderaan terhadap suatu objek tertentu. Penginderaan terjadi melalui pancaindera seseorang. Pengetahuan merupakan domain yang sangat penting untuk terbentuknya tindakan seseorang.

Berdasarkan uraian tentang hasil penelitian dan teori-teori terkait tersebut di atas, maka dapat diasumsikan bahwa pendidikan kesehatan tentang perawatan hipertensi pada keluarga dengan hipertensi memiliki pengaruh yang positif terhadap peningkatan pengetahuan keluarga dalam merawat anggota keluarga yang menderita hipertensi di rumah.

Namun demikian diketahui bahwa sebelum diberikan pendidikan kesehatan tentang hipertensi, responden telah memiliki pengetahuan tentang hipertensi yang dapat dilihat dari *mean* skor *pretest* pengetahuan yaitu 46,62 artinya bahwa responden sudah pernah memperoleh informasi tentang hipertensi dari petugas kesehatan, televisi, surat kabar ataupun buku bacaan.

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Selanjutnya, penelitian ini menemukan ada pengaruh pendidikan kesehatan terhadap peningkatan sikap keluarga dengan hipertensi. Hal ini sejalan dengan penelitian sebelumnya (Susanti, *et al*., 2012) bahwa ada pengaruh yang signifikan antara pemberian pendidikan kesehatan dan sikap baik sebelum dan sesudah diberikan pendidikan kesehatan tentang hipertensi terhadap sikap dalam mengelola hipertensi.

Penelitian Ludianita, 2013 menunjukkan terdapat interaksi pengaruh pendidikan kesehatan dan sikap terhadap perilaku penderita hipertensi. Penelitian Widyasari, *et al*., (2010) menunjukkan peningkatan yang signifikan secara statistik dalam pengetahuan dan sikap sebelum dan sesudah pendidikan. Hasil penelitian Songjanan, *et al*., (2013) bahwa ada perbedaan sikap yang bermakna antara sebelum dan setelah diberikan pendidikan kesehatan.

Menurut Notoatmodjo (2010) sikap adalah respon tertutup seseorang terhadap stimulus atau objek tertentu yang sudah melibatkan faktor pendapat dan emosi yang bersangkutan (senang-tidak senang, setuju-tidak setuju, baik-tidak baik dan sebagainya). Dalam menentukan sikap yang utuh, pengetahuan, pikiran, keyakinan dan emosi memegang peranan penting. Menurut Notoatmodjo (2010) sikap mempunyai tiga komponen pokok yaitu kepercayaan atau keyakinan, ide dan konsep terhadap suatu objek; kehidupan emosional atau evaluasi terhadap suatu objek; dan kecenderungan untuk bertindak.

Berdasarkan uraian tentang hasil penelitian di atas, maka dapat diasumsikan bahwa sikap keluarga dalam merawat anggota keluarga yang menderita hipertensi sangat dipengaruhi oleh pemahaman keluarga tersebut tentang tatacara perawatan hipertensi di rumah yang dapat diperoleh melalui pendidikan kesehatan. Pendidikan kesehatan tentang perawatan hipertensi pada anggota keluarga dapat memberikan informasi yang dibutuhkan keluarga yang dapat meningkatkan pengetahuan keluarga sehingga keluarga dapat menentukan sikap yang lebih baik dalam perawatan hipertensi anggota keluarga.

Namun demikian diketahui bahwa sebelum diberikan pendidikan kesehatan tentang hipertensi, responden telah memiliki sikap yang baik tentang hipertensi yang dapat dilihat dari *mean* skor *pretest* sikap yaitu 80,16 artinya bahwa responden sudah pernah memperoleh informasi tentang hipertensi dari petugas kesehatan, televisi, surat kabar ataupun buku bacaan.

Selanjutnya, penelitian ini menemukan ada pengaruh pendidikan kesehatan terhadap peningkatan keterampilan keluarga dengan hipertensi. Penelitian yang dilakukan oleh Ludianita (2013) menunjukkan terdapat pengaruh pendidikan kesehatan terhadap perilaku penderita hipertensi. Hasil penelitian

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Baghianimoghadam, *et al*., (2009) bahwa program pendidikan kesehatan dapat membantu dan diperlukan untuk meningkatkan perilaku monitoring tekanan darah sendiri pada pasien dengan hipertensi. Hasil penelitian Foroushani, *et al*., (2014), bahwa terdapat pengaruh yang signifikan antara promosi kesehatan terhadap perubahan gaya hidup Lansia dengan penyakit kronis.

Penelitian Oliveria, *et al.,* (2005) menunjukkan bahwa, meskipun pengetahuan umum dan kesadaran hipertensi memadai, pasien tidak memiliki pemahaman yang komprehensif tentang kondisi ini. sehingga diperlukan program pendidikan pasien dan intervensi pada risiko kardiovaskular yang terkait dengan hipertensi tidak terkendali, terutama peningkatan kadar tekanan darah sistolik.

Penelitian Xue & Lewin (2008) menunjukkan ada pengaruh pendidikan kesehatan terhadap manajemen diri pasien dimana terjadi perubahan yang singnifikan pada gaya hidup pasien setelah menjalani 4 kali pendidikan selama 5 minggu. Hasil penelitian Wang & Abbott (2001) menunjukkan bahwa program-program pendidikan, dukungan keluarga dan layanan kesehatan telah dapat menurunkan tekanan darah pada 80% dari peserta dengan hipertensi dan dapat menurunkan kadar glukosa darah sampai dengan rata-rata 57,86 gr/dl pada 80% dari peserta dengan diabetes mellitus dalam waktu satu tahun

Penelitian Jafar, *et al.*, (2010) menunjukkan hasil bahwa keluarga berdasarkan pendidikan kesehatan di rumah secara signifikan memperbaiki peningkatan tenanan darah. Hasil penelitian Park, *et al.,* (2010) menunjukkan setelah intervensi tekanan darah pada kelompok eksperimen menurun secara signifikan dibandingkan kelompok kontrol.

Hasil penelitian Saldana, *et al*., (2013) bahwa intervensi pendidikan terstruktur berdasarkan kebutuhan individu diidentifikasi, ditambah dengan pemberdayaan individu dan pemantauan dilakukan oleh para profesional keperawatan, memungkinkan untuk mencapai perilaku permanen sehubungan dengan perawatan diri, memfasilitasi pengetahuan diri dan perubahan pola perilaku, selain penguasaan keterampilan dan pengetahuan. Menurut Notoatmodjo (2010) hasil pendidikan orang dewasa adalah perubahan kemampuan, penampilan atau perilakunya, perubahan perilaku didasari adanya perubahan atau penambahan pengetahuan, sikap, atau keterampilannya.

Berdasarkan uraian tentang hasil penelitian dan teori-teori terkait tersebut di atas, maka dapat diasumsikan bahwa pendidikan kesehatan tentang perawatan hipertensi pada keluarga memiliki pengaruh yang positif terhadap peningkatan keterampilan keluarga dalam merawat anggota keluarga yang menderita hipertensi di rumah khususnya keterampilan tentang cara mengukur tekanan

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darah. Pendidikan kesehatan tentang cara mengukur tekanan darah yang dilakukan dengan metode demonstrasi dan redemonstrasi yang dapat diamati dengan mata dapat meningkatkan kemampuan atau keterampilan keluarga dalam mengukur tekanan darah anggota keluarga sehingga keluarga dapat memantau tekanan darah anggota keluarga yang mengalami hipertensi setiap hari.

Disamping itu juga dengan memiliki keterampilan mengukur tekanan darah, seseorang juga sudah memahami tentang tekanan darah sistolik dan diastolik sehingga akan termotivasi untuk memeriksa tekanan darah anggota keluarga yang mengalami hipertensi secara rutin dan menggunakan fasilitas pelayanan kesehatan.

Kesimpulan

Berdasarkan hasil penelitian dapat disimpulkan bahwa terdapat pengaruh pendidikan kesehatan terhadap peningkatan pengetahuan, sikap dan keterampilan keluarga dengan hipertensi.

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Lampiran 2 : Surat permohonan data awal

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Akreditasi Institusi oleh BAN-PT = B
(SK Nomor 169/SK/AkreditPT-IV/2015)

Nomor : 676/IV.6.PN/2020 Ponorogo , 24 Agustus 2020
Hal : Permohonan Data Awal

Kepada
Yth. Dinas Kesehatan
Kabupaten Ponorogo
Di
PONOROGO

Assalamu'alaikum w. w.

Disampaikan dengan hormat bahwa sebagai rangkaian pelaksanaan Ujian Akhir Program (UAP) Mahasiswa Program Studi D-3 Keperawatan Fakultas Ilmu Keschatan Universitas Muhammadiyah Ponorogo Tahun Akademik 2020 / 2021, maka mahasiswa / mahasiswi diwajibkan untuk menyusun Karya Tulis Ilmiah

Untuk kegiatan dimaksut mengharap bantuan dan kerjasama Bapak / Ibu dapatnya memberikan kemudahan dalam melaksanakan izin data awal, dengan pokok permasalahan **Pengambilan data awal untuk mengetahui jumlah insiden kasus hipertensi di Ponorogo.** Adapun nama mahasiswa / mahasiswi sebagai berikut :

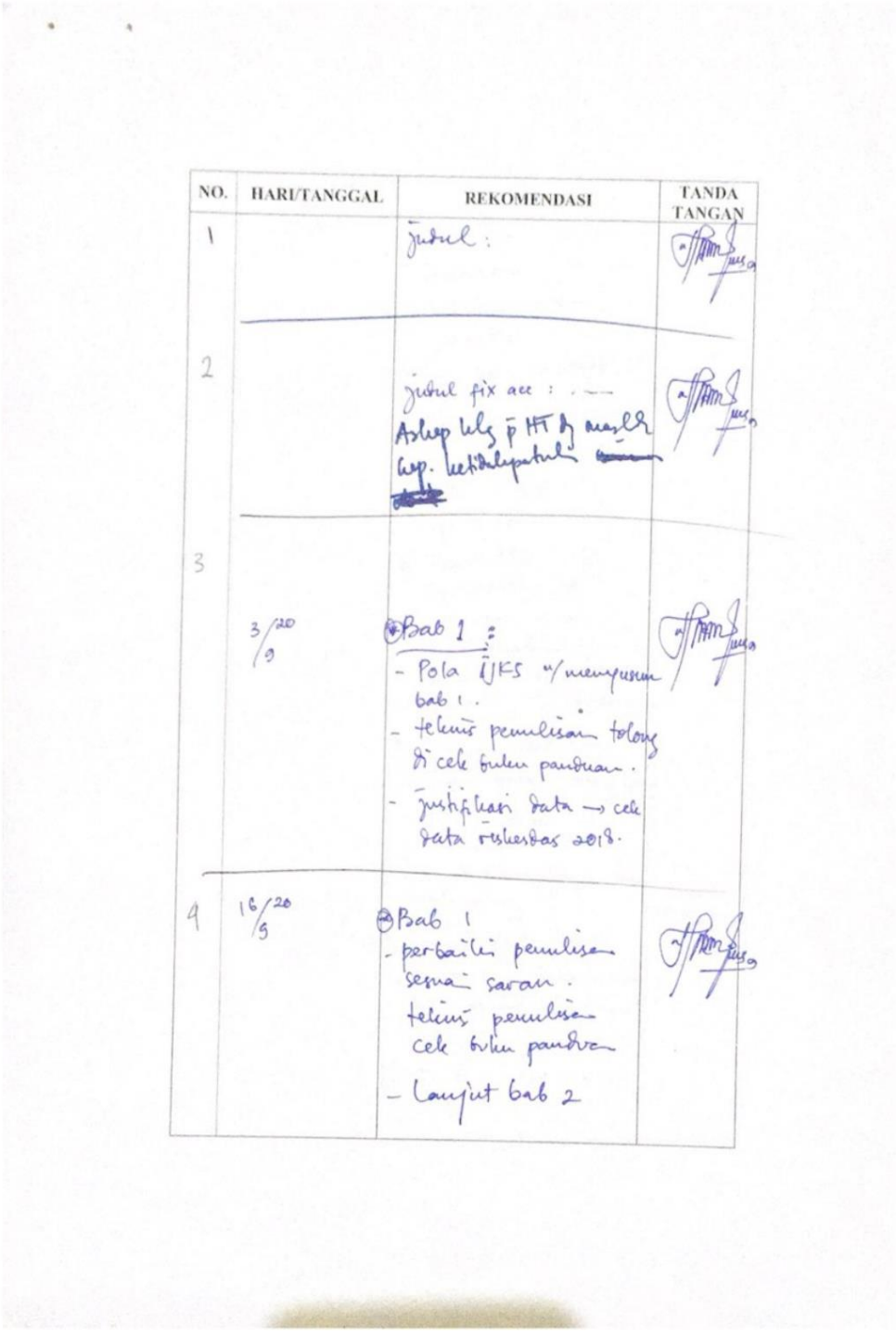
Nama : Imam Yudi Santoso
NIM : 18613230
Jurusan : D3 Keperawatan

Demikian, atas bantuan dan kerjasamanya di sampaikan terima kasih.

Wassalamu 'alaikum w. w.

Dhian Ike Andarmoyo, S.Kep , Ns , M.Kes
NIK.19791215 200302 12

Lampiran 3 : Log Book Pembimbing 1.



NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
1		judul :	
2		judul fix acc : .— Asuhan kbg p HT dg masalah kep. ketidakpatuhan	
3	3/20 9	Bab 1 : - Pola IJFS u/menyusun bab 1. - teknis penulisan tolong di cek buku panduan. - justifikasi data → cek data riskesdas 2018.	
4	16/20 9	Bab 1 - perbaiki penulisan sesuai saran. teknis penulisan cek buku panduan - Lanjut bab 2	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
5	21/20·/9	① Perhatikan penulisan penomoran bab, sub bab dan teknis penulisan. ② Cek per. LEBIHAN !! Gunakan referensi SDKI, SLKI, SIKI dlm asuhan di perencanaan ! ③ Tambahkan segi ke-Islaman -> u/ intervensi yg akan dilaksanakan guna ikhtiar dg perspektif ke-Islaman ④ Jangan asal copy paste punya orang lain ! ini PLAGIAT !! ⑤ Cari sumber aslinya dan ketik ulang ! ⑥ Kamu berikutnya tdk ada lagi kekeliruan dlm teknis penulisan !! Cek sendiri dg teliti ! ⑦ PAHAMI PANDUAN.	

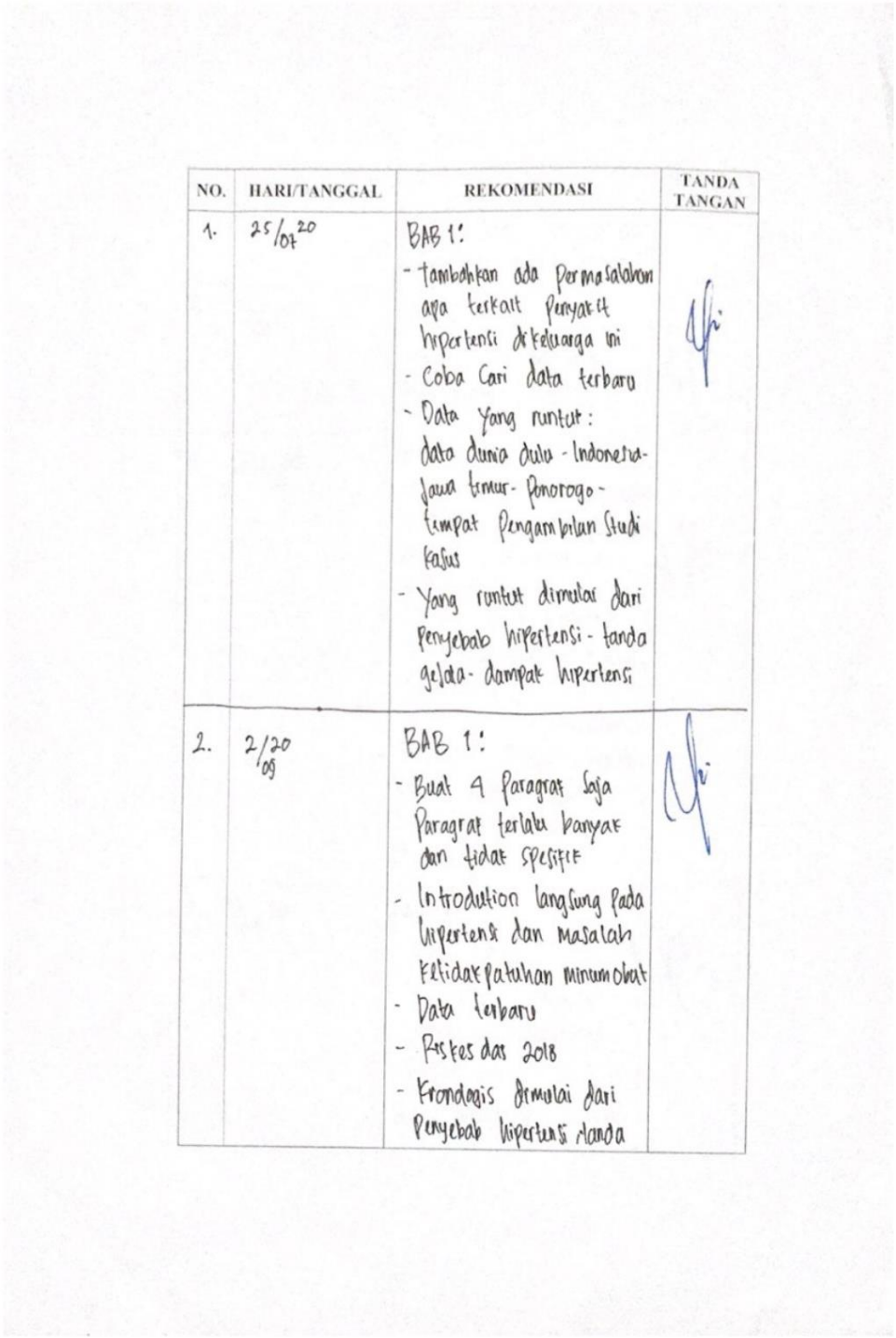
NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
6	28/9 20	Tambahkan segi keislaman pd bab 2 boleh ditambah Qur'an / hadist - Lanjut bab 3	
7	6/10 20	- Tolong diperhatikan penulisannya !! - Teknis penulisan tolong diperbaiki. - Lanjut lengkapi draf dengan ~~draf~~ daftar pustaka dan lampiran.	
8	25/11 20	Cek penulisan !! · Bab 3 Perbaiki penulisan. Komal berikutnya konsul kesekretariat.	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
9	27/11 2020	Siap uji proposal	
10	14/6 2021	- Analisis artikel - jurnal pilihan blm ada - Artikel yg diserahkan peneliti blm mengarah pd unggulan intervensi - Perbaiki penulisan masih banyak yg typo	
11	18/6 2021	- jurnal no. 1 & 2 oke - jika unggulannya edukasi bagi keluarga maka perlu di sebutkan juga di referensi dan artikel penelitian yg sesuai. Tambahkan 1 lagi artikel. - Bab. 4 sertakan.	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
12	23/2021 /6	⊕ Ketiga jurnal sdh memenuhi kriteria. ⊕ Cek kembali penulisan dan tata bahasa yg digunakan, masih banyak kalimat yg belum baku. ⊕ Masukkan segi kebaruan baik di bab 2 pd implementasi maupun di pembahasan ⊕ Lanjutkan yg kemarin keseluruhan.	
13	25/2021 /06	- Cek penulisan !! masih saja banyak yg typo. - Abstrakt ⇒ cek ulang komponen IMRAD. - Cek daftar pustaka.	
14	28/2021 /6	- Perbaiki semua saran - Cek ulang penulisan.	

no	hari /tanggal	rekomendasi	tanda tangan
15	29/8 2024	siap diujikan	

Pembimbing 2



NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
1.	25/07/20	BAB 1: - tambahkan ada permasalahan apa terkait penyakit hipertensi di keluarga ini - Coba Cari data terbaru - Data yang runtut : data dunia dulu - Indonesia - jawa timur - ponorogo - tempat pengambilan studi kasus - yang runtut dimulai dari penyebab hipertensi - tanda gejala - dampak hipertensi	
2.	2/09/20	BAB 1: - Buat 4 paragraf saja Paragraf terlalu banyak dan tidak spesifik - Introdution langsung pada hipertensi dan masalah ketidakpatuhan minum obat - Data terbaru - Riskes das 2018 - Frondogis dimulai dari penyebab hipertensi tanda	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
		gejala dan dampak jika hipertensi tidak teratasi	
3.	25/09/20	BAB 2: - bab 2 tambahan hub. antar konsep	
4.	27/09/20	BAB 2: - implementasi keperawatan masukkan konsep implementasi dalam keperawatan keluarga - konsep dasar penyakit langsung tuliskan konsep hipertensi - masalah keperawatan sesuaikan dengan konsep bab 2 apa diagnosa keperawatan yang diangkat.	
5.	27/09/20	BAB 3: - Alur kerja 1. keluarga dengan anggota menderita hipertensi 2. dilengkapi sesuai	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
		dengan Proses keperawatan (Pengambilan data) 3. Asuhan keperawatan keluarga dg ...... (lihat buku panduan)	
6	30/11 Okt	Prinsip Acc - siapkan Ujian	[signature]
7	08/06 2021	Konsul Jurnal	
8	11/06 2021	- Konsul Jurnal - Leaflet dihapus	
9.	17/06 2021	Pembahasan → Jelaskan intervensi yg diberikan kpd klg dr masing²	[signature]

jurnal
(+) teorinya dr intervensi tsb.

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
		Semua kata asing → judul miring	
10	26/6/021	perbaiki penulisan dan kesimpulan kopsi kuesioner	
11	29/6/021	Siap ujian	