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CAUSAL NETWORKS OF ATTACHMENT STYLE AND ORTHOREXIA NERVOSA

КАУЗАЛЬНІ МЕРЕЖІ СТИЛЮ ПРИВ'ЯЗАНОСТІ ТА НЕРВОВОЇ ОРТОРЕКСІЇ

The article presents a study of the influence of attachment style on orthorexia nervosa. The design is structured as follows: the exogenous variable of attachment styles influences the object of study in the form of the endogenous variable of orthorexia nervosa, which was studied through two levels of mediating interaction effects – through the influence of schema-modes on types of eating behavior, which then influence orthorexia nervosa. Orthorexia nervosa is considered through the prism of orthorexic modalities – types of orthorexia based on the principle of attitude towards the formation of eating habits (exclusion, accentuation, balancing, and periodization). In addition to representatives of orthorexic modality groups, respondents with other dietary needs (control groups) were included for comparison: those who practice fasting as part of any religious tradition, follow a therapeutic diet due to illness, use weight loss drugs, or do not follow any dietary restrictions. The study sample consisted of n = 467 respondents. Using structural equation modeling method (SEM), causal networks were constructed for each group in relation to their attachment style and type of eating behavior. Schema-modes were used as an intermediate mediating component for constructing regression equations. The results demonstrate that disorganized and avoidant attachment styles, as well as dysfunctional schema-modes, are key predictors of orthorexic behavior. They interact with types of eating behavior, forming complex mediating relationships that differ depending on orthorexic modality. Thus, it was found that orthorexia nervosa has a multifactorial nature, with emotional and cognitive factors formed as a result of attachment experiences and early maladaptive schemas playing a leading role.

Key words: orthorexia nervosa, attachment style, schema-modes, types of eating behavior, causal networks, eating disorder.

У статті представлене дослідження впливу стилю прив'язаності на нервову орторексію. Дизайн побудований наступним чином: екзогенна змінна стилів прив'язаності впливає на об'єкт дослідження у вигляді ендогенної змінної нервової орторексії, що вивчався через два рівні ефектів медіаційної взаємодії – шляхом впливу схема-режимів на типи харчової поведінки, що потім впливають на нервову орторексію. Нервова орторексія розглядається через призму орторексичних модальностей – різновидів орторексії за принципом ставлення до формування способу харчування (виключення, акцтентування, балансування та періодизації). Окрім представників груп орторексичних модальностей, для порівняння, було долучено респондентів із іншими харчовими потребами (груп контролю): тих, хто практикує піст у рамках будь-якої релігійної традиції, дотримується лікувальної дієти через хворобу, вживає препарати для схуднення, або не дотримується жодних обмежень у харчуванні. Вибірку дослідження склали n = 467 респондентів. За допомогою методу моделювання структурними рівняннями (SEM) було побудовано каузальні мережі для кожної із груп відносно їх стилю прив'язаності та типу харчової поведінки. У якості проміжної медіаційної компоненти для побудови регресійних рівнянь, використовувалися схема-режими. Отримані результати демонструють, що дезорганізований та уникаючий стилі прив'язаності, а також дисфункціональні схема-режими є ключовими предикторами орторексичної поведінки. Вони взаємодіють із типами харчової поведінки, утворюючи складні медіаційні зв'язки, які відрізняються залежно від орторексичної модальності. Таким чином, було встановлено, що нервова орторексія має мультифакторну природу, де провідну роль відіграють емоційно-когнітивні чинники, сформовані внаслідок досвіду прив'язаності та ранніх дезадаптивних схем.

Ключові слова: нервова орторексія, стиль прив'язаності, схема-режими, типи харчової поведінки, каузальні мережі, розлад харчової поведінки.

Introduction. The purpose of this article is to study the influence of attachment style on orthorexia nervosa. Orthorexia nervosa is becoming increasingly relevant and widespread in many countries around the world among representatives of different ethnic communities [6]. The novelty of this study lies in the fact that orthorexia nervosa is considered through the prism of orthorexic modalities [4] – types of orthorexia based on the principle of attitude towards the formation of a diet (exclusion of certain foods from the diet (meat, sugar, etc.)) in the form of exclusion modality; modality of emphasis (adding specific food groups to the diet – emphasis on grains (paleo diet), proteins (protein diet), fats (keto diet), etc.); balancing modality (individual calculation of macronutrients and their proportions for weight gain or athletic "cutting"); periodization modality (intermittent fasting, other types of fasting). In addition to representatives of orthorexic modalities, respondents with other dietary needs (control groups) were included for comparison: those who practice fasting as part of any religious tradition, follow a therapeutic diet due to illness, use weight loss drugs, or do not follow any dietary restrictions.

Important scientific and practical tasks for today: to identify the components of the construct of orthorexia nervosa, to develop clear diagnostic criteria and psychometric tools for its inclusion in the list of mental disorders of eating behavior in the future [2]. Therefore, this article contributes to the deepening of knowledge about the etiology of orthorexia nervosa through the

prism of attachment styles and eating behavior types, continuing a series of studies in this area that focus on the search for the influence of adverse childhood experience on the formation of orthorexia nervosa, provided in dissertation thesis. This helps to complement, expand, and deepen global research on orthorexia nervosa [3], namely its etiology, by creating a more complex design using the causal modeling method.

Methods and organization. N = 467 respondents participated in our study. The sample consisted of representatives of various orthorexic modalities and a control groups. The following psychodiagnostic instruments were used: the "ASQ-22 Attachment Style Questionnaire" adapted in ukrainian language by Kuchyna V. [5]; J. Young's "Schema Mode Inventory" (SMI) adapted in ukrainian language by Bolshakova A. [1]; "Dutch Eating Behavior Questionnaire (DEBQ)" by S. Braet and T. Van Strien [7].

Using structural equation modeling (SEM), causal networks were constructed for each group in relation to their attachment style and type of eating behavior. Schema-modes were used as an intermediate mediating component for constructing regression equations.

Results and discussion. The design of this study is as follows: the exogenous variable of attachment styles affects the object of study in the form of the endogenous variable of orthorexia nervosa, which was studied through two levels of mediating interaction effects – through the influence of schema-modes on types of eating behavior, which then affect orthorexia nervosa.

First, the reliability of the attachment style questionnaire (ASQ-22 in ukrainian language) scales was tested on our sample to approve further work with this instrument and formulate more in-depth conclusions. All ASQ-22 scales received good reliability scores. The secure style scale received the following reliability coefficients: Cronbach's α (.82) and McDonald's Ω (.83), the avoidant style scale: Cronbach's α (.83) and McDonald's Ω (.84), the anxious style scale: Cronbach's α (.82) and McDonald's Ω (.82), and the disorganized attachment style scale: Cronbach's α (.83) and McDonald's Ω (.84).

The attachment style questionnaire ASQ-22 allows to determine the dominant attachment style as a percentage, based on 100%. In total, the ASQ-22 tool allows to measure four basic attachment styles: secure, avoidant, anxious, and disorganized.

The ASQ-22 reference values allow you to assess the degree of development of a particular attachment style as a percentage, based on a maximum possible 100% for each scale.

The arithmetic means (in percent) for all study groups are presented in tab. 1. They show that in the group of representatives of orthorexic modality, anxious attachment style dominates, followed by disorganized attachment style. Representatives of the exclusion modality have avoidant and disorganized attachment styles. The group of representatives of the orthorexic balancing modality has a more disorganized attachment style, but anxious and avoidant styles are also developed to almost the same degree. Representatives of the orthorexic periodization modality are characterized by an avoidant attachment style. For the control groups: a secure attachment style is found in the group of respondents who practice fasting on religious grounds; those who follow a therapeutic diet due to illness have an anxious style and a secure style in second place; those who prefer weight loss drugs have an anxious style in first place and a secure style in second place; further, those who eat whatever they want without thinking, those who intuitively feel what to eat, and those for whom none of the ten options are suitable have a dominant avoidant attachment style. Using the Kruskal-Wallis test for unpaired intergroup comparisons, it was found that the groups differed statistically significantly in almost all patterns for orthorexia nervosa, including: vulnerable child, angry child, undisciplined child, impulsive child, punishing parent, demanding father, submissive surrender, detached complecency, happy child, and healthy adult.

Next, the data obtained was analyzed in greater depth using structural equation modeling with mediation effects, and path diagrams of causal networks were constructed for each of the groups studied, both orthorexic modalities and controls.

For the group of representatives of the orthorexic modality of exclusion, the causal network (Figure 1) included the most strongly working categorical predictors (schema-modes, attachment styles, and types of eating behavior) for the dependent variable of orthorexia nervosa. Representatives of orthorexic modality are characterized by the following most developed schema-modes, such as: demanding parent, self-aggrandizement, and to a lesser extent: submissive surrender, punishing parent, vulnerable, angry child; Their characteristic eating behavior is restrictive and emotion-driven; attachment styles: disorganized and anxious. Model quality and fit indices: RMSEA = .00; SRMR = .02; CFI = .98; TLI = .88; $\chi 2$ (p) = .11. Regression effects: restrictive eating behavior on orthorexia R^2 = -.25, disorganized attachment type on orthorexia R^2 = -.37, anxious attachment type on orthorexia R^2 = .25, disorganized attachment style on restrictive eating behavior R^2 = .3, anxious attachment style on restrictive eating behavior R^2 = . 28, the influence of disorganized attachment style on demanding parent schema R^2 mode R^2 = .72 and anxious attachment style on demanding parent schema mode = -.19, the influence of disorganized attachment style on self-aggrandizing schema mode R^2 = .72. When interpreting the model diagram for representatives of the exclusion modality group, attention should first be paid to the main path to the first intersection point – from anxious and disorganized attachment styles to restrictive eating behaviors and from demanding parent and self-aggrandizing schema-modes to the same. Thus, directly, the disorganized attachment style influences the increase in orthorexic tendencies, but there is also a more complex path – involving two steps of mediating iterations: when the disorganized attachment style influences the demanding father and self-aggrandizing schema-mode, then the demanding father and self-aggrandizement schema-modes influence restrictive eating behavior,

Table 1

Average values in subsamples by orthorexic modality and control groups by attachment style

Groups	Secure	Anxious	Avoiding	Disorganized
n_1 – exclusion modality (vegetarianism / veganism / raw food diet / Ayurvedic diet / gluten-free / sugar-free) (n = 50)	44.1	84.2	57.1	82.7
n_2 – modality of emphasis (keto diet / paleo diet / protein diet) (n = 52)	41.4	39.8	87.1	82.9
n_3 – balancing modality (proper nutrition: proteins-fats-carbohydrates) or specialized sports diet “weight gain” or “fat loss”) (n = 40)	52.6	69.6	62.6	69.9
n_4 – modality of periodization (intermittent fasting / other fasting system) (n = 48)	35.8	28.4	88.0	84.0
n_5 – practice fasting (of any religious tradition: Christian, Vedic, Islamic, or other) (n = 37)	79.1	71.5	35.1	34.7
n_6 – follow a therapeutic diet (due to illness, allergies, or other reasons) (n = 46)	81.1	82.4	44.7	41.7
n_7 – take medications for weight loss (n = 40)	81.9	84.1	38.6	37.3
n_8 – eat without restrictions (n – 60)	67.3	67.5	68.7	58.1
n_9 – eat intuitively (n = 74)	66.3	58.7	75.2	59.5
n_{10} – none of the options are suitable (n = 22)	64.0	68.6	74.5	63.6

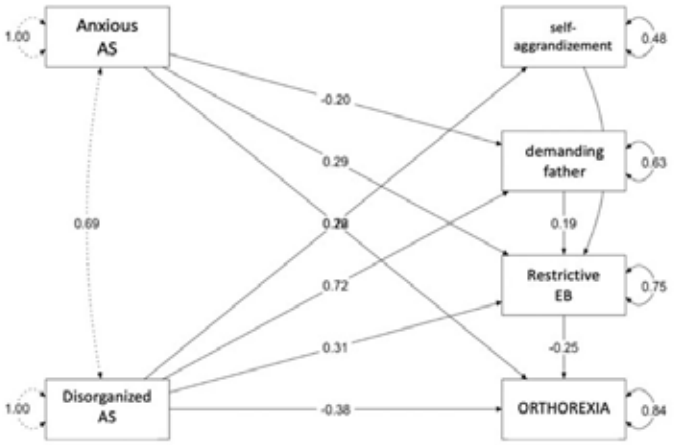

Fig. 1. Causal network for orthorexic exclusion modality in relation to attachment styles and schema-modes

which in turn influences the intensification of orthorexia in the group of representatives of the orthorexic modality of exclusion. The strength of the mediating interaction effect is estimated at 25% in this group, with all statistically significant iterations.

Representatives of orthorexic modality of emphasis are characterized by: patterns of an undisciplined child, a demanding father and an attacking defender, as well as avoidant and disorganized attachment styles and restrictive, emotional and external eating behaviors. The causal network for their group is shown in Figure 2. Model fit indices: RMSEA = .00; SRMR = .06; CFI = 1; TLI = 1; $\chi 2$ (p) = .3. Regression effects: external eating behavior on orthorexia R^2 = -.14; disorganized attachment style on external eating behavior R^2 = .23; disorganized attachment style on orthorexia R^2 = -.1;

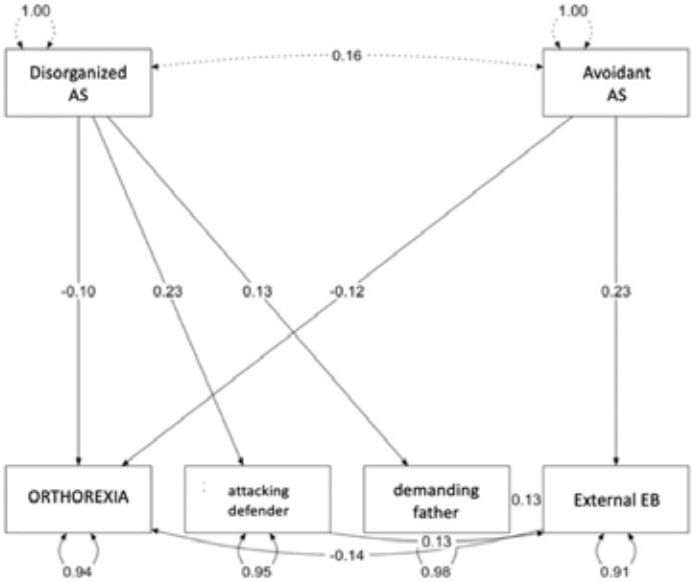

Fig. 2. Causal network for orthorexic modality of emphasis in relation to attachment styles and schema-modes

avoidant attachment style on orthorexia R^2 = -.12; disorganized attachment style on demanding parent R^2 = .13; avoidant attachment style on external eating behavior R^2 = .22; demanding parent on external eating behavior R^2 = .13; attacking defender to external eating behavior R^2 = .12. Thus, it can be seen that in the group of representatives of orthorexic modality, orthorexic tendencies are realized through a first-order mediating variable in the form of external eating behavior, which is influenced by second-order mediating variables in the form of schema-modes of the attacking defender and the demanding father, together with an avoidant attachment style, while these schema-modes are reinforced by a disorganized attachment style. Directly in this group, orthorexia is reinforced by disorganized and avoidant attachment styles.

The orthorexic modality of balancing is characterized by the following schema-modes: an angry, impulsive, and undisciplined child; a punishing and demanding father; and submissive surrender. Attachment styles: disorganized, anxious, and avoidant. Types of eating behavior: restrictive, emotional, and external. The causal network for their group is shown in Figure 3. Model fit indices: RMSEA = .08; SRMR = .08; CFI = 0.61; TLI = 0.82; $\chi 2$ (p) = .06. Regression effects: disorganized attachment style on orthorexia R^2 = -.24; undisciplined child on orthorexia R^2 = -.23; angry child on orthorexia R^2 = -.12; disorganized attachment style on angry child R^2 = .80, on undisciplined child R^2 = .75, on impulsive child R^2 = .76. Interpreting the model, it shows that in the group of representatives of orthorexic modality, the increase in orthorexic tendencies can occur in two ways: directly – through the influence of a disorganized attachment style on it, and mediated – through the influence of a disorganized attachment style on the schema-modes of an angry, undisciplined, and impulsive child, which then influence the increase in orthorexic tendencies in this group.

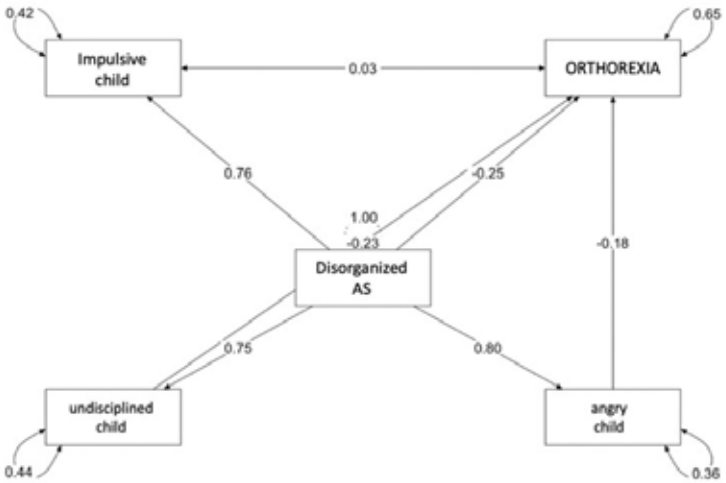

Fig. 3. Causal network for orthorexic balancing modality in relation to attachment styles and schema-modes

The orthorexic modality of periodization is characterized by the following patterns: vulnerable and impulsive child, punishing parent, and submissive surrender. Attachment styles: avoidant. Types of eating behavior: restrictive, emotional, and external. The causal network for their group is shown in Figure 4. Model fit indices: RMSEA = .08; SRMR = .08; CFI = 0.72; TLI = 0.65; $\chi 2$ (p) = .06. Regression effects: avoidant attachment style on the schema-mode of submissive surrender R^2 = .31, on the vulnerable child R^2 = .54, on the punitive parent R^2 = .34, on the impulsive child R^2 = .36; schema-mode of submissive surrender on orthorexia R^2 = -.34 and impulsive child on orthorexia R^2 = .52. Thus, from the model for representatives of orthorexic modality of periodization, it can be seen that the intensification of nervous orthorexia occurs in them only through the schema-mode of submissive surrender, neither directly nor indirectly; attachment styles or type of eating behavior do not affect nervous orthorexia in this group.

Representatives of one of the control groups, which included respondents who practice fasting, are characterized by the following schema-modes: defender, attacker, and self-aggrandizement. However, it should be noted that all schema-modes are within the normal range. The most common attachment style among them is secure. They are characterized by restrictive, emotional, and external eating behaviors.

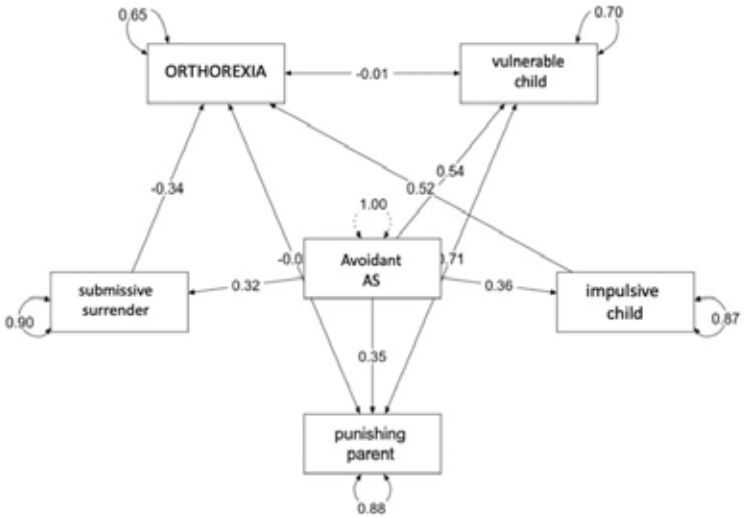

Fig. 4. Causal network for orthorexic modality periodization in relation to attachment styles and schema-modes

The causal network for their group is presented in Figure 5. Model quality and fit indices: RMSEA = .09; SRMR = .09; CFI = 0.92; TLI = 0.5; $\chi 2$ (p) = .09. Regression effects: secure attachment style on restrictive eating behavior R^2 = .2, self-enhancement schema-mode on restrictive eating behavior R^2 = .19, defender schema-mode attacking restrictive eating behavior R^2 = .34; secure attachment style on external eating behavior R^2 = -.18, attacking defender on external eatingbehavior R^2 = -.43; secure attachment style on self-anhancement R^2 = .31; defender attacking orthorexia R^2 = .4; self-anhancement attacking orthorexia R^2 = -.23; secure attachment style

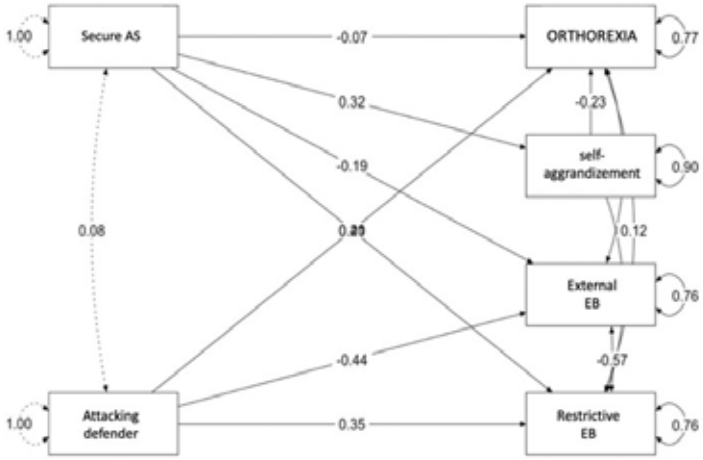

Fig. 5. Causal network for practitioners of fasting in relation to attachment styles and schema-modes

attacking orthorexia R^2 = -.07. Thus, from the model for respondents who claim to practice fasting, it can be seen that only the self-enhancement schema-mode increases their orthorexia nervosa, while the attacking defender schema-mode weakens orthorexic tendencies in this group, and the secure attachment style does not directly affect orthorexia in this group.

The group of respondents who indicated that they follow a therapeutic diet due to illness have the following patterns: healthy adult and defender who stands aside. For the most part, they have an anxious attachment style, followed by a secure one. This group is characterized by restrictive eating behavior.

The causal network for their group is presented in Figure 6. Model fit indices: RMSEA = .08; SRMR = .04; CFI = 0.85; TLI = 0.32; $\chi 2$ (p) = .05. Regression effects: secure attachment style on orthorexia R^2 = -.21, defender who stands aside on orthorexia R^2 = -.41; healthy adult on orthorexia R^2 = .42; restrictive eating behavior on orthorexia R^2 = .18; secure attachment on avoidant attachment style R^2 = .55; anxious attachment on avoidant attachment R^2 = .35; secure attachment on healthy adult R^2 = .7; anxious attachment style on healthy adult R^2 = .21; healthy adult on restrictive eating behavior R^2 = .6; secure attachment style on restrictive eating behavior R^2 = .13; anxious on restrictive R^2 = .27. Thus, from the causal model for representatives of the group of those who follow a therapeutic diet, it can be seen that the defender who stands aside schema-mode and secure attachment style influence the intensification of orthorexic behavior, while anxious and secure attachment style influence the intensification of the attacking schema-mode. Another pathway of influence is that a secure attachment style influences the reinforcement of the healthy adult schema-mode, which in turn influences the reduction of orthorexic tendencies in this group.

The subjects who use weight loss drugs have the most common patterns: happy child and detached

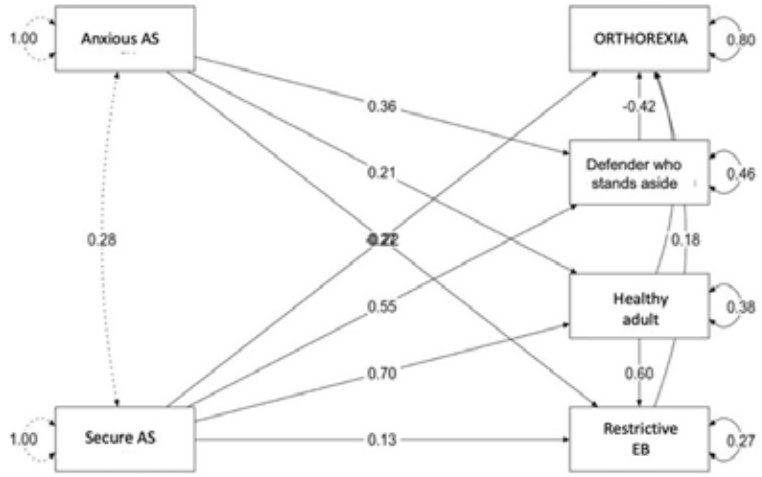

Fig. 6. Causal network for those who follow a therapeutic diet in relation to attachment styles and schema-modes

complecency. Among their attachment styles, anxious is in first place and secure is in second. Emotional eating is most common in this group eating beviour. The causal network for their group is shown in Figure 7. Model fit indices: RMSEA = .01; SRMR = .01; CFI = 1; TLI = 1; $\chi 2$ (p) = .98. Regression effects: emotional eating behavior on orthorexia R^2 = -.23; detached complecency on orthorexia R^2 = .14; secure attachment style on emotional eating behavior R^2 = .29; detached complecancy on emotional eating behavior R^2 = .45;

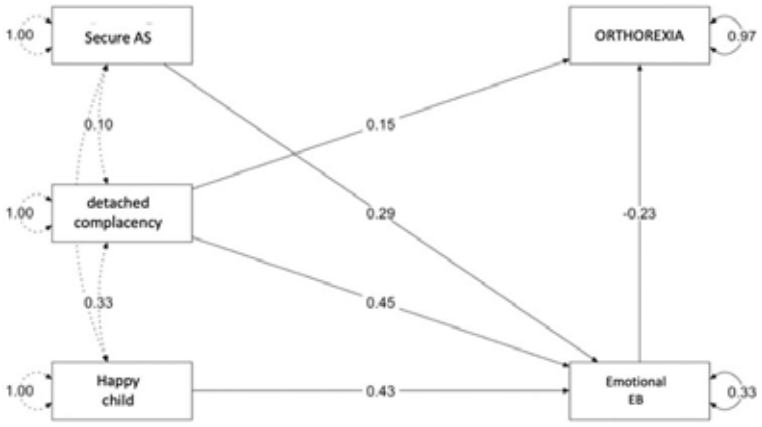

Fig. 7. Causal network for those who use weight loss drugs in relation to attachment styles and schema-modes

happy child on emotional eating behavior R^2 = .43. Thus, from the causal model for representatives of the group who use weight loss drugs, although they do not have orthorexia nervosa according to the mean for the group, it is characteristic that their orthorexic behavior may be increased by emotional eating behavior, which, in turn, is influenced by secure eating behavior and the patterns of detached complecency and happy child.

The group of respondents without dietary restrictions has common schema-modes: detached complecancy, happy child, and healthy adult. All schema-modes (as in the other control groups) are in the range of moderate manifestation of the trait and are not exceeded. They are characterized by an avoidant attachment style. Their eating behavior is mostly emotional and external. The causal network for their group is shown in Figure 8. Model fit indices: RMSEA = .08; SRMR = .08; CFI = 0.54; TLI = 0.67; $\chi 2$ (p) = .06. Regression effects: avoidant attachment style on orthorexia R^2 = -.19, on detached comllecency R^2 = -.48, on happy child R^2 = -.51, on healthy adult R^2 = -.59; detached complecency on orthorexia R^2 = .24, happy child on orthorexia R^2 = .15.

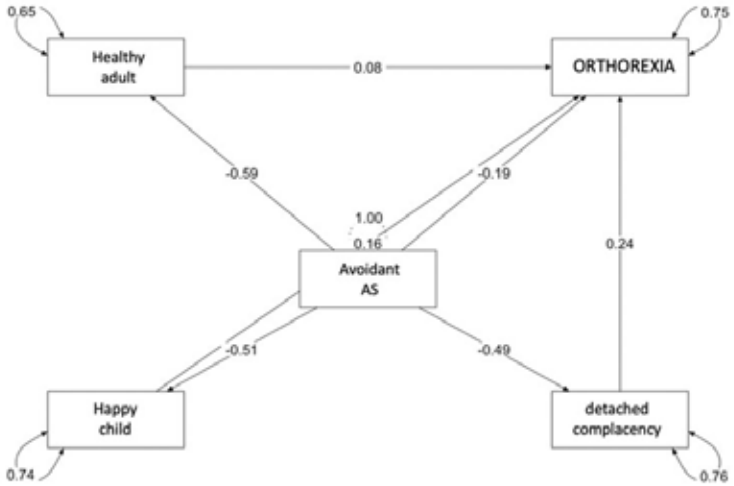

Fig. 8. Causal network for the group without dietary restrictions regarding attachment styles and schema-modes

Thus, from the causal model for respondents who claim to have no dietary restrictions, it can be seen that an increase in orthorexic tendencies for them occurs through the influence of an avoidant attachment style directly; in other ways, through schema-modes, there is no influence on the exacerbation of orthorexia. Also, the avoidant attachment style in their group affects the decrease in the healthy adult, happy child, and detached complecensy schema-modes.

Representatives of the group who consider themselves to be intuitive eaters have characteristic patterns: submissive surrender, punishing parent, angry child. Attachment style: avoidant. Eating behavior: restrictive, emotional and external. The causal network for their group is shown in Figure 9. Model fit indices: RMSEA = .08; SRMR = .15; CFI = 0.6; TLI = 0.1; $\chi 2$ (p) = .06. Regression effects: submissive surrender on orthorexia R^2 = -.28, punishing father on orthorexia R^2 = -.18, angry child on orthorexia R^2 = . 13, avoidant attachment style on orthorexia R^2 = -.12, restrictive eating behavior on orthorexia R^2 = -.19, external eating behavior on orthorexia R^2 = .15; angry child on

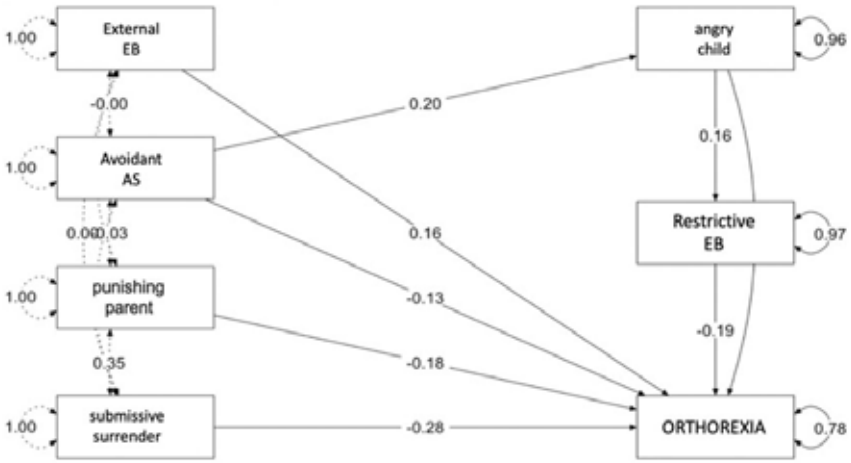

Fig. 9. Causal network for those who eat intuitively in relation to attachment styles and schema-modes

restrictive eating behavior R^2 = .16; avoidant attachment style on angry child's schema-mode R^2 = .2. Interpreting the causal model for representatives of the group of respondents who claim to eat intuitively, we can see that they have two ways of implementing orthorexic behavior. First, its intensification is directly influenced by the avoidant attachment style, the punishing parent and submissive surrender schema-modes. The second way of intensifying orthorexic tendencies in this group is through the action of the angry child schema-mode (which is reinforced by the avoidant attachment style) on restrictive eating behavior, which then contributes to the intensification of orthorexia.

The group of those who did not find any of the dietary options offered in the questionnaire suitable have characteristic patterns in the form of: punishing father, angry child, and self-aggrandizement. They mostly have an avoidant attachment style. Their typical eating behavior is usually restrictive, emotional, and external. The causal network for their group is shown in Figure 10. Model fit indices: RMSEA = .13; SRMR = .11; CFI = 0.48; TLI = 0.84; $\chi 2$ (p) = .22. Regression effects: punishing father on orthorexia R^2 = -.19, angry child on orthorexia R^2 = .3, emotional eating on orthorexia R^2 = -.23, avoidant attachment style on punishing parent R^2 = -.2, on angry child R^2 = .41, restrictive eating behavior R^2 = -.4, emotional eating behavior R^2 = .24, external eating behavior R^2 = .11. Interpreting the causal model for the group of respondents who did not find any of the dietary options in the questionnaire suitable, it can be noted that their orthorexic tendencies are realized through the punishing parent schema-mode and through emotional eating behavior, which is reinforced by an avoidant attachment style.

Discussing the results of this study, the dominant attachment styles for all study groups were first established, and their basic patterns and types of eating behavior were identified (the groups differed statistically significantly on almost all criteria). Then, their average profiles on these points were evaluated by constructing path diagrams of structural equations in the form of causal networks for each group to gain a deeper understanding of the mechanism of orthorexic behavior in individual groups.

Recall that according to the average score on the orthorexia nervosa scale in our sample, all four modalities have a diagnosis of orthorexia nervosa, while in the control groups it was not present (if to take < 40 points as the test norm). However, if to take < 35 points as the test norm, we can say that orthorexia nervosa is also characteristic of those who practice fasting, follow a therapeutic diet, eat intuitively, and for whom none of the dietary options offered in the questionnaire are suitable.

Therefore, causal network models were created for orthorexic modalities, reflecting the mechanisms of orthorexic eating behavior, and for control groups without this diagnosis, simple causal network models of eating were created for comparison.

The mechanism of orthorexic behavior implementation, reflected in the causal network model, for representatives of the orthorexic modality of exclusion: directly, a disorganized attachment style influences the increase in orthorexic tendencies, but there is also a more complex path – involving two steps of mediation iterations: when a disorganized attachment style influences the demanding parent and self-aggrandizement schema-mode, then the demanding parent and self-aggrandizement schema-modes influence restrictive eating behavior, which in turn influences the intensification of orthorexia in the group of representatives of the orthorexic modality of exclusion.

Representatives of the orthorexic modality of emphasis are characterized by the following mechanism of orthorexic behavior: orthorexic tendencies are realized through a first-order mediating variable in the form of external eating behavior, which is influenced by second-order mediating variables in the form of the -defender, attacker, and demanding parent schema-modes, together with an avoidant attachment style, while these schema modes are reinforced by a disorganized attachment style. Directly in this group, orthorexia is reinforced by disorganized and avoidant attachment styles.

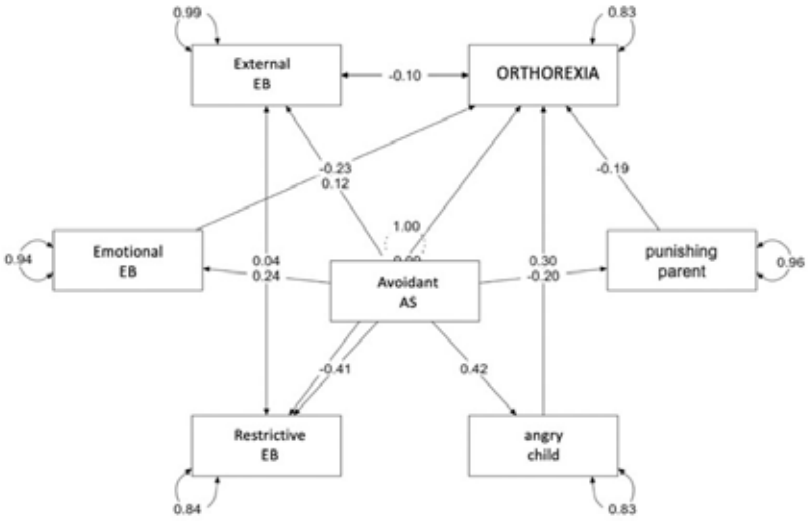

Fig. 10. Causal network for those for whom no dietary option is suitable in terms of attachment styles and schema-modes

The mechanism of orthorexic behavior for representatives of the orthorexic modality of balancing: an increase in orthorexic tendencies can occur in two ways: directly – through the influence of a disorganized attachment style on it, and indirectly – through the influence of a disorganized attachment style on the schema-modes of an angry, undisciplined, and impulsive child, which then influence the increase in orthorexic tendencies in this group.

The orthorexic modality of periodization is characterized by the mechanism of orthorexic eating behavior: the intensification of nervous orthorexia occurs in them only through the schema-mode of submissive surrender, neither directly nor indirectly; attachment styles or types of eating behavior do not influence orthorexia nervosa in this group.

Next, models of causal networks of eating behavior for control groups were considered. It was found that in respondents who practice fasting, only the self-aggrandizing schema-mode increases orthorexia nervosa, while the attacking defender schema-mode weakens orthorexic tendencies in this group; the secure attachment style does not directly influence orthorexia in them.

The causal network model of nutrition for representatives of the group of those who follow a therapeutic diet shows that the defender who stands aside schema-mode and secure attachment style contribute to the intensification of orthorexic behavior, while anxious and secure attachment styles contribute to the reinforcement of the attacking defender schema-mode. Another pathway is that a secure attachment style contributes to the reinforcement of the healthy adult schema-mode, which in turn contributes to a reduction in orthorexic tendencies.

The causal network model of nutrition for subjects who use weight loss drugs and do not have a diagnosis of orthorexia nervosa reflects the following mechanism of food behavior through schema modes and attachment styles: in these subjects, orthorexic behavior may be increased by emotional eating behavior, which, in turn, is influenced by a secure attachment style and schema-modes of detached complecency and happy child.

Representatives of the group of respondents without dietary restrictions (who have not been diagnosed with orthorexia nervosa) are characterized by the following model of the causal network of food behavior: an increase in orthorexic tendencies for them may be caused by the influence of an avoidant attachment style. On the other hand, through schema-modes, there is no effect on the intensification of orthorexia nervosa. Also, the avoidant attachment style in their group affects the reduction of the schema modes of a healthy adult, a happy child, and detached complecency.

For the group that identified themselves as those who intuitively feel what to eat, the causal network model reflects the following mechanism of food behavior: they have two ways of implementing orthorexic behavior. First, its direct reinforcement is influenced by an avoidant attachment style, punishing parent schema-modes, and submissive surrender. The second way of reinforcing orthorexic tendencies in this group is through the action of the angry child schema-mode (which is reinforced by an avoidant attachment style) on restrictive eating behavior, which then contributes to the reinforcement of orthorexia.

The causal network model of the mechanism of food behavior implementation for the group of those who did not find any suitable dietary option in the questionnaire shows that their orthorexic tendencies are implemented through the punishing parent pattern and through emotional food behavior, which is reinforced by an avoidant attachment style.

Conclusions. The study revealed a number of patterns that reveal the peculiarities of the mechanisms of orthorexic eating behavior. Attachment styles, schema-modes, and types of eating behavior differ significantly between groups with orthorexic modalities and control samples, confirming their diagnostic significance for the study of eading disorders. Different models of causal networks were identified for orthorexic groups: in the exclusion modality, orthorexic tendencies are reinforced by a disorganized attachment style, both directly and indirectly, through the schema-modes of demanding parent and self-aggrandizement and the subsequent activation of restrictive eating behavior; in the emphasis modality, orthorexic behavior is realized through an external eating behavior, which is influenced by the attacking defender and demanding parent schema-modes, as well as avoidant and disorganized attachment styles; in the balancing modality, both direct and indirect influences of a disorganized attachment style are observed through the angry, undisciplined, and impulsive child schema-modes; in the periodicity modality, the increase in orthorexic tendencies is caused solely by the submissive surrende schema-mode, without the influence of attachment styles or types of eating behavior.

For control groups without a diagnosis of orthorexia nervosa, other patterns were established: in the group practicing fasting, orthorexic manifestations are intensified by the self-aggrandizing pattern, while the attacking defender pattern reduces them; in the group adhering to a therapeutic diet, the increase in orthorexia nervosa is due to the influence of the defender who stands aside and a secure attachment style, but the healthy adult reduces orthorexic tendencies. For individuals who use weight loss drugs, the intensification of orthorexia is associated with emotional eating behavior, which is formed under the influence of a secure attachment style and the detached complecency and happy schema-modes. In respondents without dietary restrictions, orthorexia increases due to an avoidant attachment style, which also reduces the manifestations of healthy adult and happy child. For the group that chooses intuitive eating, orthorexic tendencies are caused by the actions of the punishing parent and submissive surrender, as well as the indirect influence of the angry child on restrictive eating behavior; in the group for whom no eating option was suitable, orthorexic tendencies are realized through the punishing parent and emotional eating behavior, which is exacerbated by an avoidant attachment style.

The results obtained indicate that disorganized and avoidant attachment styles, together with dysfunctional schema-modes, are the main predictors of orthorexic behavior. Their interaction with types of eating behavior creates complex mediating mechanisms specific to different orthorexic modalities. Thus, orthorexia nervosa is a multifactorial phenomenon in which emotional and cognitive processes caused by attachment experiences and early maladaptive schema-modes play a leading role.

The results of this study can be used to develop targeted psychocorrectional programs aimed at reducing orthorexic tendencies by working with attachment styles and dysfunctional schema-modes. The identified causal mechanisms can form the basis for an individualized approach in psychotherapy for individuals with manifestations of orthorexia nervosa, in particular for the integration of schema therapy, cognitive-behavioral therapy, and attachment therapy methods.

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