



MOTIVATIONAL STAGES IN BEHAVIOR CHANGE OF OVERWEIGHT ADOLESCENTS

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ABSTRACT

Objective: To evaluate the motivational stage for behavior change in overweight adolescents and to verify the relationships between variables. **Method:** descriptive, exploratory and correlational investigation. Forty-seven adolescents participated in an obesity consultation in Portugal. Data obtained between May and September 2018, through a questionnaire consisting of the University of Rhode Island Change Assessment Scale that evaluates motivation for change, and the Contour Drawing Rating Scale that evaluates satisfaction with body image. **Results:** prevalence of females $n=33$ (70.2%); mean age: 15.51 years. Mean body mass index of 29.05 kg/m^2 . Regarding the motivation for behavior change, the "pre-conception" dimension is the one with a higher average value ($\bar{X}=21.95 \pm 2.39$). The older adolescents who were in the pre-contemplation and contemplation stage were the ones who were more motivated to change behaviors. **Conclusion:** the adolescents presented mostly dissatisfaction with self-image and low motivation for behavior change, with the pre-contemplation motivational stage being the most prevalent. Knowledge of motivational stages allows health professionals to adjust the most appropriate therapeutic intervention strategies for each adolescent.

Keywords: Adolescent. Obesity. Self Concept. Motivation.

INTRODUCTION

Adolescence is constantly considered by literature as a stage of great emotional reorganization and intense fragility. The frequent interpersonal conflicts that occur at this stage may generate disturbances in terms of interactions and emotions, which makes adolescence a particularly vulnerable age ⁽¹⁾. In this period, in addition to the physiological transformations, the individual undergoes important psychosocial changes, is moldable, and is receptive to the influences of social and family models ⁽²⁾.

This phase is seen as more vulnerable to involvement in risky behaviors, ranging from substance use, self-inflicted injuries, alcohol consumption, tobacco and eating disorders. Overweight, which includes pre-obesity and obesity, is considered as a health risk behavior, being a consequence often associated with eating disorders ⁽²⁾. It is presumably the main public health problem in Portugal, noting that overweight already reaches 32.3% of Portuguese children and adolescents aged

10 to 17 years ⁽³⁾.

Obesity, the estimated epidemic of the 21st century, is a growing concern worldwide. This is considered a chronic disease not contagious and at the same time a risk factor for the development of other chronic diseases ⁽⁴⁾, which are the main causes of mortality and morbidity worldwide ⁽³⁾.

The development of overweight adolescents can be compromised, as with other chronic diseases not contagious ⁽⁵⁾, as concerns about body image and the definition of social function, as well as issues related to peers and self-esteem, can be exacerbated by the development of a chronic condition ⁽⁶⁾.

Body changes and the physical aspect contribute to the psychological and interpersonal development of adolescents, so at this stage it is essential that adolescents assume the conflicts about what they see and idealize as the ideal structure of the body. In this context, the adolescent's dissatisfaction with his body image may arise ⁽⁷⁾. Dissatisfaction with body image is very prevalent in adolescence, and usually involves a discrepancy between the adolescent's assessment of his real body image and his ideal

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body image⁽⁶⁾.

In adolescents with overweight and obesity, the reduction and control of body weight is a fundamental measure to implement. This trend can be reversed if there is an involvement of health professionals in order to enable adolescents to maintain a healthy energy balance⁽⁸⁾, so it is urgent to implement prevention strategies, early diagnosis and early intervention⁽²⁾.

Recognizing that the therapeutic approach to obesity is marked by a strong failure, it is crucial to rethink personalized, specialized, organized and multidisciplinary intervention strategies, that recognizes the situation of adolescents with overweight/obesity and encourages change⁽³⁾, considering the changes that occur throughout adolescence and identifying the risk factors associated with non-adherence therapy⁽⁹⁾.

The use of the Transtheoretical Model of Stages of Change (MSC)⁽¹⁰⁾ has been advantageous in changing health behaviors⁽¹¹⁾, so that the General Directorate of Health (GDH) considered that overweight individuals could also benefit from the practical application of this model. The assumption would be that intervention plans could be designed more adjusted to their needs if their degree of motivation for change was known⁽³⁾.

In fact, an intervention for a personal change requires that the person and health professionals know what stage of change the adolescent is in⁽¹⁰⁾. The authors of the transtheoretical model report four stages of change; pre-contemplation, contemplation, action and maintenance. They describe the individuals who are in the pre-contemplation stage as people who offer resistance to change, and hardly seek help to start the process of change. Predominantly, demoralization is the natural feeling that accompanies this phase. The pre-contemplators attribute responsibility for their problems to factors such as genetic configuration, addiction, family, society or "destiny", assuming that these factors are not in their control.

The possibility of change occurs in the stage of contemplation. In this, the individual recognizes having a problem, is aware of the advantages and disadvantages of change, however, there is a certain ambivalence, but seeks possible solutions.

The stage of action corresponds to the modification of the target behavior through efforts for change. It consists in the implementation of the individual and specific action plan created by itself.

At this stage, the behavior change is notorious. The person has already made clear and specific changes to their behavior pattern and is creating a new one for a significant period of time. It is considered the busiest period and the one that requires greater commitment of time and effort.

Behavior stabilization occurs in the maintenance stage. This stay is a real challenge for all risk behaviors, the person has to work to consolidate the gains he achieved during the action and the previous phases and strive hard to avoid lapses and recurrences.

Admitting the motivational stage as a preponderant factor for behavior change in overweight adolescents, the importance of developing studies aimed at their identification and therapeutic application is recognized.

Thus, this study aims to: Evaluate the motivational stage for behavior change in overweight adolescents, and verify the relationships between variables

To meet the objectives mentioned above, the following questions were formulated research: What is the motivational stage for the behavior change of overweight adolescents who attend an obesity consultation in a Portuguese hospital, and what are the factors that influence their motivation?

METHODOLOGY

A quantitative, descriptive, analytical exploratory and correlational study was developed, whose sampling method is non-probabilistic, by convenience. The research was developed in the external consultation of a Portuguese district hospital.

The study population was represented by 47 adolescents. The inclusion criteria adopted were: overweight adolescents aged between 14 and 18 years who attended the external consultation of obesity in the pre-established time period with different number of follow-up visits to obesity. Adolescents with cognitive deficits that compromised the correct completion of the questionnaire were excluded.

Data collection was performed by two nurses responsible for the consultation of obesity in adolescence, in the period between May and September 2018.

The adolescents were asked to fill out a questionnaire before the consultation, with an

average duration of five minutes consisting of sociodemographic characterization questions and two scales, one to assess the motivation for change, and another to assess perception and satisfaction with body image.

The identification of the motivational stage was evaluated through the URICA scale, having been used the version adapted and validated for the Portuguese population⁽¹²⁾. URICA is a Likert scale with three response categories and consists of 32 items. The motivational stage in which the adolescent is found is obtained by the score obtained in the answers, which can vary between 32 points and 96 points, with the cutoff line of 48.

The perception and satisfaction with body image is obtained with the application of the Contour

Drawing Rating Scale (CDRS), having been used the version adapted and validated for the Portuguese population⁽⁷⁾. The scale consists of a sequence of nine figures, in a sequence of female silhouettes and another of male silhouettes, ordered from the least voluminous to the most voluminous (Figure 1). The scale was accompanied by the following questions: 1. indicate the figure that most identifies with your current appearance; 2. indicate the figure you would like to look like. The variable "dissatisfaction with body image" was obtained through the discrepancy between the score corresponding to the silhouette that the adolescent perceived as being his current (question 1) and the one he would like to resemble (question 2).

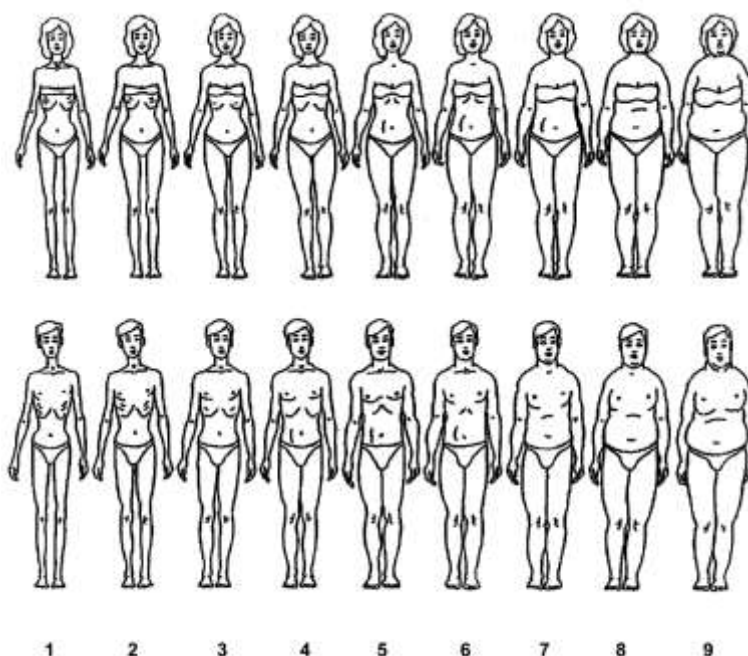


Figure 1. Contour Drawing Rating Scale (CDRS)

This research was approved by the Ethics Committee of the Health Sciences Research Unit: Nursing (UICISA-E) of the Nursing School of Coimbra (ESENFC), and obtained a positive opinion - Opinion N. P491-04/2018. All ethical assumptions were respected, and authorization was obtained from the authors of the scales used. All participants signed an informed consent form.

The data treatment was performed using the Statistical Package for the Social Sciences (SPSS ®) version 23.0. The decision of the statistical designs (parametric or non-parametric) to be used for the

treatment and analysis of data has been adapted according to the following criteria: the symmetry value, obtained by quotient between the statistical value of Skewness by the standard error of the measurement; the flattening value, obtained through the quotient between the statistical value of Kurtosis by its standard error value; the assessment of adherence to normality, through the use of the Kolmogorov-Smirnov statistical test (when $p > 0.05$ the variables under study have a normal distribution).

The following tests were applied: student's t for

independent samples, analysis of variance Anova and Pearson correlation. The interpretation of the statistical tests was performed based on the significance level of $\alpha=0.05$.

RESULTS

The participants were 47 adolescents. Regarding sex, the distribution of adolescents was heterogeneous, $n = 33$ (70.2%) female and $n = 14$ (29.8%) male, with an average of 15.51 years. Of the characterization related to the adolescents' residence, the majority $n=37$ (79.2%) resides in

village and villages and only $n= 10$ (21.3%) resides in urban areas. It was found that most $n=26$ (55.3%) attended secondary school, followed by $n= 21$ (44.7%) attending primary school. The combination of weight and height of adolescents allowed us to calculate the body mass index (BMI), (a measure considered important in itself for tracking obesity)⁽¹³⁾. This oscillated between a minimum of 25 and a maximum of 42.88; the average found was 29.05 kg/m². Regarding overweight, we found that most adolescents were obese, i.e., had a BMI ≥ 30 kg/m², and almost half of the sample is in pre-obesity, with BMI values between 25-29.9 kg/m² (Table 1).

Table 1. Distribution of adolescents according to BMI percentile

| BMI/Percentile table | n | % |
|-----------------------------------|-----------|--------------|
| Pre-obesity ($85 \leq P < 97$). | 23 | 48.9 |
| Obesity ($P \geq 97$) | 24 | 51.1 |
| Total | 47 | 100.0 |

n- Number

%- Percentage

As for the motivation for the behavior change, we can observe that in the adolescents under study the dimension "pre-contemplation" is that which had a higher average value, followed by the dimension

"contemplation" the distribution of adolescents by the stages that precede the action, in which the adolescent has already started his process of change (table 2).

Table 2. Descriptive statistics of the results of the motivation for behavior change scale in adolescents (URICA)

| URICA | \bar{X} | SD | Minimum Observed | Maximum Observed | Minimum Possible | Maximum Possible |
|-------------------|-----------|------|------------------|------------------|------------------|------------------|
| Pre-contemplation | 21.95 | 2.39 | 16 | 24 | 8 | 27 |
| Contemplation | 17.77 | 3.61 | 8 | 24 | 8 | 27 |
| Action | 16.19 | 3.57 | 9 | 24 | 8 | 27 |
| Maintenance | 13.98 | 3.32 | 8 | 23 | 8 | 27 |

\bar{X} -Mean

SD- Standard deviation

Regarding satisfaction with their body image, we found that the majority of adolescents $n=32$ (68.1%) identified their current appearance with figure 7 or higher of the Contour Drawing Rating Scale. However, only $n=2$ (4.3%) identified figure 7 as their ideal appearance and no adolescent indicated as ideal appearance an image of higher value in the scale. Although we were in a population of overweight adolescents, $n=3$ (6.4%) indicated that their current appearance was in figure 4 or lower.

On the other hand, $n=19$ (40.4%) of the adolescents identified these figures as their ideal appearance.

The results obtained in this study did not indicate that motivation correlates positively with the variables gender, place of residence, BMI or perception of current versus ideal body image.

In turn, the age of adolescents was positively correlated with the motivation for behavior change, namely in the dimension "pre-contemplation" and "contemplation" (table 3).

Table 3. Pearson's Correlation Coefficient between the motivation to change behavior and the age of adolescents

| Motivation change behavior | r | P |
|----------------------------|-------|-------|
| Pre-contemplation | 0.289 | 0.049 |
| Contemplation | 0.321 | 0.028 |
| Action | 0.215 | 0.147 |
| Maintenance | 0.263 | 0.074 |

r - Pearson's correlation coefficient

p- Probability of significance

Similarly, a positive correlation was also found between the motivation for changing the behavior of adolescents and the number of visits, and this

correlation is statistically significant only in the "action" dimension (Table 4).

Table 4. Pearson's Correlation Coefficient between motivation to change behavior and the number of obesity appointments attended by adolescents

| Motivation change behavior | r | p |
|----------------------------|--------|-------|
| Pre-contemplation | -0.043 | 0.776 |
| Contemplation | 0.014 | 0.927 |
| Action | 0.289 | 0.049 |
| Maintenance | -0.189 | 0.203 |

r - Pearson's correlation coefficient

p- Probability of significance

DISCUSSION

The sociodemographic results of the present study show a population mostly female, with an average BMI value of 29.05 kg/m². It should be noted that the national GDH reference tables consider obese individuals with BMI 30 kg/m². These values allowed us to conclude that the adolescents in the sample were all overweight, with high mean BMI values that pointed to the transition zone between pre-obesity and obesity ⁽³⁾. It is considered that these results are alarming, as the adolescent with a high BMI is five times more likely to become an obese adult, being known that obesity is predictive of the increase of other early comorbidities ⁽¹⁴⁾.

As for the motivation for the behavior change in the adolescents under study, it was found that the dimensions "pre-contemplation" and "contemplation" were those with higher mean values, that is, these adolescents were not yet aware of the behaviors that needed to change, and others, despite having the desire to want to change, were not yet prepared or were even sure of wanting to do so.

The results of this research suggest that adolescents who attended the obesity consultation still had a predominantly low motivation for changing their behavior, similar result was obtained

in another study ⁽¹⁴⁾, where the reports obtained indicated that most adolescents were pre-conceptive or contemplative at the first meeting and resistant to treatment, and some assumed that they were only attending the program by extrinsic motivation, invoking an allowance as a reward.

Although the search for treatment is a characteristic of the action ⁽¹⁰⁾, most of the individuals of this study are in the pre-contemplation stage. These results suggest that most individuals in our sample also attend the consultation for reasons extrinsic to themselves, possibly due to the pressure of others and not by intrinsic motivation, which arises from the individual himself and involves his desires and goals ⁽¹⁵⁾.

However, extrinsic motivated behaviors are dependent on possibilities and external results, considered predictors of low adherence to long-term behavior, rather than intrinsically motivated behaviors, that, not dependent on the satisfaction of rewards beyond their own satisfaction, are more easily maintained over time ⁽¹⁶⁾.

In the adolescents under study, when asked to indicate in the CDRS scale the number of the figure that most identified with their current appearance and with their ideal appearance, it was found that most were dissatisfied with their self-image. Similarly, in another study that aimed to examine the factors associated with dissatisfaction with body

image in adolescents, three quarters of the sample wished to have a different body silhouette from which they perceived themselves ⁽⁶⁾.

This dissatisfaction may be related to the vulnerability of this population group greatly influenced by the ideals of beauty, based on a sociocultural perspective, manipulated by social networks, which can influence the representation they make of their body. Considering the prevalence of overweight in our sample, we can see that these adolescents have a realistic perception of their high body measurements.

However, most of the young people in the sample were in the stage of change of pre-contemplation or contemplation, which allows us to affirm that, although they are not satisfied with their body image, do not consider the possibility of changing behaviors that may contribute to an improvement of body image. It is speculated that they have become chronic contemplatives, where it is easier to desire change than to work for it ⁽¹⁰⁾.

Regarding the number of obesity consultations that adolescents attended, we obtained an average of 3.62 ± 2.09 consultations. The frequency of consultations recommended by the GDH is not fixed, stressing that it should be appropriate for each particular case, however suggests at least three consultations between 10 and 18 years, and can be introduced, or eliminated, some consultations at special moments in the life cycle of families ⁽¹⁷⁾.

The monitoring of adolescents with quality in consultation is a challenge for any health professional. Tiredness, demotivation, work overload can complicate the interview, hindering the process of empathic and communicational bonding. Professionals must be able not to judge, be calm, and understand how the process of adaptation to change ^(19,20).

In this study, there was a tendency for age to correlate positively with motivation for behavior change. In the analysis by dimensions: there was a statistically significant correlation in the dimensions "pre-contemplation" and "contemplation", that is, older adolescents who have not yet started changes in their behaviors, because they are in the pre-contemplation stages contemplation and contemplation, would be the ones who were most motivated to changes in their behaviors related to overweight. This relationship was even more significant in adolescents who are in the contemplation stage (individual who recognizes the

problem).

It is speculated that the results found in our study are due to the fact that older adolescents are recognized as more informed individuals, taking a more active role in their decision-making. Thus, they consider the need for change, although they present difficulties in adhering to a behavioral change plan. However, no other studies were identified to confront these results.

Similarly, a positive and statistically significant correlation was also found in the "action" dimension, regarding the number of consultations attended by adolescents. These results allow us to conclude that, as the number of consultations of adolescents who are in the phase of change "action" increases, these tend to show a greater motivation for evident and concrete changes in their behavior, or to initiate new behaviors.

This increased motivation may be related to a greater involvement of the adolescent in his health, or a better relationship of trust in the professional who accompanies him. We can also think that the motivational strategies used in the consultation are more appropriate to this stay than the others. These findings were also not corroborated by other studies.

In interpreting the results of this study, some limitations should be considered. The data presented and discussed were obtained through the application of questionnaires to 47 adolescents who attended the obesity consultation in the pre-established period. Thus, taking into account the specificity of the sample, as well as the sampling method being non-probabilistic for convenience, there is no guarantee of the representativeness of the population and as such, the reading, interpretation and discussion of the data should be carried out with some weighting. Another limitation was related to the fact that there are no studies in Portugal that evaluate the motivation for behavior change through the URICA scale with three response categories in adolescents with excess weight/obesity, which would allow a better comparison of the results.

CONCLUSION

This study presents a percentage of overweight/obese adolescents with a low motivation for change and a clear dissatisfaction with body image, very close to some international studies.

These results should be valued by health professionals in planning interventions to

overweight adolescents. The internal motivation can be influenced externally, which leads us to believe that acting on it can be the cornerstone in the success for a therapeutic approach, along with adolescents with overweight/obesity.

Knowing the influence of motivation to change a health behavior, professionals should seek to identify the stage of readiness in these individuals in the first consultation of obesity, in order to initiate a therapeutic process of behavior change with personalized interventions to the adolescent under evaluation.

However, the results obtained in this study do

not indicate that motivation correlates positively with the variables gender, place of residence, BMI or perception of current versus ideal body image.

It is considered that, in other investigations, it would be important to explore other variables that could influence the results such as previous attempts at weight loss, sexual maturation.

The approach to overweight should be a priority, however, it is crucial to expand the knowledge and skills of professionals on this subject, in order to be able to mobilize all existing resources in their context of care, planning personalized interventions and developing interdisciplinary measures.

ESTÁDIOS MOTIVACIONAIS NA MUDANÇA DE COMPORTAMENTO DE ADOLESCENTES COM EXCESSO DE PESO

RESUMO

Objetivo: Avaliar o estádio motivacional para a mudança de comportamento nos adolescentes com excesso de peso, e verificar as relações existentes entre variáveis. **Método:** investigação descritiva, exploratória e correlacional. Participaram 47 adolescentes seguidos numa consulta de obesidade, em Portugal. Dados obtidos entre maio e setembro de 2018, através de um questionário constituído pela escala *University of Rhode Island Change Assessment Scale* que avalia a motivação para a mudança, e a escala *Contour Drawing Rating Scale* que avalia a satisfação com imagem corporal. **Resultados:** prevalência do sexo feminino $n=33$ (70,2%); idade média: 15,51 anos. Índice de Massa Corporal médio de 29,05 kg/m². Relativamente à motivação para a mudança de comportamentos, a dimensão "pré-contemplação" é aquela que apresenta um valor médio mais elevado ($\bar{X}=21,95\pm2,39$). Os adolescentes mais velhos que se encontravam no estágio de pré-contemplação e contemplação foram os que apresentaram maior motivação para a mudança de comportamentos. **Conclusão:** os adolescentes apresentaram na sua maioria insatisfação com a autoimagem e baixa motivação para a mudança de comportamentos, sendo o estágio motivacional pré-contemplação o mais prevalente. O conhecimento dos estádios motivacionais permite aos profissionais de saúde ajustar as estratégias de intervenção terapêutica mais adequadas a cada adolescente.

Palavras-chave: Adolescente. Obesidade. Autoimagem. Motivação.

ESTÁDIOS MOTIVACIONALES EN EL CAMBIO DE COMPORTAMIENTO DE ADOLESCENTES CON SOBREPESO

RESUMEN

Objetivo: evaluar el estadio motivacional para el cambio de comportamiento en los adolescentes con sobrepeso, y verificar las relaciones existentes entre variables. **Método:** investigación descriptiva, exploratoria y correlacional. Participaron 47 adolescentes seguidos en una consulta de obesidad, en Portugal. Datos obtenidos entre mayo y septiembre de 2018, a través de un cuestionario constituido por la escala *University of Rhode Island Change Assessment Scale* que evalúa la motivación para el cambio, y la escala *Contour Drawing Rating Scale* que evalúa la satisfacción con la imagen corporal. **Resultados:** prevalencia del sexo femenino $n=33$ (70,2%); promedio de edad: 15,51 años. Índice de Masa Corporal promedio de 29,05 kg/m². En cuanto a la motivación para el cambio de comportamientos, la dimensión "precontemplación" es aquella que presenta un valor medio más elevado ($\bar{X}=21,95\pm2,39$). Los adolescentes más viejos que se encontraban en el estadio de precontemplación y contemplación fueron los que presentaron mayor motivación para el cambio de comportamientos. **Conclusión:** los adolescentes presentaron en su mayoría insatisfacción con la autoimagen y baja motivación para el cambio de comportamientos, siendo el estadio motivacional precontemplación el más prevalente. El conocimiento de los estadios motivacionales permite a los profesionales de salud ajustar las estrategias de intervención terapéutica más adecuadas a cada adolescente.

Palabras clave: Adolescente. Obesidad. Autoimagen. Motivación.

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Submitted: 13/11/2022

Accepted: 03/03/2023