

## Stress-overcoming behaviour of women with minor cardiac abnormalities

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### Abstract

The purpose of this research was to determine stress-overcoming behaviour of women with minor cardiac abnormalities considering abnormality intensity. With the help of Toronto Alexithymia Scale, E. Heim's system and S. Subbotin's test 122 young women with different manifestation rates of the heart connective tissue dysplasia (minimal – basic group and moderate - comparison group) were examined (average age  $-21,46 \pm 2,12$  years). Significant dominance of adaptive coping strategies in all spheres was revealed when studying of stress-overcoming behaviour of healthy women with minor cardiac abnormalities of minimal intensity. Women of the comparison group used maladaptive coping-strategies in emotional and behavioural spheres more often comparing with clinically healthy women of the basic group. Significantly lower level of the stress resistance and higher alexithymia level were determined in the observed group with minor cardiac abnormalities of moderate intensity which has chosen maladaptive emotional and behavioural coping-strategies. The results are appropriate to consider for personalized arrangements for prevention of cardiovascular complications in patients with heart connective tissue dysplasia syndrome.

**Keywords:** minor cardiac abnormalities, stress-overcoming behaviour, alexithymia, stress resistance.

### Introduction

Minor cardiac abnormalities (MCA) is a group of conditions caused by congenital structural meta-

bolic disorders of the connective tissue (Belozyerov, & Dolgikh, 1992, Trisvetova, & Bova, 2002, McNeil *et al.*, 1993). As all other minor abnormalities of development, dysplasia, MCA regard to prenatal and postnatal ontogenesis and are considered as displaying of changeability which usually doesn't relate to organ functioning disorders (Mitkova, & Sandrikova, 1998). Alongside with intrinsic MCA manifestations clinical picture of connective tissue dysplasia syndrome is also defined by neuropsychic activity disorders, which usually appear among such patients especially under external stress factors (Korovina, 2006, Klemenov, 2008, Mutafyan, 2005).

The most widespread MCA manifestation is idiopathic mitral valve prolapse (MVP). Females, especially at the age of 20-29 prevail among patients with MVP (Zemtsovsky, 2000). Generalized mode of connective tissue damage, which involves reproductive system into pathologic process combined with increasing epidemiological MCA ranges in development of the different complications, determines scientific and practical interest of this specific problem.

Only single researches are related to the studying of specificity of women with MCA psychological profile whereas their results are discordant and do not allow evaluating the very nature and extent of personality changes in full measure (Gnusayev, 1995). Besides no researches devoted to stress-overcoming behaviour and alexithymia level have ever been conducted before among young women with MCA.

Work objective: determination of the stress-overcoming behaviour for females with MCA of minimal and moderate intensity.

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## Materials and methods

On the base of the Municipal Health Care Institution City clinical hospital №2 n.a. V.I. Razu-movsky and Saratov State Health Care Institution «Regional cardiac surgery center» 122 females at the age of 19-28 (average age –  $21,46 \pm 2,12$  years) were examined. All observed patients were divided into two groups that is the basic group of 57 females with MCA of minimal intensity and the comparison group of 65 females with MCA of moderate intensity.

1D and 2D echocardiographic methods as well as doppler echocardiography via «PHILIPS iE 33» (Holland), «VIVID 3» (USA) routinely were used for cardiac valve-chordal assessment in patients. S.F. Gnusayev classification was applied for MCA diagnosticating in ultrasound of the heart (Gnusayev, 1995).

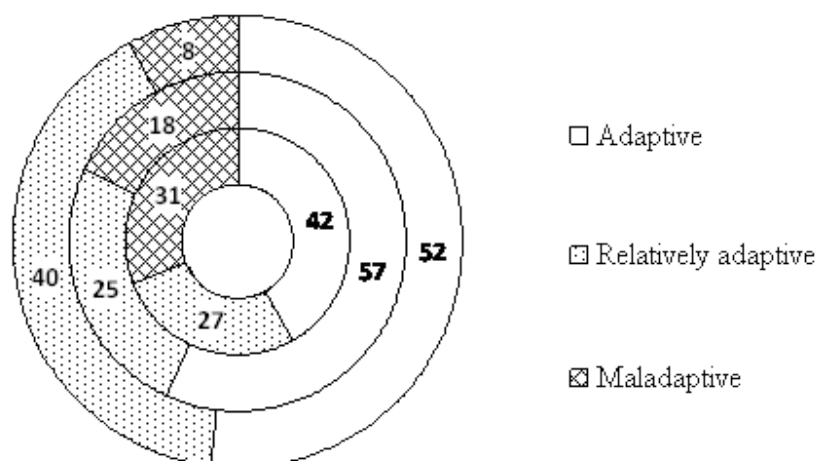
E. Heim methods, which allow to consider cog-

nitive, emotional and behavioural coping components were used for study of personal reaction type, besides S. Subbotin's diagnostic test was used for defining of resistance to stress, which allows to determine not only contextual stress resistance, but also constant component of personal trait complex. Modified in V.M. Behterev SRI Toronto Alexithymia Scale is applied for alexithymia rate estimation.

Obtained results were processed with application program package «Statistika 6,0».

## Results

Figure 1 displays coping-behavior formation results according to E. Heim test among females with MCA of minimal intensity taking into consideration differentiation in all spheres (cognitive, emotional, behavioural).



**Figure 1. Basic group average indices of the coping-strategies by E. Heim's system (%). Note: internal circle - cognitive sphere, middle circle – emotional sphere, external circle – behavioural sphere.**

As is seen from findings, presented in Figure 1, adaptive reactions (42%) highly prevailed among the cognitive strategies in this group, whereas maladaptive accounted for less than one-third.

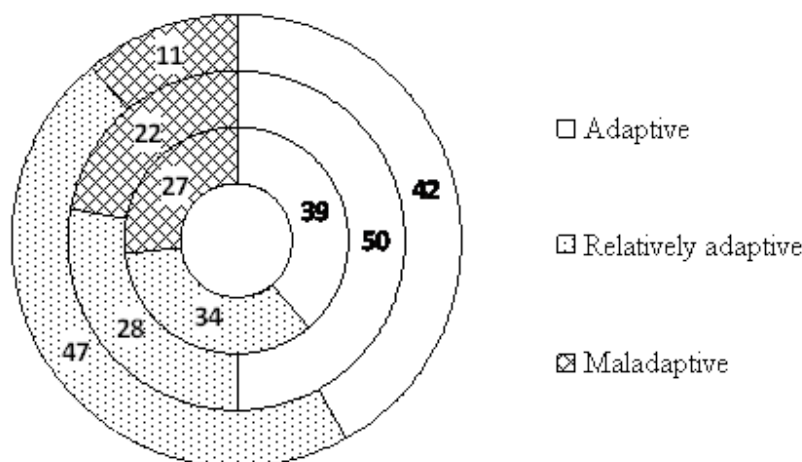
Adaptive coping-strategies prevailed in emotional sphere more than in half cases among women with MCA of minimal intensity, whereas adaptive forms of defensive-compensatory behaviour significantly prevailed in behavioral coping-strategies (figure 1).

No statistically significant differences for the coping-strategies formation in the basic group patients considering positive or negative techniques

choice in all spheres have been obtained by S. Subbotin and TAS tests in the process of analyzing.

Results of the behaviour formation by E. Heim test in comparison group including sphere differentiation (cognitive, emotional, behavioural) are shown in figure 2.

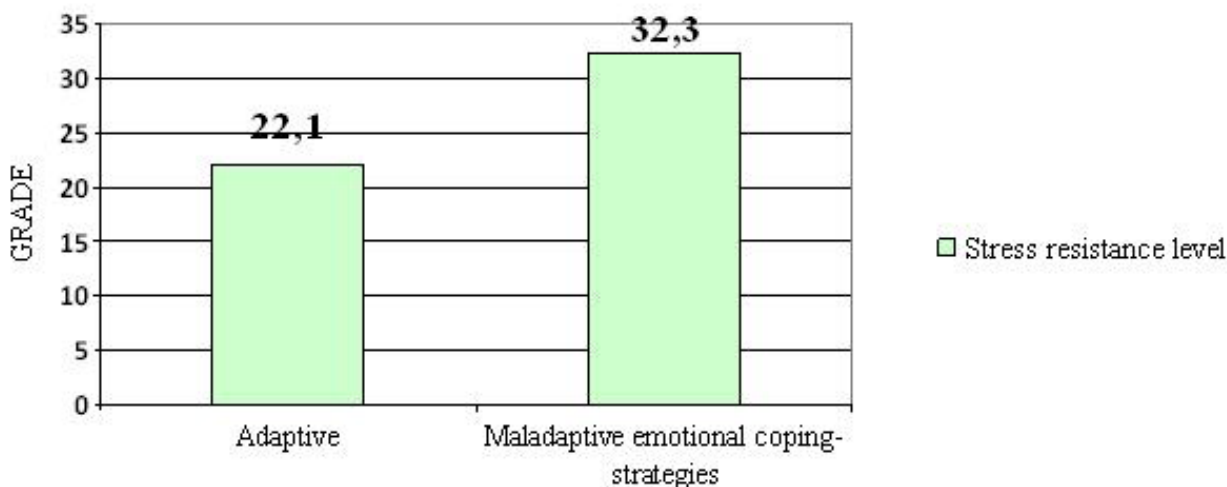
Constructive reaction (39%) is prevalent in the coping-cognitions structure of women with a moderate MCA manifestation rate. There are no statistically significant differences in stress resistance and alexithymia indices in patients of comparison group using positive and negative cognitive coping-reactions (figure 2).



**Figure 2. Comparison group average indices of the coping-strategies by E. Heim's system (%). Note: internal circle - cognitive sphere, middle circle – emotional sphere, external circle – behavioural sphere.**

When analyzing emotional coping -strategies of women with MCA of moderate intensity, it was found out that half of females of this group preferred adaptive reactions (figure 2).

Stress resistance indices of the comparison group patients depending on choice of adaptive or maladaptive emotional coping- strategies are shown in figure 3



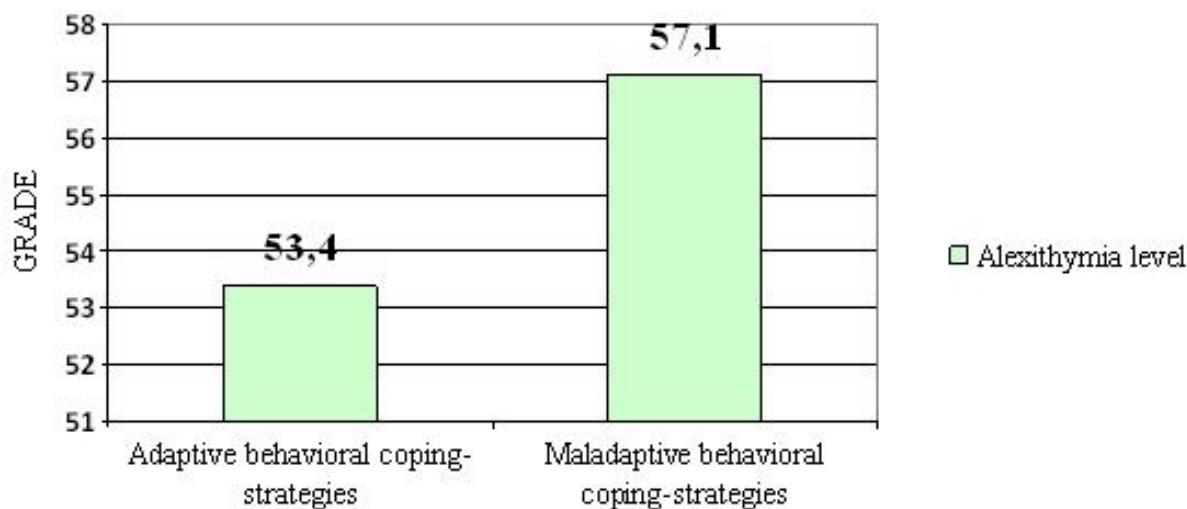
**Figure 3. Stress resistance indices of women with minor MCA manifestations rate depending on choice of adaptive or maladaptive emotional coping- strategies.**

As it is seen from data presented in Figure 3, statistically significant increasing of S. Subbotin test indices is determined in females of the comparison group using maladaptive emotional coping-strategies compare with females using adaptive coping-strategies.

In analyzing behavioural coping-strategies of young

women with MCA of moderate intensity (figure 2) it is obtained that adaptive coping reactions dominate over maladaptive forms (42% and 11%, respectively).

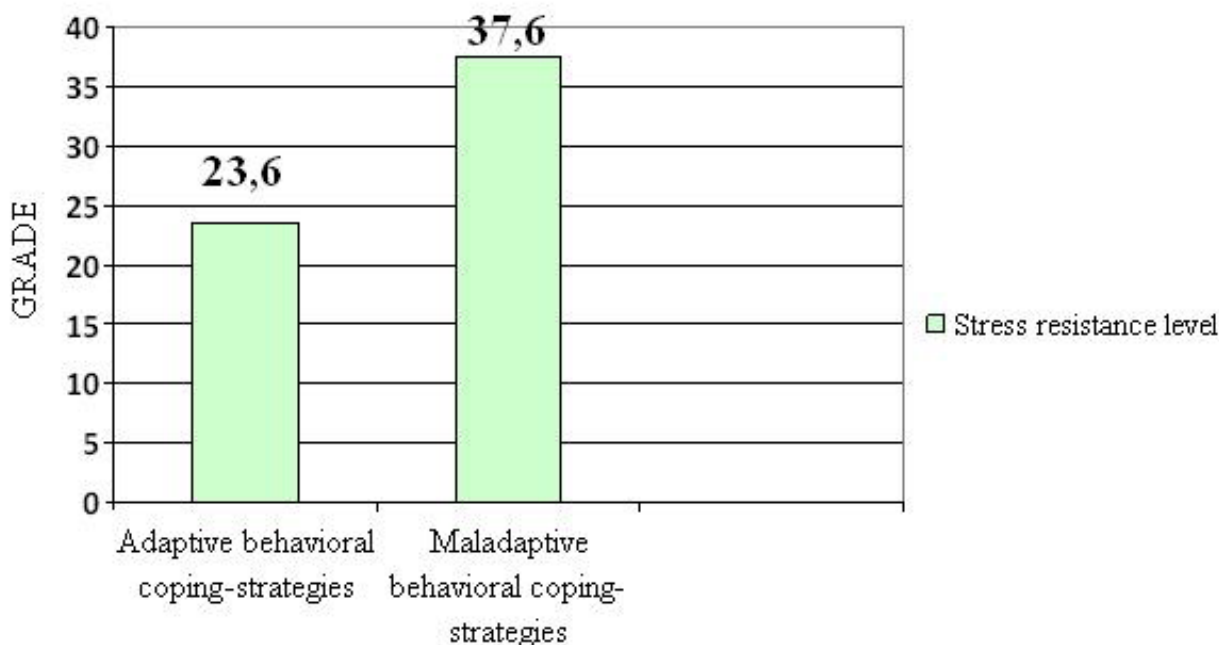
Levels of alexithymia in females from the comparison group depending on the choice of adaptive and maladaptive behavioural coping styles, are displayed in Figure 4.



**Figure 4. Alexithymia level indices of women with MCA of moderate intensity depending on choice of adaptive or maladaptive behavioural coping-strategies.**

As it is seen from findings, presented in Figure 4, high alexithymia level is marked among women with MCA of moderate intensity using maladaptive behavioural coping-strategies.

Stress resistance indices for females of comparison group depending on choice of adaptive or maladaptive behavioural coping-strategies are illustrated in Figure 5.



**Figure 5. Stress resistance indices of women with MCA of moderate intensity depending on choice of adaptive or maladaptive behavioural coping-strategies.**

As is seen from findings, presented in Fig.5, lower Stress resistance level is noted among women with MCA of moderate intensity using maladaptive

behavioural coping-strategies.

Obtained results were statistically valid (accuracy $\leq$ 0,05).

## Discussion

During the studying of stress-overcoming behaviour among healthy women with MCA of minimal intensity it was the high prevalence of adaptive coping-strategies in all spheres that came under notice.

Women with MCA of moderate intensity used maladaptive coping-strategies in emotional and behavioural spheres significantly more often than clinically healthy females of the basic group.

In coping behaviour structure of women with MCA of moderate intensity adaptive coping-strategies prevailing occurs in all spheres at first glance, but differences in emotional and behavioural spheres were obtained during comparison of the stress-overcoming behaviour in patients depending on choice of adaptive or maladaptive behavioural coping-strategies. Patients with maladaptive emotional coping-strategies were characterized by reduced stress resistance level. According to the TAS test data women with maladaptive coping-strategies in emotional and behavioural spheres with moderate MCA manifestations rate experienced difficulties which are connected with an attempt to symbolize something, problem in describing of own feelings, sensations, emotions oneself, a scarcity of fantasies and imagination, imagery and tendency to replace emotional perception of events and situations by logical concepts.

Since alexithymia and reduced resistance to stress agents are recognized risk factors for cardiovascular complications, a set of arrangements for secondary prevention in patients with MAC is appropriate to include methods of psychological correction of the changes, and with the use of an individual approach.

## Conclusions

Women of comparison group in contrast with basic group, essentially more often used maladaptive coping-strategies in avoidant compensatory behaviour of emotional and behavioural spheres.

Significantly lower level of the resistance to

stress and higher alexithymia level is determined in observed females with MCA of moderate intensity using maladaptive emotional and behavioural coping-strategies in comparison with patients using adaptive coping-strategies.

The results are useful to consider when conducting personalized prevention of cardiovascular complications for the patients with connective tissue dysplasia syndrome of heart.

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