

Personality traits seen trough five dimensions of EPI instrument at CAD patients with Diabetes mellitus

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Abstract:

Objectives: The main objective that we expected is that there is a statistically significant difference between the means for the five dimensions on EPI instrument between patients with and patients without DM.

Materials and methods: This study includes 60 hospitalized cardio surgical patients that have indication for open heart surgery in the Special Hospital for Surgical Diseases “FILIP VTORI” in the period during the 2009 divided in two groups on the basis of the presence or absence of the relevant risk factor - Diabetes Mellitus. When the score for one dimension is among the value from 40-60 we say that the person has normal values and no aberration on the certain dimension. When the value is under or over the given normal value on one dimension, there is we say aberration which is adequately interpreted All results are graphically presented but further statistically analyzed.

Results and Discussion: Two group graphics are presented for the subjects with or without DM as co-morbidity for eighth dimensions on EPI instrument. Small differences among the dimensions have been found. Statistically significant difference has been recognized only when we analyze the dimension of oppositional for the EPI instrument.

Conclusion: According the graphical differences among dimensions (personality traits) on the EPI instrument for cardiovascular patients with and without Diabetes mellitus as co-morbidity as well as the statistical significance of the results, specific psychotherapeutic interventions can be applied in the psychological treatment of cardiovascular patients in function of raising awareness about health and avoidance of further complications and disease

Key words: Personality traits; Coronary heart disease; Psychosomatics; Diabetes mellitus; Emotions; Psychotherapy.

Introduction

Cardiovascular diseases are the leading cause in the range of diseases that rapidly increase the degree of mortality in the world. Cardiovascular diseases are the leading cause for mortality in Macedonia as well [1]. According to the statistics in the Institute for public health 57% from the death cases in Macedonia in the 2010 are as a consequence of the cardiovascular disease [1].

These numbers initiated different types of researches past decade. From the middle of the past century there have been a number of researches which try to correlate personality and the disposition for development of a disease. Studies have shown that certain personality traits are related as co-factors in the development of a certain disease. *Flanders Dunbar*, known as the *first lady of psychosomatics*, started the initial studies of a specific type of personality with defined characteristics and dispositions related to specific health problem. In her studies she speaks for “coronary personality”.

Cardiologists Meyer Friedman and R. H. Rosenman first described the relationship between personality types and heart diseases. They concluded Type A behavior as a potential risk factor in coronary disease, based on a nine-year study of healthy men aged 35–59, conducted in the 1950s [2,3]. They estimated that Type A behavior doubles the risk of coronary heart disease in otherwise healthy individuals. The reasons for their conclusion were:

- the fast-paced nature of Type A individuals and their stress on deadlines, work and the like making them highly susceptible to stress
- the competitive nature of Type A personalities making them angry, tense and pressurized
- Type A behaviors such as fast talking, explosive speech, clenched fists, restlessness, and hurrying being general indicators of an underlying unhealthy emotional state [2,3].

Other authors see Type A personality as a complex of clinical phenomena characterized with free floating aggression, lack of time and number of psych - motor symptoms: it is not psychosis, nor it is a obsession or phobia, but it is a social accepted – more over praised - form of conflict [5]. Other researchers found that it is not a whole behavior complex (the complex of Type A personality) but the specific trait in personality: hostility, cynicism and anger form so called “toxic” component of the “Type A Behavior”, that defines the predictability in humans to the development of CAD or not [5,13]. These listed personality characteristics or traits influence mostly health outcome and are connected with the incidence of coronary heart disease [5, 13]. The thesis that a person’s pattern (personality trait or characteristic) influences the propensity (affinity) in the development and progression of a specific disease progression is however, controversial.

In this research we will try to describe the personality traits of the CAD patients with consideration of the factor Diabetes Mellitus. Diabetes mellitus is a well known risk factor for myocardial infarction [6]. Researches until today have not yet found certain type of personality that correlates with the existence of the DM, but they point out the important role and influence that existence of DM has over the life process [7]. Some attempt to correlate personality traits with the cause and the course of diabetes mellitus. Type D personality refers to the tendency to experience negative emotions and to inhibit self-expression in social interaction [13].

Materials and methods

This study includes 60 hospitalized cardio surgical patients. All subjects are patients that have indication for open heart surgery in the Special Hospital for Surgical Diseases “FILIP VTORI” in the period during the 2009. They are divided in two groups on the basis of the presence or absence of the relevant risk factor - Diabetes Mellitus: CHD patients without DM (n=30) and CHD patients with DM (n=30). Study groups were matched by age, as mean age was \bullet 1=60, 6 (\bullet 1=7, 7) for the CHD patients without DM, and as a mean age for the CHD patients with DM is \bullet 2=54, 43 (\bullet 2=10, 4).

The instrument being used in this research is EPI (Emotion profile index). This psycho - diagnostic instrument gives information's for the basic personality traits and areas in which the person may be experiencing difficulties [8]. It was developed on the basis of the multidimensional model of emotions of Robert Plutchik which shows 8 basic bipolar emotions which are analogous to the colors on a color wheel; they mix with one another and form different personality traits [8]. EPI is based on the principles for determination of the personality traits according emotions as their basis:

- Incorporation – personality trait that implies *acceptance*
- Self-defense - implies *fear*
- Depression – implies *sadness*
- Oppositional – implies *rejection*
- Aggression – implies *indignation*
- Reproduction – implies *joy*
- Exploration – implies *expectations or planning*
- Dyscontrol – implies *impulsivity*
- Bias – (scale for evaluation of socially accepted answers) [8].

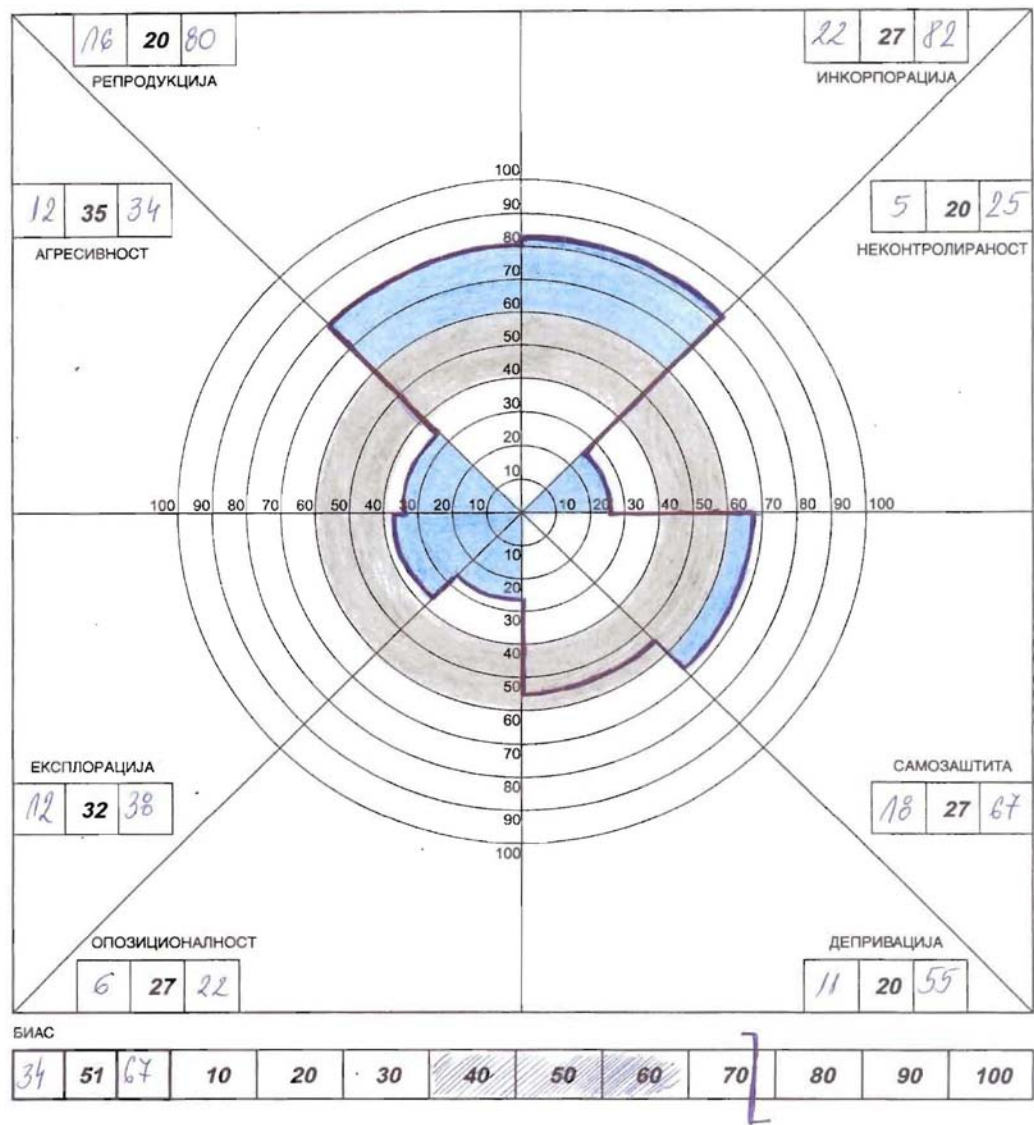
All subjects fulfilled the EPI Instrument. Scores for each patient that fulfilled the EPI Instrument can be graphically presented. For all 30 patients that have indication for open heart surgery and have no DM we created a group EPI profile. The same group profile was made for the other group of patients - 30 patients that have indication for open heart surgery and have DM as co-morbidity. When the score for one dimension is among the value from 40-60 we say that the person has normal values and no aberration on the certain dimension [9]. When the value is under or over the given normal value on one dimension, there are we saying aberration which is adequately interpreted [8]. It counts the same for the group EPI profile value. All results are graphically presented but further statistically analyzed.

The two group profile for all eight dimensions on the EPI instrument were graphically presented on the Graphic 1 and 2.

Results and Discussion

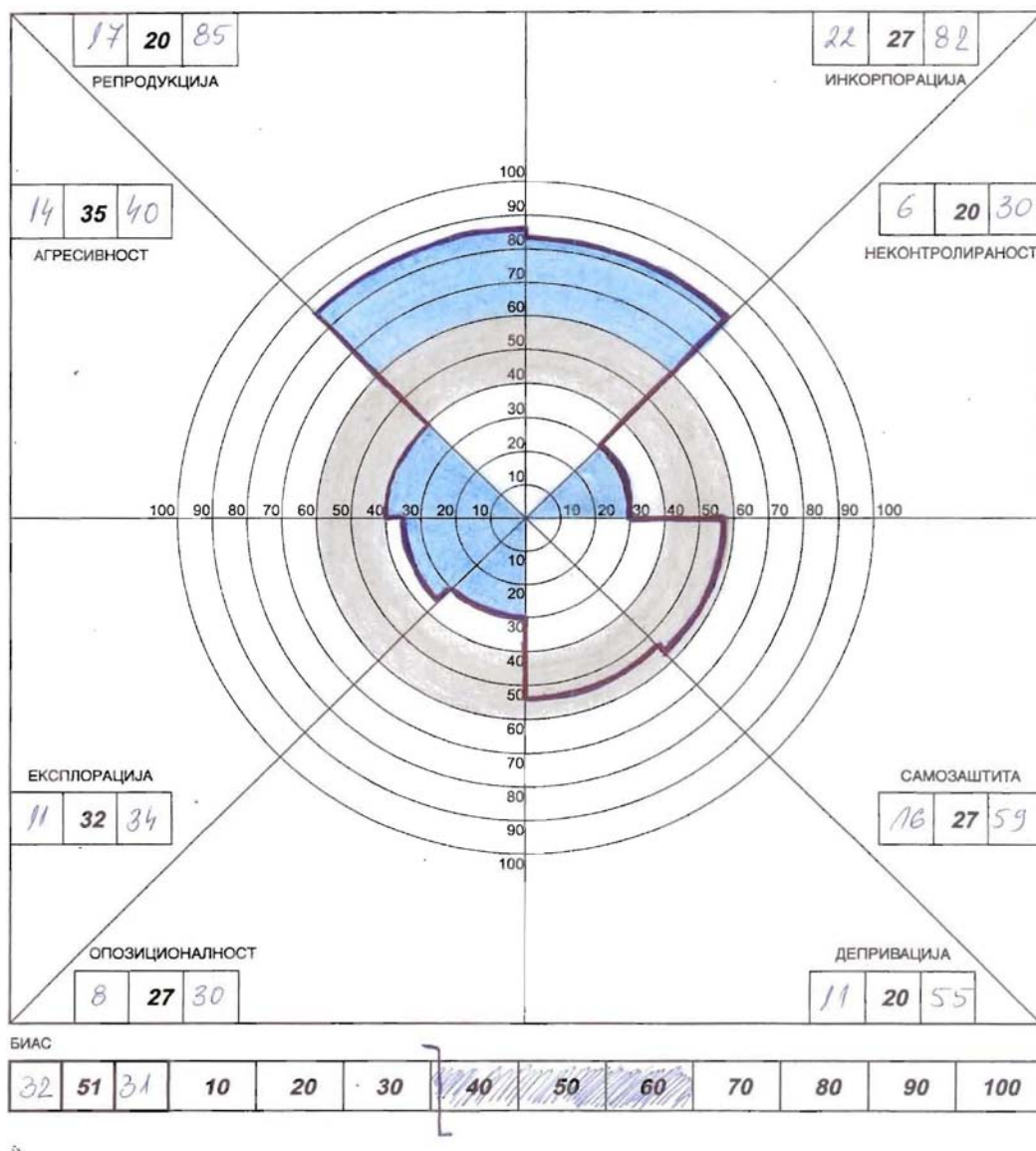
Tables and Figures

Figure 1. Group profile for CAD patients without diabetes mellitus



On Figure 1 we can see the group EPI profile for CAD patients without DM. According the value (40-60) [9] the group EPI profile for the CAD patients without DM points out three personality traits that show higher value that the normal value: incorporations, reproduction and self-defense. According the value (40-60) [9] the group EPI profile for the CAD patients without DM points out three personality traits that lower value that the normal value: oppositional, exploration, aggressiveness, and uncontrol. According the value (40-60) [9] the group EPI profile for the CAD patients without DM points out three personality traits that show normal value for: deprivation.

Figure 2. Group profile for CAD patients with diabetes mellitus



On Figure 2. we can see the group EPI profile for CAD patients with diabetes mellitus and according the value (40-60) [9] the group EPI profile for the CAD patients with DM two personality traits show higher value: reproduction and incorporation. According the given normal value the group EPI profile for the CAD patients with DM points out three dimensions that show lower value: exploration, uncontrol and oppositional. According the given normal value the group EPI profile for the CAD patients with DM three dimensions show normal values: aggressiveness, self-defense and deprivation.

The results on the conducted EPI Instrument are on interval scale. We used the statistical method Z-scoring. The main objective that we expected is that there is a statistically significant difference between the means for the five dimensions on EPI instrument between patients with and patients without DM. The five dimensions on EPI instrument that we took in consideration from the whole eight are the following: exploration, uncontrol, oppositionality, deprivation and aggressiveness, since on the other three dimensions on EPI instrument, the both group profiles showed same scores and no differences.

Table 1 presents group scores for all subjects included in the research for the five dimensions on which the group graphic profile showed difference. Statistical analysis was conducted and they are presented on Table 1. This is given at the end of this paper as additional document.

When we look the two group graphics for the patients that have and those who do have DM as a co-morbidity risk factor in the development of the CAD we can see that there are some small differences among the dimensions of the EPI instrument. Statistically significant difference has been recognized only when we analyze the dimension of oppositional for the EPI instrument.

The subjects of our interest are the patients that have indication for cardiovascular disease and that have DM as co-morbidity. When we see the graphic and the two dimensions that differ from the normal values given as a criteria [9] we can see that these patients show tendency to lower self - protectiveness and greater level of the dimension uncontrol. The result directs us to think how we will treat these patients if they show greater tendency to uncontrol and lower tendency on self-protectiveness. Both dimensions play an important role in controlling the diabetes.

One of the directions is, because of the lower tendency to self - protectiveness to stimulate the active role these patients have in the care for themselves: stimulation of the active aspect with encouraging them to take actions in their care, emphasizing the aspect of responsibility in their lives and health outcome or stimulation them to become aware how they can take part in the whole rehabilitation postoperative process. The goal we'll have to reach is to protect themselves from their inadequate behavior as well as increasing the control over their health outcome.

The following dimensions (or traits if we speak in terms of personality) oppositional and aggressiveness are at these patients increasing level according the normal values given as a criteria [9]. These show a greater tendency to negative emotional pulsion that lead to increased vegetative reactions and therefore are a good precondition for metabolic misbalance. The diabetes is an endocrine disease that has a direct connection to this process.

Including these patients in program like anti-stress psychological programs is a medicine of choice that will offer them space and stimulate more peaceful job of the whole organism which leads to more balanced work of the pancreas. If we take in consideration that we speak about personal constructs that in great amount care the social aspect of the already learned matrix of self - experiencing and self-manifesting, psychotherapeutic interventions promise a lot with these patients especially in the preventive developmental period. Re-definition of the emotional reactions related to the potential stressful events, and for sure we list here also the diabetes mellitus, will give the opportunity to learn more for themselves and the way they react and with that to open the process of learning new constructive strategies of overcoming of further stress. ‘

If we look at the bias dimension, we can say that there is a greater tendency at patients with DM to show themselves in a social negative way which speaks in the direction that they have a greater tendency to show themselves more negatively than they really are. On the other polarity stands the group of patients that have no DM and the result that speaks that they have tendency to show themselves in more positive way, or that they don't show the real picture and make it more positive that it really is.

Conclusion

CAD is the main cause for mortality at about 50% people that suffer from diabetes mellitus. At some of them it is the main cause for the development of this disease, at some of them it is only the co-factor among the others and at some of them it is the cause for number of complications. And damage of the whole health outcome [10]. Although it is a chronically illness the adequate control in great amount influences the prevention or/and can help in the decreasing degenerative damage process of blood vessels and the heart as well [13].

The idea of relatedness of emotions, feelings and social context with the health of the body is old. Cardiovascular diseases are on the leading place as a clear example of how stress leave dangerous consequences on humans health if the human is not enough able to cope with them. Increased number of diabetes mellitus and the influence it has on CAD patients also support us to create a program for on time and adequate treatment and control on diabetes. This is a necessary precondition for harmonious function of the organism and maintenance this homeostasis.

Building conciseness for one's health and its value for our life should be a priority goal when we speak about prevention of cardiovascular disease that still hold the first place of cause of mortality in the world. Cumulated affective tension influence the work of the heart and the pancreas. People with genetic predisposition have greater tendency to develop diabetes mellitus and this leads us to certain programs for this specific patients.

As a continuity of this research we can say that patients that had cardio surgical interventional and had diabetes mellitus as a co-morbidity have to undergo for further life habit changes and adaptation to the new regime of life. It is for the best to work with them psychotherapeutically on strengthen the constructive healthy capacities in the person for active care, which is an essential precondition for prevention and decreasing the development of side health difficulties.

Psychotherapeutic work with them helps them see clearly their health situation, their role in the whole health outcome. Psychotherapeutic treatment gives the opportunity to accept the reality about their health. Behavior techniques can help them change certain behavioral habits which will bring patients to reasonable options for self-help, possibility to health and avoidance of further complications and disease.

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Table 1.

Statistically significant difference between the means for the five dimensions on EPI instrument between patients with and patients without DM

Dimensions on EPI instrument		Means (•)	Variance (• 2)	Standard deviation (•)	Z-score
Uncontrol (N-PIE)	• -score of subjects with DM	30,17	427	3,77	1,47
	• -score of subjects without DM	26	195	2,5	
Self-defense (S-PIE)	• -score of subjects with DM	58,87	297	3,14	3,28
	• -score of subjects without DM	65,03	183,3	2,47	
Oppositional (O-PIE)	• -score of subjects with DM	28	258	2,9	2,53*
	• -score of subjects without DM	22,93	1,325	2,1	
Aggressiveness (• -• • •)	• -score of subjects with DM	40	**	2.7	8,63
	• -score of subjects without DM	34.40	232	2.78	
Deprivation (D-• • •)	• -score of subjects with DM	53	373.45	3.53	2,18
	• -score of subjects without DM	56.67	459.2	3.91	
Bias	• -score of subjects with DM	63.40	130.87	2.09	5,42
	• -score of subjects without DM	66.33	140.6	2.16	

* $p < 0.05$ data are compared with CHD with DM

