

THE RELATION BETWEEN STRESS AND ANGER MANAGEMENT IN PEOPLE WITH HYPERCHOLESTEROLEMIA

SEVER MUREȘAN*

ABSTRACT. An individual's relationship with the exterior is considered to be a generating source of positive and negative emotions. Anger as a negative emotion implies the existence of a triggering factor. Stress is a cause of the onset of negative emotions with implications in numerous psychosomatic disorders. The study shows that in case of people suffering from hypercholesterolemia, interpersonal relationships, the environment, professional activity, time management, lifestyle and self-harm, as sources and areas of stress manifestation, are strongly related to anger as a state and as a trait, which implies that the lack of privacy in the psychological space, feelings of personal failure, culpability, disappointments, inability of work and time management, imbalance between activity and rest generate subjective experiences of anger, or as a disposition of perceiving situations as irritating and acting accordingly.

Keywords: *stress, cholesterol, anger.*

ZUSAMMENFASSUNG. Die Beziehung Zwischen Stress und Wut-management in Menschen mit Hypercholesterinämie. Eines Individuums Beziehung mit der Umwelt gilt als eine Generierungsquelle für positive und negative Gefühle. Ärger als ein negatives Gefühl impliziert die Existenz eines Auslösefaktor. Stress ist eine Ursache für das Auftreten von negativen Gefühle, mit Auswirkungen in zahlreichen psychosomatischen Störungen. Die vorliegende Studie zeigt, dass bei Menschen die an Hypercholesterinämie leiden, zwischenmenschliche Beziehungen, die Umwelt, Berufstätigkeit, Zeitmanagement, Lebensstil und Selbstverletzung als Quellen und Bereiche von Manifestationen von Stress sind stark mit Ärger als Zustand und als Eigenschaft verwandt. Das bedeutet, dass der Mangel an Privatsphäre in dem psychologischen Raum, die Gefühle des persönlichen Versagens, Schuld, Enttäuschungen, Unfähigkeit der Arbeits- und Zeitmanagement, und Unausgewogenheit zwischen Aktivität und Erholung generieren subjektiven Erfahrungen der Wut oder eine Disposition die Situationen als irritierend wahrzunehmen und entsprechend zu handeln.

Stichwörter: *Stress, Cholesterin, Ärger*

* Spitalul Municipal Dej, Secția psihiatrie, muresansvr@yahoo.com

Introduction

Theoretical Framework

An English word at its origins, stress refers to a situation regarding the imbalance of organism homeostasis under the action of physical, chemical, biological or psychological factors. It occurs primarily in the psychological sphere because of the significance it holds to the person, its effect targeting the psychophysiological unit of the person; it is essentially psychosomatic (Sîrbu, 1979).

In another acceptation, by stress one understands the interactive configuration between organism and environment, a relation in which the organism is over solicited, exceeding its reaction supplies, with the risk of exhausting them. (Cornuțiu, 2003).

A current synthetic definition of “general stress” is given by A. Von Eiff as being a “psychophysical reaction of the organism, generated by stressors which act on the pathway of the sense organs of the brain, thereby generating – because of the cortical-limbic connections and the hypothalamus – a whole chain of neurovegetative and endocrine reactions, with an impact over the entire organism.” (Iamandescu, 1999 p41).

Regarding psychological stress, it represents a particular case of stress, being triggered by psychological agents. These can have a negative significance (distress) or a positive one (eustress) and operate in the conscience plane only after their decoding and after the evaluation of the “task” they set for the individual. (Iamandescu, 1997). Intrapsychological stressors refer to the conflicts between motivations, intrapsychological conflicts etc. As M. Gelder (cited by Cornuțiu 2003) observed, the reaction to stress implies a psychological response, such as loss of interest, tension, fatigue; in case of organic stress, the responses are mainly somatic (vegetative, endocrine, metabolic), and in the psychological stress the responses are dominated by the psychological system (affection, anxiety, tension etc.) Cornuțiu 2003).

The existence of somatic reactions to emotions is a known fact and, from this point of view, especially the ones who exteriorize their feelings less are more susceptible towards producing responses at alarming heights in the neurovegetative and endocrine fields.

There are numerous disorders with psychosomatic implications: for example in case of cardiovascular disorders, the strict correlation between anxiety and fury on one hand, and the heart activity on the other hand, is well known. Experiencing anger can be understood in the sense of a state as a subjective feeling which varies in intensity, from irritability to intense fury, and in the sense of a subjective trait as a disposition to perceive situations as annoying and to respond to these with a more frequent expression of anger. Anger is a very

intense emotion because of the impact it has on the social interactions, but also because of the effects it produces on the individual. It is a secondary emotion, which has other emotions at its basis, such as fear, humiliation and rejection. It can also be seen as a defense mechanism against painful emotions; it can be associated with failure, low self-esteem and anxiety. So far, the reason for which this kind of emotion in some cases manifests itself as tachycardia, while in others as arrhythmia or symptoms of neurocirculatory fatigue, is unknown. Cardiac patients comply strictly to the social norms, apparently being sociable and open, but at the same time displaying anxiety combined with rigidity in behavior (Luban-Plozza et al, 1996). Regarding the specificity of the emotional factors, it can be said that chronic generalized anxiety and the repressed hostile impulses are important factors in such disorders.

In the essential hypertension, the majority of the studies underline the fact that the repressed hostile tendencies play a very important role in this phenomenon; according to Cannon's observations, anger and fear create an increase of the arterial pressure in the experimental animal. It was shown that the chronically repressed hostile impulses which always associate with anxiety have a significant impact on the blood pressure values (Alexander, 2008).

The individual that has become excessively inhibited under the influence of its early experiences will discover that it is much more difficult for him to manage his aggressive impulses in his adult life. Also, Richard Schekelle (1980) confirms after some research that hostility constitutes a cause for some diseases. Psychological characteristics like depression, fury, hostility or anxiety influence the metabolic syndrome by acting on some physiological pathways, especially the HPA (Hypothalamic-pituitary-adrenal) axis. (Goldbacher, et al 2007).

Repressed aggressiveness, alongside narcissism and childishness are characteristic for patients suffering from irritable bowel syndrome (Freyberger, 1969 cited by Luban-Plozza et al). In the emotional diarrhea, the personality is marked by the fear of authority and the feeling of dependency, and in the patients suffering from spasmophilia the instability and emotiveness and also an unrestrained aggressiveness were highlighted (Mihăescu, 1996).

When it comes to the ties between stress and the high level of blood cholesterol there are numerous studies which demonstrate them. Adrenaline and cortisol, hormones that make their presence known especially during stress, favor the production of cholesterol. This is an organic alcohol identified in the cellular membrane and in the tissues of the organism and is transported by blood. It is absorbed through alimentation; it is concentrated in the liver, the marrow and the brain, having an important role in the organism, many processes having it as a precursor. Under general recommendations it must be under the value of 200 mg/dl.

Hostility is a toxic emotion which, in time, raises the adrenalin level, which in its turn raises the cholesterol and creates a permanent state of agitation, says David Beales, a specialist in behavioral medicine. These people abuse food and smoking more often and their schedule usually doesn't involve physical exercises. They react faster and more powerful to stress, both mentally and physiologically. Consequently, they are prone to being overweight and to having a higher level of cholesterol. Also, some researchers issued the hypothesis that low levels of cholesterol due to medication are associated with a negative emotional state, which can then manifest as hostility (Muller et al, 1995 apud Wilson et al, 2001). Golomb et al. (1997) in their study approach the same issue, underlining the fact that in case of cholesterol reducing medication out of the statin class there can be severe irritability manifestations (such as murderous impulses, destruction of property, threats). Concretely, studies have shown that people with high levels of cholesterol are more hostile than those with low levels. Personality traits such as hostility or impulsiveness are the ones most connected to the metabolic syndrome in general (Sutin et al, 2010).

Research Methodology

Participants

The research lot was formed out of 83 Romanians, out of which 49 women and 34 men. Their age ranged between 22 and 77 years, with a median of 51 years. The cholesterol value was established through laboratory analysis.

Instruments and Work Procedure

The participants received in paper-pencil format an instrument batch containing two questionnaires, one for evaluating anger and one for the investigation of the global intensity of stress. The participants were told they could fill out the questionnaires either on the spot or at home.

To evaluate anger as a state and as a trait, the psychometric scale STAXI-2 (Spielberger, 1998) was used, being the most used instrument on a world scale in anger management. It is an objective instrument, targeting the situational states of anger, personality traits that predispose the exteriorization of anger, the internal experience of stress, the expression and control of the anger.

The stress evaluation was realized with the Stress Level Questionnaire developed by Abraham (1985); an instrument which evaluates the global intensity of stress depending on 6 factors which constitute its sources and areas of manifestation (ambiance A, PE self-harm, interpersonal relationships RI, professional activity AP, time management AT, lifestyle RV). The questionnaire comprises 84 questions with the following answer options: „never”, „rarely”, „often”, and “always”.

The internal consistency of the utilized scales varied between 74-94 (excellent) at subscales which evaluate anger and anger management, and between 73-96 (excellent) at subscales which evaluate the level of stress depending on the 6 factors.

Results and Discussions

To process the statistical data in this research the statistically specialized soft SPSS (Statistical Package for the Social Sciences) version 17.0, and also the correlation coefficient r -Pearson to measure the intensity of the ties between variables.

Between the ambiance subscale (A) and anger as a state, in people with hypercholesterolemia, there was a highly significant correlation $r=.419$ at a significance level of $p=.000$ ($<0,05$), and between the same subscale and anger as a trait there was a highly significant correlation $r=.557$ at a significance level of $p=.000$ ($<0,05$). The highly significant, positive correlation between the variables indicate a direct proportional relation between them, therefore an ambiance without intimacy, inside which the person suffering from hypercholesterolemia doesn't feel relaxation and peace (so it is a stress generator) and is associated with a high level of anger as a trait and as a state.

Between the subscale of self-harm (PE) and anger as a state a highly significant correlation $r=.325$ at a significance level of $p=.004$ ($<0,05$) was obtained, and between the same PE subscale and anger as a trait there was a highly significant correlation of $r=.432$ at a significance level of $p=.000$ ($<0,05$). This indicates a direct proportional relation between them. The more acute the sentiments of guilt and fear are, the more is anger as a state and trait more obvious.

Between the subscale of interpersonal relationships (RI) and anger as a state a highly significant correlation $r=.323$ at a significance level of $p=.004$ ($<0,05$) was obtained, and between the same RI subscale and anger as a trait there was a highly significant correlation of $r=.395$ at a significance level of $p=.000$ ($<0,05$). The highly significant, positive correlations indicate a direct proportional relation between these variables. Consequently, a high level of stress in people suffering from hypercholesterolemia given by financial problems, faulty relationships etc. is associated with a high level of anger as a state and trait.

Between the professional activity subscale (AP) and anger as a state there was a highly significant correlation $r=.232$ at a significance level of $p=.045$ ($<0,05$), and between the same subscale and anger as a trait there was a highly significant correlation $r=.245$ at a significance level of $p=.033$ ($<0,05$). There is therefore a significant and positive correlation, which implies that the stress caused by the incapacity of organizing work, the impossibility of turning down additional tasks, is associated with a high level of anger as a state and trait.

Between the time management subscale (AT) and anger as a trait there was a highly significant correlation $r=.505$ at a significance level of $p=.000$ ($<0,05$). This indicates a direct proportional relation between them, therefore in case of people suffering from hypercholesterolemia, a high level of stress due to lack of time planning, task overload etc. Determines a high level of anger as a trait. Between the same subscale and anger as a state there was a significant correlation $r=.278$ at a significance level of $p=.014$ ($<0,05$). This indicates in case of patients suffering from hypercholesterolemia that stress due to lack of time planning determines a high level of anger as a state.

Between the lifestyle subscale (RV) and anger as a trait there was a highly significant correlation $r=.322$ at a significance level of $p=.004$ ($<0,05$), which shows the existence of a direct proportional relation between the two variables. Therefore the higher the stress caused by the imbalance between activity and rest, the more evident anger as a trait becomes. . Between the same subscale and anger expression and control subscales there was a highly significant correlation $r=.350$ at a significance level of $p=.002$ ($<0,05$). In cases of people suffering from hypercholesterolemia, the higher the stress levels due to lifestyle are, the more pronounced the tendency of anger expression control is.

Between the global level of stress and anger as a state there was a moderate correlation $r=.347$ at a significance level of $p=.005$ ($<0,05$), and also between the global level of stress and anger as a trait there was a highly significant correlation $r=.517$ at a significance level of $p=.000$ ($<0,05$). As a consequence, in people suffering from hypercholesterolemia, the more emphasized the global stress level is, the more is anger as a trait and state more pronounced.

In cases of people with hypercholesterolemia between the ambiance subscale (A) and the self-harm subscale (PE) a highly significant correlation $r=.716$ at a significance level of $p=.000$ ($<0,05$). Therefore, the feelings of depreciation, guilt, anxiety or personal failure are more pronounced when there is a lack of privacy, peace, and quiet in the psychological space.

Also, the ambiance subscale (A) is highly significant correlated $r=.688$ at a significance level of $p=.000$ ($<0,05$) with the interpersonal relationships subscale (RI). So, the same lack of privacy in the personal space perceived at a high intensity can create difficulties in the interactions with others and with oneself, feelings of guilty and disappointment.

The professional activity subscale (AP) is highly significant correlated $r=.597$ at a significance level of $p=.000$ ($<0,05$) with the ambiance subscale (A), which indicates a strong and direct proportionate relation between them. Therefore, in people suffering from hypercholesterolemia the more intense the work related stress is, the more emphasized the feeling of lack of privacy and relaxation is.

The same subscale (AP) is highly significant correlated $r=.660$ at a significance level of $p=.000$ ($<0,05$) with the self-harm subscale (PE) in people with high levels of cholesterol, meaning that the work related stress is directly proportionate with the feelings of guilt, anxiety, fear or personal failure.

The professional activity subscale (PE) is also highly significant correlated $r=.678$ at a significance level of $p=.000$ ($<0,05$) with the interpersonal relationships subscale (RI), highlighting a direct proportionate relation between stress related from work activities and difficulties regarding professional or personal relationships.

Between the time management subscale (AT) and the ambiance subscale there is a highly significant correlation $r=.648$ at a significance level of $p=.000$ ($<0,05$). This shows that in cases of people suffering from hypercholesterolemia a direct proportionate relation between the two variables. The lack of time management and the voluntary task overload determine the enhancement of the feelings of lack of privacy, of peace and relaxation and of comfort. The same subscale (AT) is also highly significant correlated $r=.648$ at a significance level of $p=.000$ ($0,05$) with the self-harm subscale (PE). Therefore, an increase in the stress levels determined by lack of time administration capacities will cause emphasized feelings of anxiety, guilt and personal failure.

The time management subscale (AT) is also highly significant correlated $r=.660$ at a significance level of $p=.000$ ($<0,05$) with the interpersonal relationships subscale (RI). In cases of patients suffering from hypercholesterolemia, the lifestyle subscale (RV) is highly significant correlated $r=.576$ at a significance level of $p=.000$ ($<0,05$) with the ambiance subscale (A), which signify a direct proportionate relation between the two variables.

Also, between the same subscale (RV) and the self-harm subscale (PE) there was a highly significant correlation $r=.496$ at a significance level of $p=.000$ ($<0,05$). This signifies a direct proportionate relation between the two variables; a high stress level due to lifestyle is associated with heightened feelings of personal failure or with avoidant and submissive conduct.

The lifestyle subscale (RV) is also highly significant correlated $r=.547$ at a significance level of $p=.000$ ($<0,05$) with the interpersonal relationships subscale (RI) in cases of people with hypercholesterolemia. Therefore, the more intense the stress due to lifestyle is, the more intensely will the interpersonal relationships be marked by feelings of guilt, disappointment etc.

The global stress level in patients suffering from hypercholesterolemia is highly significant correlated $r=.799$ at a significance level of $p=.000$ ($<0,05$) with the ambiance subscale (A), but also with the self-harm subscale (PE) ($r=.864$, $p=.000$ ($<0,05$)) and with the interpersonal relationships subscale (RI) ($r=.862$, $p=.000$ ($<0,05$)). Thus, the higher the global stress level in people with hypercholesterolemia is, the more heightened the feelings of lack of privacy, of relaxation, experiences of personal failure and disappointment in relationships are.

Conclusions and Practical Implications

Stress and anger as a state and as a trait are associated by the fact that people with hypercholesterolemia have a tendency to manifest this negative emotion, either because of the ambiance, interpersonal relationships etc., or because of the correlations between these factors. The relation between an individual and the environment has always been associated with a higher or lower level of stress. This stress can be generated by the lack of intimacy of the psychological space, by personal failure experiences, by blame and disappointment in the interpersonal relationships, by the incapability of managing activities or time, or because of the imbalance between activity and rest. In conclusion, for people suffering from hypercholesterolemia the lack of intimacy and relaxation, the experiences of personal failure and disappointment in relationships determine a heightening of stress, favoring a more pronounced manifestation of anger as a state and as a trait.

Anger is an alarm signal which helps one understand that an inner need is not satisfied. Anger management can protect you from some problems in the personal and professional life, stress related disorders and also from some psychosomatic diseases (ulcer, diabetes, heart diseases). On this line, psychotherapy of anger implies the identification of the feelings which we are confronting when we are angry, the healing of emotional wounds and solving yet unsolved issues from the past.

BIBLIOGRAPHY

- Cornuțiu, G. (2003) – *Breviar de psihiatrie*, Editura Imprimeriei de Vest, Oradea.
- Franz, A. (2008) – *Medicina psihosomatică*, Editura TREI, București.
- Goldbacher, Edie M.; Mattheus, Karen A. (2007) – *Risk is Related to Psychological Characteristics of the Metabolic Syndrome?* – *Ann Med. Behave* 2007, 34(3): 240-252.
- Golomb, B.A.; Kane, T.; Dimsdale, J.E. (1997) – *Severe irritability associated with statin cholesterol – lowering drugs*, *QJ Med* 2004; 97:229-235 doi: 10.1093/qjmed/hch035.
- Iamandescu, I.B. (1997) – *Psihologie Medicală*, Editura Infomedica, București.
- Iamandescu, I.B. (1999) – *Elemente de Psihosomatică Generală și Aplicată*, Editura Infomedica, București.
- Luban-Plozza, B.; Pöldinger, W.; Kröger, F. (1996) – *Boli psihosomatice în practica medicală*, Editura Medicală, București.
- Mihăescu, V. (1996) – *Psihoterapie și psihosomatică*, Editura Polirom, Iași.
- Sutin, A.R.; Costa, P.T. jr.; Uda, M.; Ferrucci, L.; Schlessinger, D.; Terracciano, A. (2010) – *Personality and metabolic syndrome*, *AGE*(2010) 32:513-519
Doi 10.1007/s 11357-010-9153-9.
- Wilson, D.L.; Davidson, K.W.; Barksdale, C.; Black, B. (2001) – *U-Curved Relation Between Total Fasting Serum Cholesterol and Hostility*, *International Journal of Behavioral Medicine* 8(4), 282-292.