
Patient Centered Approach and Health Related Quality of Life in Essential Hypertensive Patients

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Abstract: Hypertension is a common chronic disease amenable to control by adopting relevant lifestyle modifications and/or appropriate medication. The aim of the study was to assess the effect of patient centered approach on self-reported health related quality of life (HRQoL) in patients with essential hypertension attending Internal Medicine outpatient clinic in Zagazig University hospital. This single blinded randomized controlled clinical trial was conducted in Zagazig university internal medicine outpatient clinic on 112 non complicated apparently healthy essential hypertensive patients without comorbidities from 45 to 65 years old randomly allocated into two groups (intervention and control 1:1). Data for this study was collected by social, biological and SF-12v2 questionnaire for both groups. Then management of the intervention group according to the patient centered approach for nine months while patients within control group received classic disease centered approach. The patients within intervention group were given an individualized medical care and tailored patient education program about essential hypertension. The outcome of disease was assessed by measuring change in blood pressure control and health related quality of life within the two groups. It has been found that patients with essential hypertension within both groups reported deteriorated HRQoL yet there was no statistically significant difference between both groups regarding HRQoL at the start of the study. By the end of the study, there was a statistically significant difference between the two study groups regarding blood pressure control and self reported health related quality of life where patients within intervention group reported statistically significant improvement in both variables. In conclusion, the patient centered approach is better than the disease centered approach in management of patients with essential hypertension.

Keywords: Essential Hypertension, HRQoL, Patient Centered, Disease Centered

1. Introduction

Hypertension is a very common condition run across by a physician in primary care setup [1]. In Egypt, approximately 33.3% women and around 25% of men aged from 35-59 years old were hypertensive. More than half of women and more than 40% of men in the 55-59 age group were hypertensive [2].

Hypertension results from different potential pathology that makes one person's hypertension distinct from another's,

and so the treatments must be different [3].

There is no single justification for the poor blood pressure control seen in many hypertensive patient subgroups, however, the breakup of health care and the lack of consistent fulfillment of system-level settlement in clinical practice are thought to be important contributors [4].

Efforts focused originally on educating patients about hypertension and the advantages of its treatment have not been enough in getting blood pressure controlled. Interventions directing only to physicians have not also led to

coordinated or significant improvements on a great extent [5].

Inzucchi and his colleagues [6] defined patient-centered care as an approach to “providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions”

The three main components of patient-centered care should include effective communication, partnership, and health promotion [7].

Effective communication is important to efficiently highlight the patient’s disease and illness to build up good understanding of the patient’s healthcare. Enterprise with patients occurs when clinicians and patients discover a common root upon which a mutual management plan can be developed. Effective health promotion, defined as tailoring healthcare strategy instituted on reflections on the patient’s past health history and current health perspective guarantee that healthcare plans are developed from comprehension of previous healthcare experiences [8].

HRQoL is a multidimensional parameter that combines many scopes related to physical, mental and emotional, and social functioning. HRQoL goes beyond the direct measures of health and concentrates on the sequels of health state on patient’s own life [9].

Although hypertension, especially in mild to moderate stages, is usually believed to be an asymptomatic condition, its liaison with change in well-being and health-related quality of life (HRQoL) is still a notorious issue [10].

The aim of this study was to assess the effect of application of patient centered approach to essential hypertensive patients on HRQoL of patients with essential hypertension.

2. Methods

2.1. Study Design and Place

Randomized controlled clinical trial- single blinded was carried out in Zagazig University Internal Medicine outpatient clinic.

2.2. Study Population

According to Confidence Interval 95%, power of the study 80%, ratio of intervention to control groups 1:1 and effect size 28%, the sample size was 112 randomly allocated as 1:1 so 56 were in intervention group and 56 in control group.

2.2.1. Inclusion Criteria

Non hospitalized uncontrolled apparently non complicated essential hypertensive patients without any associated comorbidities ($\geq 140/90$) male and female patients from 45 to 65 years old attending internal medicine outpatient clinic in Zagazig University hospital from the first of November 2013 to the end of October 2014.

2.2.2. Exclusion Criteria

- Newly diagnosed patients.
- Non cooperative.
- Mentally disabled.

Intervention group were subjected to patient centered approach meanwhile control group were subjected to traditional disease centered one

2.3. Tools for Data Collection

2.3.1. The Social Part Includes

Personal data (name, age, sex, address, telephone number, marital status, socioeconomic data (occupation, education, crowding index).

2.3.2. The Biological Part Includes

Asking about special habits, history of other disease, Family history of hypertension and past history of drug intake, diseases and surgery were also addressed. Blood pressure was measured using mercurial sphygmomanometer. Resting pulse, weight and height were measured then BMI was calculated.

2.3.3. SF-12v2® Health Survey

The SF-12 measures eight merits of functional health state: physical functioning, role limitations resulting from physical health problems, bodily pain, general health, vitality, social functioning, role limitations resulting from emotional problems, and mental health. Additionally, the SF-12 estimates global physical and mental function using summary scales, well-being [11].

The Physical Component Study (PCS12) and the Mental Component Study (MCS12) of the SF-12 demonstrated good internal consistency reliability, with alpha coefficients of 0.80 and 0.78 respectively [11].

2.4. The Patient Centered Approach

We apply patient centered approach focusing on three components; communication, health promotion and partnership.

2.4.1. Communication

Patients’ experience with a problem was uncovered by asking about: feelings, ideas, expectation and effect of hypertension on patients’ function.

We got a greater understanding of the whole person asking about one’s situation (relation with other family members and friends his or her life, presence of supporters and other social factors e.g. work, financial issues, education by using social questionnaire).

2.4.2. Partnership with Patients and Their Families

Effective communication skills (Active listening, asking open ended questions, and developing functional goals) were used to develop a mutual decision about the management plan for a patient’s condition and work with the patient and their supporters to help them get each person’s role in the plan. Spoken message was given to the intervention group in the form of individual education, includes a detailed necessary knowledge about hypertension.

2.4.3. Health Promotion

Effective case management: we estimated past prosperity

and failures of care to tailor future health initiatives to reduce risk of adverse health outcomes. We carried out discussions with patients about previous healthcare experiences to promote an understanding of how patients comply with certain sorts of care, such as care requiring follow-up appointments or self-directed home exercises.

Efficient use of resources was ensured by tailoring treatment plans to best state how patients are likely to respond to certain interventions

2.5. Follow up Visits for Both Groups

A printed follow up card was designed one copy given to the patient (intervention group only) and the other with the researcher including the telephone number of the researcher to give the patient the feeling of trust and responsibility. The time of the next visit (one visit per month for every patient within both groups) was informed to all patients within both study groups. Patients were reminded of the next visit also by a phone call if they missed it and another date within the same month was arranged to ensure that no patients missed a visit.

In each follow up visit, the patients were asked about any symptoms, problem with drug and red flags. Only, patients within intervention group received patient education and investigate any psychosocial problems trying to give them adequate support in the light of patient centered approach. All patients within both groups received full clinical examination including blood pressure measurement monthly.

2.6. Outcome Assessment

The outcome was assessed by measuring the change in the scores of self-reported HRQoL among patients within both groups by filling in SF12v2 twice on at the start of the study and the other by the end of the study. Also the change in the percentage of patients within the two groups who got their blood pressure controlled by the end of the study.

2.7. Ethical Consideration

Obtaining informed written consent from the 2 groups of patients after explaining the objectives of the work.

Confidentiality was guaranteed on handling data base and questionnaires forms according to Helsinki declaration of biomedical ethics.

Ethical approval was obtained from the Research Committee of Cairo and Zagazig University.

2.8. Data Analysis

The data were coded, entered and analyzed by SPSS program version 16. Data were statistically described in terms of Mean, \pm Standard Deviation (\pm SD) or Frequencies (Number of cases) and percentages when appropriate. The difference in the mean was assessed using paired t test. For comparing categorical data, Chi square (X^2) test was performed. Fisher Exact test was used instead when the expected frequency is less than 5. P value less than 0.05 was considered statistically significant.

3. Results

The largest percentage of our patients within both groups were from 45 to <50 years old followed by those from 50 to <55 years old. Regarding socioeconomic variables, the majority of cases in both groups were married and within middle social class from urban slums. The highest percentages in both groups were nonsmokers and reported irrelevant family history. There were no statistically significant differences between the two studied groups regarding age, gender, marital status, residency, patient education, patient occupation, social class, smoking and family history as a result of randomization.

Regarding physical characteristics, no significant differences were notices between the two studied groups regarding height, BMI and pulse. Systolic blood pressure readings were (157.41 ± 10.62) (157.32 ± 9.44) for intervention group and control group respectively. Diastolic blood pressure values were (96.54 ± 6.20) (97.95 ± 6.01) for intervention group and control group respectively. There was not a statistically significant difference between both groups regarding blood pressure measurement at the start of the study. Both groups were categorized according to blood pressure control into controlled and uncontrolled according to JNC 8 recommendations [12].

At the start of the study, the largest percentages of patients within both groups were uncontrolled (92.9% and 94.6% in intervention and control group respectively). However, by the end of the study, patients within intervention group reported statistically significant improvement of blood pressure control controlled blood pressure (85.7% vs 55.4% among control group) (defined as a blood pressure less than 140/90 mm Hg) (p value<0.001).

Table 1. Comparing HRQoL domains (SF12) in both study groups at the start and by the end of the study.

HRQoL domains	Study groups				* P value for group interaction
	Intervention group No=56		Control group No=56		
	Mean	SD	Mean	SD	
norm physical functioning before	32.99	11.64	36.53	9.57	
norm physical functioning after	50.02	8.86	38.21	10.87	< 0.001**
P value for time effect	< 0.001**				
norm role physical before	30.77	7.88	32.91	8.03	
norm role physical after	43.19	6.08	32.09	7.34	< 0.001**
P value for time effect	< 0.001**				
norm body pain before	34.69	9.72	33.97	8.23	
norm body pain after	41.61	8.89	29.60	10.91	<0.001**
P value for time effect	0.31				

HRQoL domains	Study groups				* P value for group interaction
	Intervention group No=56		Control group No=56		
	Mean	SD	Mean	SD	
norm general health before	28.69	9.03	37.54	10.97	
norm general health after	47.17	7.29	34.85	9.64	< 0.001**
P value for time effect	< 0.001**				
norm vitality before	42.18	9.96	41.82	9.36	
norm vitality after	57.45	6.91	42.72	7.43	< 0.001**
P value for time effect	< 0.001**				
norm social functioning before	34.21	10.32	30.96	8.39	
norm social functioning after	40.52	9.19	31.14	10.00	0.002**
P value for time effect	0.001**				
norm role emotional before	28.42	11.15	24.43	8.55	
norm role emotional after	42.49	8.72	27.22	8.52	< 0.001**
P value for time effect	< 0.001**				
norm mental health before	36.02	9.59	36.13	8.24	
norm mental health after	50.28	6.29	32.32	7.23	< 0.001**
P value for time effect	< 0.001**				
sum physical component before	32.98	6.92	37.96	5.68	
sum physical component after	45.91	5.72	36.66	8.03	< 0.001**
P value for time effect	< 0.001**				
sum mental component before	36.38	9.30	32.60	6.14	
sum mental component after	47.77	6.30	32.54	5.36	< 0.001**
P value for time effect	< 0.001**				

Overall, there was a highly significant increase after treatment in physical functioning, role physical, general health, vitality, social functioning, role emotional, mental health, summary physical component and summary mental component (Time effect, $p < 0.001$) but only evident as significant increase in intervention group and non-significant change among control group (group interaction, $p < 0.001$ while 0.002 for social functioning) (figure 1&2). Overall, time effect was not evident as significant change for body pain (Time effect, $p = 0.31$) but when tested for each group individually and after adjustment for multiple comparisons, there was a significant increase in intervention group and an opposing but a non-significant drop in control group (group interaction, $p < 0.001$).

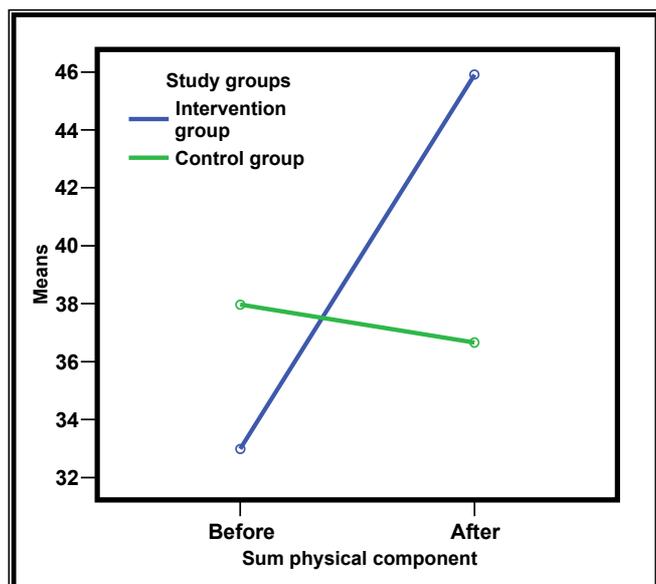


Figure 1. Line graph shows change of sum physical component of HRQoL over time within intervention and control group.

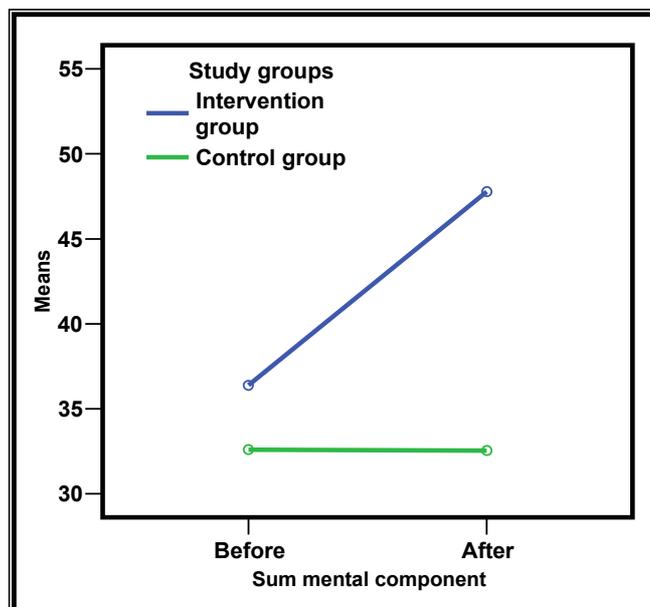


Figure 2. Line graph shows change of sum mental component of HRQoL over time within intervention and control group.

There is only a significant negative correlation between diastolic blood pressure value and sum mental component by the end of the study among intervention group.

4. Discussion

To the authors' knowledge, this study is the first prospective, randomized control clinical trial comparing the effect of a patient centered approach principles on self-reported health related quality of life in essential hypertensive patients. The results of this trial revealed patient centered approach significantly improved the outcome of those patients. Not only were participants able to get their BP controlled, but they also reported an increase in their quality of life.

Blood pressure was measured repeatedly along study period. The percentage of patients within intervention group who reach target blood pressure increases significantly by the end of our study.

By the end of our study, patients within intervention group reported statistically significant improvement in all domains of self-reported HRQoL compared with patients within control group. This can be attributed to application of patient centered approach that also increases number of patients whom blood pressure become controlled.

A study in Turkey showed that patients underwent health education program (which is a component of patient centered approach) reported significant increase in mean scores of all domains of HRQoL except bodily pain [13].

Another study [14] agreed with our results, as they found that intervention group (who underwent comprehensive approach for blood pressure management) reported a highly significantly increase in physical, mental and summary scores, resulting in a net score improvement compared to the control group.

Individuals with extreme adherence to antihypertensive treatment report higher scores in assessment of quality of life compared to individuals classified as extreme non-adherence to antihypertensive treatment [15]. This can be consistent with our finding concerning increase self-reported HRQoL among patients within intervention group who also reported increase percentages of those who become controlled.

The overall HRQoL is significantly better in the group of hypertensive patients with controlled blood pressure [16-17].

Most studies have found that patients with essential hypertension reported a worse QoL than that of normotensive individuals [18-19]. Population studies have shown that the HRQoL of individuals who have not been treated as well as those who have been treated for arterial hypertension is lower by 10–20%, provided they are aware of their diagnosis [10, 16-17, 20].

On the other hand, Trevisol and his colleagues [21] found that participants with hypertension and not using BP drugs had higher HRQoL scores than those using BP drugs either with uncontrolled or controlled BP. This finding makes the actual effect of high blood pressure on the quality of life still poorly understood.

The group of subjects with hypertension, whether diagnosed or not, displayed a poorer HRQoL with respect to the non-hypertensive patients, solely in physical functioning and general health. Those patients with known hypertension reported more bodily pain than those subjects with unknown hypertension, while there were no differences between patients with unknown hypertension and the non-hypertensive ones (16).

Although our intervention improved both blood pressure control and subjective HRQoL, yet we only found a significant negative correlation between summary mental component of HRQoL and diastolic blood pressure level in the end of the study. Non-significant negative correlation was found between summary scores and systolic blood pressure level among intervention group.

5. Conclusion

This study concludes that the patient centered approach is largely more successful than disease centered one in improving patient reported health related quality of life.

6. Limitations

The attention effect in the intervention group can't be ignored but the researcher postulates that the attention effect is an integrated part of the Biopsychosocial model.

Adoption of this model by the physicians needs change in behavior which seems to be difficult.

Generalization of the results of this study is difficult because it was done in one center only and the subjective way of data collection and of delivery of the Biopsychosocial model.

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