

## **Analysis of motivation to practice physical activities: a systematic review**

### **Análise da motivação para a prática de atividades físicas: uma revisão sistemática**

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#### **ABSTRACT**

Fighting obesity has become a public health problem in recent decades due to its growth in the entire population and the comorbidities associated with weight gain. As ways to eradicate this pathology, in addition to being a protective factor, physical activity has stood out as one of the most effective interventions for interventions in cases of obesity. However, there is little adherence of that population to physical activity practices. In order to understand the motivations that impact this condition, this systematic review analyzed in the Scielo, BVS, Web of Science and PubMed databases in the period from 2016 to 2021, studies that point out the intrinsic and extrinsic reasons for adherence to the practice of physical activity. The results point to an increase in scientific production in 2017, with greater frequency in medical journals. As for motivation indicators, the data reveal that behavioral strategies were used as extrinsic motivators for adherence to physical activity, however the articles point to motivation in general, that is, not considering types or motivational factors, in addition to not investigating specific motivations in the obese population.

**Keywords:** Obesity, Physical Activity, Motivation.

## ABSTRACT

O combate à obesidade tornou-se um problema de saúde pública nas últimas décadas devido ao seu crescimento em toda a população e às comorbidades associadas ao ganho de peso. Como formas de erradicar esta patologia, além de ser um fator de proteção, a atividade física tem se destacado como uma das intervenções mais eficazes para intervenções em casos de obesidade. No entanto, há pouca aderência dessa população às práticas de atividade física. A fim de compreender as motivações que impactam esta condição, esta revisão sistemática analisada nas bases de dados Scielo, BVS, Web of Science e PubMed no período de 2016 a 2021, estudos que apontam as razões intrínsecas e extrínsecas para a adesão à prática da atividade física. Os resultados apontam para um aumento da produção científica em 2017, com maior frequência em periódicos médicos. Quanto aos indicadores de motivação, os dados revelam que estratégias comportamentais foram utilizadas como motivadores extrínsecos para a aderência à atividade física, porém os artigos apontam para motivação em geral, ou seja, não considerando tipos ou fatores motivacionais, além de não investigar motivações específicas na população obesa.

**Palavras-chave:** Obesidade, Atividade Física, Motivação.

## 1 INTRODUCTION

Physical inactivity has become a challenge in Brazil and worldwide, due to its high prevalence in all age groups and associated with weight gain <sup>1</sup>. More than 25.3% of adults in Brazilian capitals have the habit of watching TV for more than 3 hours a day, with this time increasing according to sex, socioeconomic level and age. According to Gualano & Tinucci et. al.<sup>2</sup> this behavior is strongly related to the incidence and severity of a relevant number of chronic diseases, including obesity. Therefore, physical exercise becomes one of the most important therapeutic tools in health promotion.

Studies comparing the incidence, prevalence, severity, therapeutic efficacy and mortality of most chronic-degenerative diseases, as well as their complications, demonstrate the influence of physical activity as a protective factor. Scientific evidence indicates that the increase in physical activity levels has been the most important factor in combating obesity, improving the quality of life, revealing itself as a fundamental intervention for obese people who in general, in addition to the high BMI (body mass index ) have comorbidities <sup>3,4</sup>.

Obesity is a chronic condition that is not restricted to country, race or age, but the motivation to feed the physiological needs of each organism, the sociocultural patterns that influence body care, unique nutritional aspects and dietary control restrictive. Although often associated with eating behavior, obesity can be a response to genetic,

psychological, metabolic and environmental factors that influence the body's development and configure the organic uniqueness <sup>5</sup>.

Changes in habits in recent decades, such as access to technology, little physical activity even in daily activities such as commuting to school and work, games that involve caloric expenditure and changes in diet significantly contribute to weight gain <sup>6,7</sup>. Currently, physical activity is defined as:

"... any bodily movement, produced by skeletal muscles, which results in energy expenditure (7), having biopsychosocial, cultural and behavioral components and determinants, which can be exemplified by games, fights, dances, sports, physical exercises, labor activities and displacement" <sup>8</sup>.

This definition is in line with the WHO <sup>9, 10</sup> which points out that physical activity can be considered any movement capable of generating muscle stimuli and obtaining energy and caloric expenditure. Like walking, running or climbing stairs, dancing, playing, cycling, among others.

Physical activity has been identified in research in the last decade as a determining factor for quality of life and well-being, as it is recognized as a practice that favors physical and mental health. This recognition has been reflected in recent years in the variety of sports practice modalities as well as in the spaces to be practiced, no longer being primarily practiced in gyms and occupying public spaces such as squares, beaches and clubs.

Policies and publicity on the subject began to be broadcast with greater frequency, reflecting a greater demand for sports practices, including by previously infrequent audiences such as the elderly and people with disabilities. But there is a low adherence of people with obesity, reflecting in the worsening of this pathology, which can evolve to comorbidities, drastic decisions such as bariatric surgery and even death.

The increase in the obesity rate in adults more than doubled in Brazil, with an increase from 12.2% to 26.8%, in the period 2003 to 2019 <sup>11</sup>. Understanding the reasons that keep this public away from physical activity practices can contribute to develop new public policies, and strategies, activities and attractive spaces for this population, contributing to weight reduction and improvement in quality of life.

Due to the reasons mentioned above, the objective of this systematic review is to analyze in the literature the intrinsic and extrinsic reasons that hinder or facilitate the adherence of obese individuals to physical activities.

## 2 METHODS

This systematic review was conducted using the PRISMA model as a protocol guideline - Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement

As eligible search, the following inclusion criteria were chosen: 1) Studies that were only in the form of articles; 2) Articles only in languages: English, Portuguese or Spanish; 3) Full texts only; 4) Articles whose focus of the population was obese adults, which may be extended when relevant to the population of young adults - when the studies have populations whose age range crosses these two age groups.

The databases searched were: SciELO - Scientific Electronic Library Online, web of science, BVS and PubMed whose indexed articles were published between January 2016 and March 2021 with the descriptors obesity, physical activity and motivation. The selected studies could comprise clinical, experimental, correlational studies, as well as systematic reviews and meta-analyses.

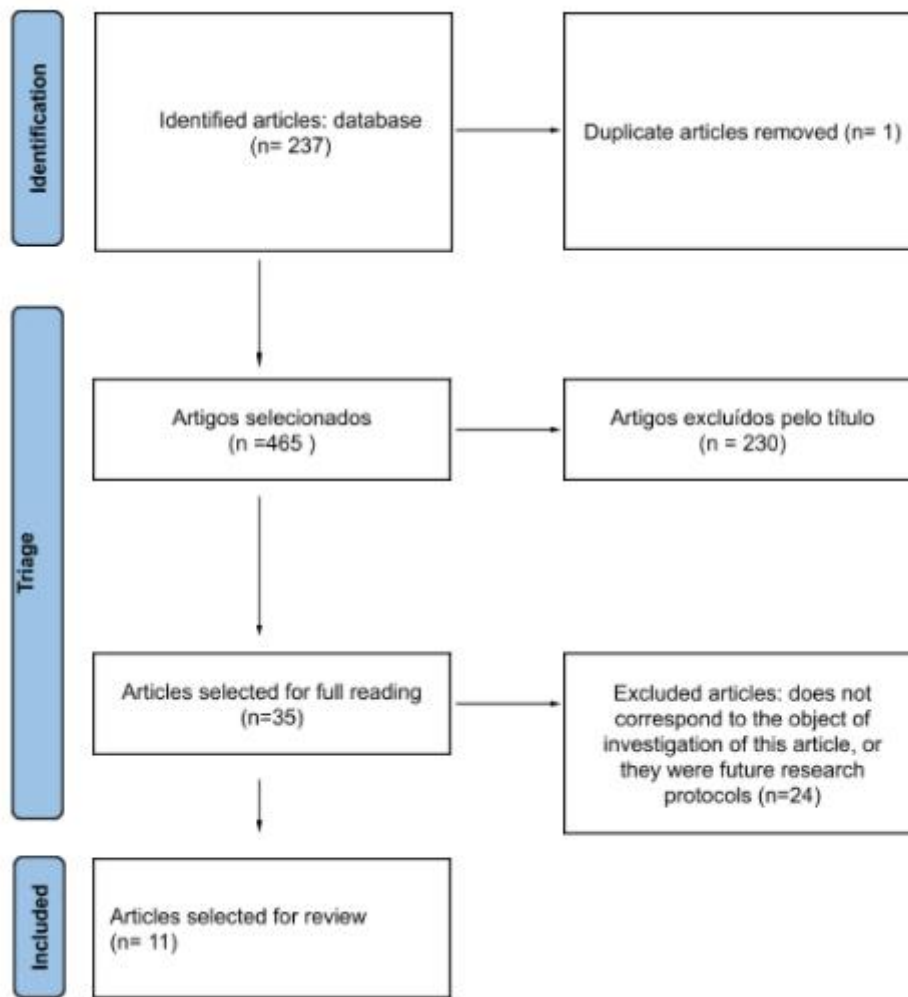
Articles that were excluded, even after applying the filters to the descriptors, were: 1) Repeated articles - either in the database itself or in others already researched; 2) Articles whose theme does not correspond to the scope of this review; 3) Any study that was not in article format; 4) Articles that were not in the languages: English, Portuguese or Spanish; 5) Articles that have been collected during the survey period, but when the reading was carried out, they were no longer available.

The variables observed will appear in a table that will have the following items: type of study, year of publication, journal in which the articles were published, motivators for adherence or non-adherence to the practice of exercises.

## 3 RESULTS

The search in the databases indicated 237 articles as described below (figure 1). After excluding duplicate articles, 236 remained. After analyzing the title and reading the abstract, 201 articles were excluded for not dealing with the obese population and adult age group, and who did not show motivation for adherence to physical activity. Among the 35 articles that were selected for full reading, 24 did not correspond to the object of investigation of this article, or were protocols for future research, and were excluded.

Figure 1 – Data analysis



A total of 11 articles were analyzed after reading the text in full and separated in the tables that follow as extrinsic and intrinsic reasons for joining or not physical activity, in addition to the reasons for giving up.

Table 1 - Articles analyzed

Articles	Year	Journal	Intrinsic Motives	Extrinsic Motives
Kelley CP, Sbrocco G, Sbrocco T. <sup>14</sup>	2016	Prim Care	None	Collaborative goals; Nutritional consultation; Sticky notes; Stimulus control; Support networks; self-monitoring; motivational interview
Bond DS, Graham Thomas J, Vithiananthan S, Webster J, Unick J, Ryder BA, Pohl D <sup>13</sup>	2016	Surg Obes Relat Dis	None	Goals; Daily action plan; Monitoring log
Livia, B, Elisa, R, Claudia, R, Roberto, P, Cristina, A, Emilia, ST, et al.. <sup>21</sup>	2016	Journal of Obesity	None	Health; self-efficacy

Patel, MS, Asch DA, Rosin R, Small DS, Bellamy SL, Heuer J, et al <sup>23</sup>	2016	Annals of internal medicine	None	Financial reward (initial allocation of a financial reward and subsequent loss when one of the goals was not met resulted in more daily exercise than no incentive)	
Samdal, GB, Eide, GE, Barth, T, Williams, G, Meland, E <sup>16</sup>	2017	Int J Behav Nutr Phys Act.	None	Motivational Interview; Setting goals, Self-monitoring; Feedback about behavior; Feedback about the result of the behavior; Behavior demonstration)	
Shin DW, Yun JM, Shin JH, Kwon H, Min HY, Joh HK, et al <sup>18</sup>	2017	Obesity (Silver Spring, Md.)	None	Financial incentives in conjunction with smartcare	
Burgess, E, Hassmén, P, Welvaert, M, Pampa, KL <sup>15</sup>	2017	Clin Obes	Self-reinforcing; self satisfaction in reaching a goal	Automonitoramento; Controle de estímulo; Entrevista motivacional; Acordo comportamental com a equipe; Reestruturação cognitiva; Dissociação do comportamento alimentar	
Crane MM, Jeffery RW, Sherwood NE <sup>19</sup>	2017	Am J Mens Health	None	Melhorar a saúde	
Rosenfeld CS <sup>12</sup>	2017	J Neurosci Res	Intent, Strength, Competition; Challenge; Feeling of well being, Acquisition of knowledge	Attitude, Self-efficacy, Body Mass Index / Weight Control, Physical Appearance (Slim); Previous participation in sports; Reduce weight gain; Body image; Prevent various diseases; Social influences; Emotional support, Enjoyment of doing an activity with other people; Body image; Listen to music; Development of skills for disease control and general health promotion	
McCoy P, Leggett, S, Bhuiyan, A, Brown, D, Frye, P, Williams, B <sup>22</sup>	2017	Int. J. Environ. Res. Public Health	None	Text messages with health information for behavior change and motivational texts; support network	
Kurtzman GW, Day SC, Small DS, Lynch M, Zhu J, Wang W, et al. <sup>20</sup>	2018	J Gen Intern Med	None	Support network	

		Int. J. Environ. Res. Public Health	
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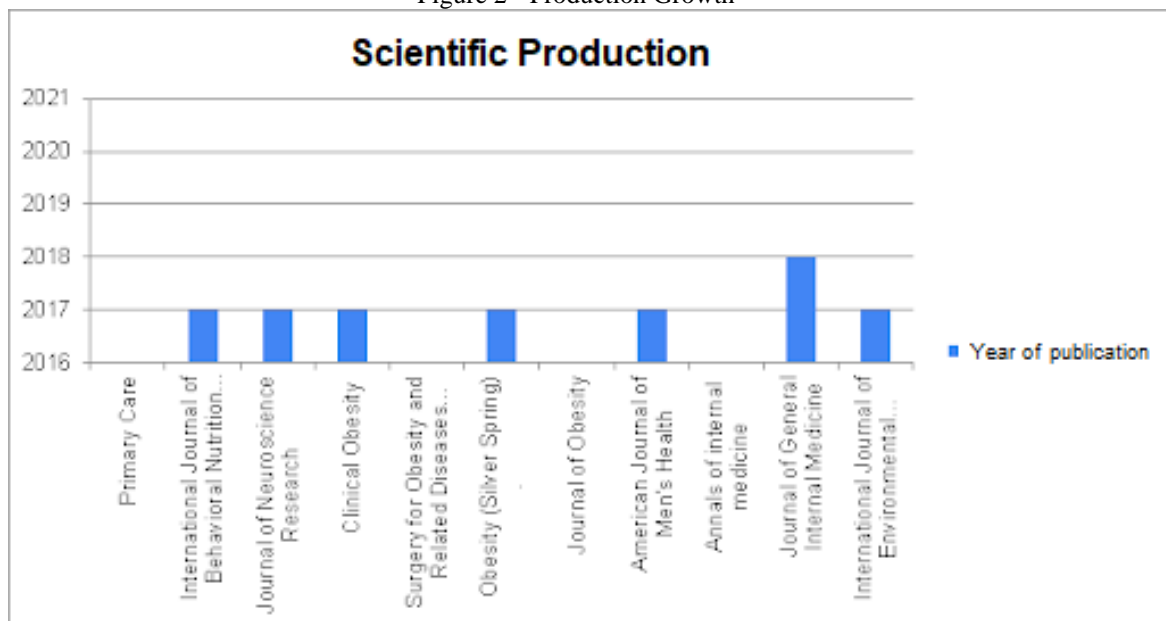
Table 2. Reasons for non-adherence

Title	Year	Journal	Reasons for non-adherence
Bond DS, Graham Thomas J, Vithiananthan S, Webster J, Unick J, Ryder BA, Pohl D <sup>13</sup>	2016	Surg Obes Relat Dis	Intrinsic Motivation - low pleasure Extrinsic Motivation - self-efficacy

Table 3. Reasons for giving up

Title	Year	Journal	Reasons for giving up
Shin DW, Yun JM, Shin JH, Kwon H, Min HY, Joh HK, et al. <sup>18</sup>	2017	Obesity (Silver Spring)	Not achieving the proposed goal

Figure 2 - Production Growth



#### 4 DISCUSSION

This review aimed to identify the intrinsic and extrinsic reasons that lead obese or overweight adults to adhere to physical activity, in addition to those that lead to giving up. To this end, 35 articles were analyzed, which in their abstract and title contained information regarding physical activity, motivation and adults with obesity. After this

analysis, 11 articles were left to collect the types of motivators. However, most articles demonstrated or explained their data only commenting on them in general, testing lifestyle programs, smartphone helper apps, or behavioral strategies, without going into details about the motivational factors, but as a result; whether there was greater or lesser adherence to physical activity.

Among the articles analyzed, there is a prevalence in the adoption of behavioral strategies to make this population start practicing physical activities. From an investigation on these strategies, the classification of motivators into extrinsic and intrinsic was promoted, with extrinsic motivators being predominantly used. However, due to the variety of objectives of the studies found, many articles intended to assess the effectiveness of new strategies for adherence, or even to verify if they work properly in different contexts and different populations. Therefore, motivation is cited in general, resulting in only two studies that make this distinction, and one article that uses a psychometric instrument capable of evaluating and analyzing motivation.

In the research conducted by Rosenfeld <sup>12</sup>, some of the extrinsic and intrinsic reasons of men and women to join the practice of physical activity are unraveled, including inferences from studies with rodents, while in Bond <sup>13</sup>, the increase in motivation from the BREQ-2, a scale to assess changes in motivation in relation to physical activity, which has 19 items and can be evaluated on a 5-point Likert scale, where 0 means (“not true of me”) to 4 (“very true of me”), concluding that there were few articles that investigate motivational factors.

During the analysis, the following extrinsic motivators were observed as the most cited strategies in the articles: goal setting, 13-16 self-monitoring. These methods can make the behavior of practicing physical activity to be internalized by the person to the point of starting that activity for pleasure and well-being. The self-determination theory states that the probability of a new behavior to be maintained for longer is if this behavior is motivated by intrinsic factors, and an extrinsically motivated behavior can also develop intrinsic characteristics over time and maintain constancy over the activity <sup>17</sup>. However, some reasons can lead the individual to give up this practice and the research carried out by Shin et al. <sup>18</sup> points out not achieving the proposed goals as a motivator for giving up.

Considering that intrinsic factors are those that refer to internalized values and that are in congruence with the person's other values <sup>17</sup>, there are few articles that directly cite it. Only two of the selected articles have as strategies self-reinforcement, self-



satisfaction in achieving goals, intentions, strength, competition, challenge, sense of well-being and acquisition of knowledge<sup>12, 15</sup>.

Scientific production on the subject was greater during 2017 and all articles analyzed were published in journals in the field of medicine. This may justify the way in which motivation is cited throughout the articles, where there is little interest in investigating this phenomenon, since most articles used self-report questionnaires, which can significantly change the responses when compared to more precise measures to assess the motivation, such as psychometric instruments. Another point is the growing number of obesity cases in Brazil, the scarcity of studies carried out in the Brazilian context can represent a serious harm to public health.

As motivation is important for staying in physical activity, it is interesting that it is not only seen as a routine or obligation, but as a constant activity. This will have a positive impact on investments in weight control programs and effective lifestyle change, reducing the number of dropouts for not having achieved the expected results. Analyzing motivation in further studies is important, as it is through it that the individual starts to act on a certain behavior and it is from this that professionals can be successful with their participants in combating obesity or preventing it, keeping them constantly motivated in physical activity until it is internalized and do it for pleasure and well-being.

It is noteworthy that although some articles described above deal with the intrinsic and extrinsic motivation in the obese population, the themes are dealt with in a broad way, not portraying the daily issues of the practice of physical activity in this population.

Often in daily life there are reports in gyms and spaces of physical activity practices of the feeling of embarrassment, due to the embarrassment of not achieving the goals, which was highlighted in the review as an important factor of adherence due to discomfort with the body.

Pain and difficulty in mobility are also portrayed as an impediment. Muscle pain and joint pain are pointed out as a recurrent complaint in the withdrawal of exercises and perhaps in the association of the activity as something unpleasant, uncomfortable and painful.

According to the above, it is necessary to study the daily practice of physical activities in obese individuals and/or instruments that allow analyzing the peculiarities of this population's non-adherence to the practice of physical activities.

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