

# The Effect of Chronic Care Model Based Education on Disease Management in Hypertensive Patients

Konakçı G<sup>1</sup>., Töz H<sup>2</sup>., Akyol D A<sup>3</sup>.

<sup>1</sup>Department of Emergency Medicine, Faculty of Medicine, Ege University, Izmir, Turkey

<sup>2</sup>Department of Nephrology , Faculty of Medicine, Ege University, Izmir, Turkey

<sup>3</sup>Department of Internal Medicine Nursing , Faculty of Nursing, Ege University, Izmir, Turkey

## Background

The World Health Organization has estimated that high blood pressure causes one in every eight deaths, making hypertension the third leading killer in the world. Globally, there are one billion hypertensives and four million people die annually as a direct result of hypertension. In the Eastern Mediterranean Region, specifically, cardiovascular diseases and stroke are becoming major causes of illness and death.

## Materials and Methods

This research has been planned to be a randomized, controlled and half experimental study in hypertensive patients, in a “time-track” model based on E. Wagner’s “Chronic Care Model”, planned training and follow-up program’s effect on hypertension management and quality of life .The research has been conducted in Ege University Faculty of Medicine Nephrology Polyclinic, between December 2012 and April 2016; paired considering the paramaters such as age, gender, education. Patients are selected made by simple randomized sampling, a total of 30 hypertensive patients, of which 15 are intervention and 15 are control group patients.

Intervention patients have been applied a 6 months education and follow-up program, which is based on “Chronic Disease Model” and includes personal interviews, telephone communications, group meetings, biochemical and metabolic evaluations, dietician, psychiatrist, internal medicine specialist doctor and specialist nurse evaluations, Patient Education Booklet prepared solely prepared for this process and constructed web based patient education, as well as password protected electronic patient records access platform for patient care crew (Figure 1) . Control group patients have continued routine follow-ups.

Data has been collected via Socio-Demographic Characteristics Data Form, Disease Related Data Form (mean arterial blood pressure, waist circumference, body weight, body-mass index, HBA1C, Total Cholesterol, Total Trigliserid, urine analysis, fasting blood glucose level, ECG), Behavior and Habits in Hypertension Data Form, Level of Knowledge about Hypertension Data Form, Measurement of Evaluation of Chronic Disease Care Patient Form, WHOQOL-BREF(Tr) Form for Measurement of Quality of Life, Motivational Conversation Form, Self Follow-Up at Home in Hypertension Treatment Form, Hospital Anxiety and Depression Scale Form, at 0., 3rd and 6th months with repeated measurements. Written permission of Board of Ethics has been received, as well as oral and written permissions of the patients participating in the trial.

## Results

Quantitative and percentage distribution, the importance of the difference between two pairs (t-testing), the importance of the mean values difference between two pairs (t-testing), the one-way analysis of variance (ANOVA), Chi-squared test and Mann–Whitney U test have been used for statistical data analysis. There was no significant statistical difference between groups at month 0.

Statistical meaningful differences have been determined in measurement change mean values between the groups and at three different intervals within same groups in disease based data (mean arterial blood pressure, HbA1C, fasting blood glucose level, waist circumference, body weight, body-mass index), Level of Knowledge about Hypertension Data Form, Measurement of Evaluation of Chronic Disease Care Patient Form sum and 5 sub-scale scores average, WHOQOL-BREF(Tr) Form for Measurement of Quality of Life scores average values, at 3rd and 6th months. In the last month of the study one patient was applied additional medical therapy because of neuropathy and high blood glucose level, another patient has undergone coronary angiography. No comorbidity has been identified in the intervention group patients additional to beginnig diagnoses.

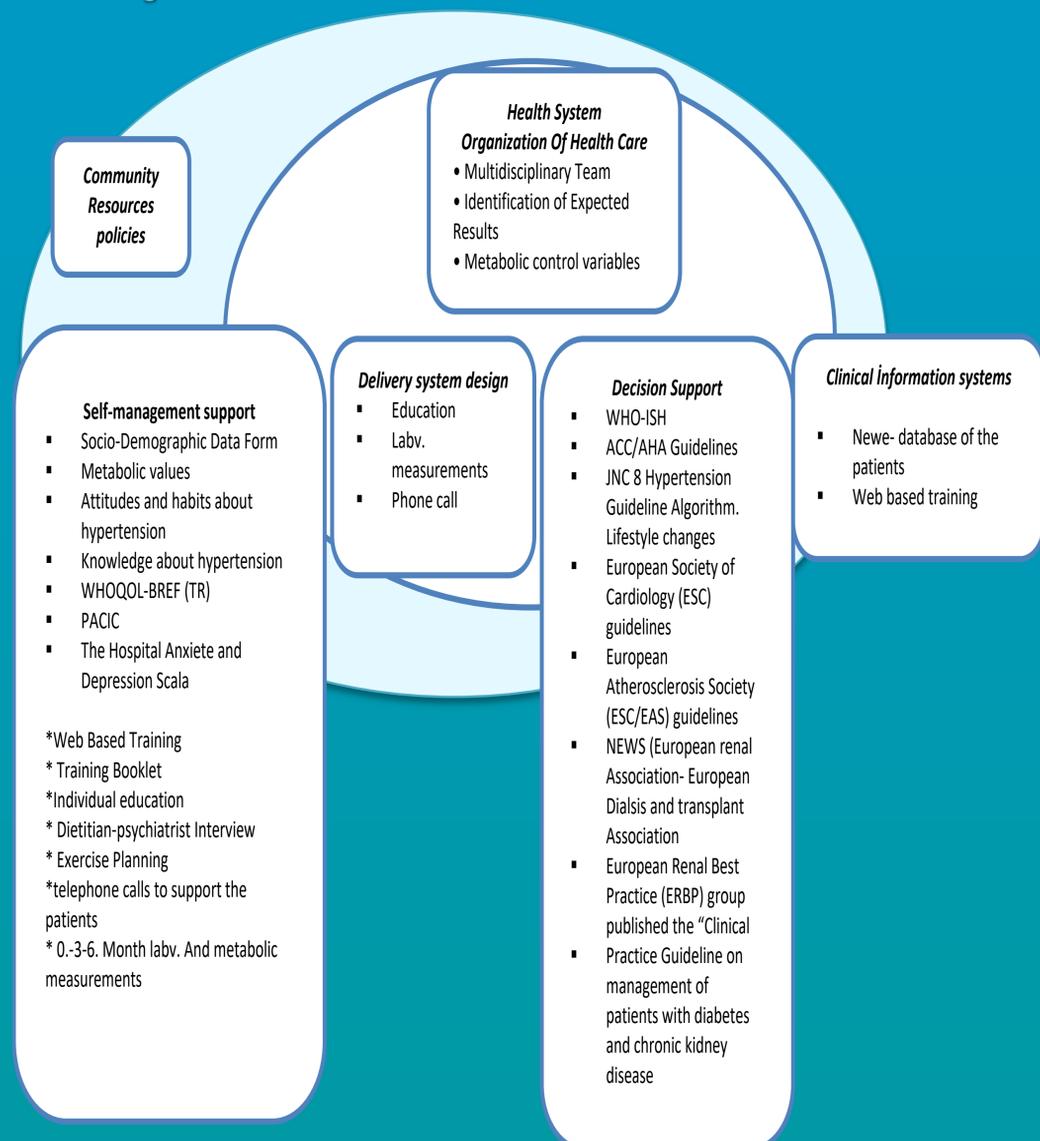
## Conclusion & Discussion

According to the study data; Wagner's Chronic Care Model can be applied to patients with hypertension and has been accepted as a care model that has positive results in disease management and improve the patient's metabolic values.

Application of education and follow-up program based on “Chronic Care Model” elicited improvement of quality of life, improvement of metabolic values, increase of knowledge levels and a positive change of chronic disease management satisfaction in hypertensive patients in 6 months period.

The additional comorbidity of hypertension, which accelerates end organ damage was not observed in the intervention group. Chronic Care Model has a relation with metabolic values and improvement of life quality of patients and hence the model has been observed to be effective in chronic disease management, such as hypertension.

Figure 1:Chronic Care Model Framework



The Chronic Care Model Wagner EH et al., Improvingchroniccare.org

## References

1. International Council of Nurses [ICN]. (2010). World Health Organization [WHO], 2008a
2. Chobanian AV, Bakris GL, Black HR, et al.(2003). The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. JAMA;289:2560– 2572
3. Wagner, E. H., Austin, B. T., Davis, C., Hindmarsh, M., Schaefer, J., & Bonomi, A. (2001). Improving chronic illness care: Translating evidence into action interventions that encourage people to acquire self-management skills are essential in chronic illness care. Health Affairs, 20 (6), 64–78.
4. Glasgow, R. E., Wagner, E. H., Schaefer, J., Mahoney, L. D., Reid, R. J., & Greene, S. M. (2005b). Development and validation of the patient assessment of chronic illness care (PACIC). Medical Care, 43(5), 436–444.
5. Baptista DR, Wiens A, Pontarolo R, Regis L, Torelli Reis WC, Correr JC.(2016). The chronic care model for type 2 diabetes: a systematic review. Diabetol Metab Syndr ,8:3-7