REVIEW ARTICLE

Beliefs and practices of healthcare providers regarding obesity: a systematic review

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Summary

Despite the implementation of various intervention measures, the number of obese individuals remain high; thus, it is important to consider what is contributing to this scenario. Authors have been striving to understand the role healthcare providers, especially in primary healthcare, seem to play in this context. The present review aims to synthesize the main investigation results regarding beliefs, attitudes, and practices of healthcare providers, as they seem to negatively influence the practitioner's actions. The words "obesity", "beliefs", "healthcare professionals", "general practitioners", "attitudes", "practices", "health physicians", and "family practitioners" were entered into databases, such as EBSCOHost, ScienceDirect, PsychInfo, PubMed, and SciELO. Thirteen studies from 1991 to 2011 were reviewed. The data indicate a lack of appropriate understanding and adequate competence regarding obesity, which likely contributes to ambivalent belief development and negative attitudes toward obese individuals, who are described as unmotivated, lazy, and lacking self-control. These professionals consider it hard to deal with obesity, manifesting low expectations of success regarding weight loss, thus considering themselves unsuccessful. Their practices are inconsistent, mirroring a certain skepticism towards the efficacy of available interventions. Either during graduation or as active practitioners, it is imperative to make healthcare providers aware of the impact their beliefs regarding obesity can exert on their practices, as these may impair appropriate and effective treatment delivery to obese individuals.

Keywords: Knowledge; attitudes and practices in healthcare; obesity; general practitioners.

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Introduction

Obesity, considered one of the 21st century epidemics by the World Health Organization (WHO)[1], is a chronic disease whose prevalence has been dramatically increasing. From the projections reported in 2008 by the WHO[2], around 200 million men and 300 million women are obese, who belong to the 1,5 billion overweight adults over 20 years old. According to the same source, these numbers are expected to rise to 2.3 billion overweight adults and 700 million obese adults by 2015. Looking deeply into this scenario in the USA, obesity prevalence has significantly increased over the last 30 years, ranging from 15% in 1980 to 33% in 2004 for adults aged 20 to 74 years, with higher obesity rates being reported in females than in males[3]. The WHO report regarding the year 2008 demonstrates a marked increase in the overweight and obesity rates in that country, estimating that 70% of the American population will have a weight problem, placing the USA at the top of the rank of countries with the highest overweight and obesity rates[4].

Data concerning the Brazilian scenario are poor and inconsistent. However, according to a national inquiry performed in 1989, about 27 million adults, representing 32% of the population, were overweight; 11 million were male and 16 million were female, corresponding to 27% and 38% of the male and female populations, respectively. According to the same study, approximately 6.8 million adults were obese, corresponding to 8% of the total population[5]. More recent data shown by the WHO indicate that 52.8% of Brazilian population aged 20 and older is overweight, with the prevalence being higher among males than females within an age range between 48 and 56 years[4].

In Europe, a significant rise in the number of obese individuals is found in almost every country of the "Old Continent". According to the WHO report in 2008, overweight prevalence in Europe was around 54.8%, and was higher in males than in females in the age group from 53 to 56 years. Concerning obesity, the same source indicates that approximately 21.9% of European individuals aged 20 to 23 years are obese, and women are more affected by the disorder than men[4]. Portugal is no exception in the obesity epidemiological picture: in 2003/2005, according to Carmo et al.[6], 53.6% of the Portuguese population between 18 and 64 years of age had a weight problem. From 8,116 subjects, 39.46% were overweight and 14.2% were obese, with a higher prevalence reported in males (60.2%) than in females (47.8%), and the age groups more affected were 50-59 years and 60-64 years.

In response to the high number of obese individuals reported, a recent development of primary, secondary, and tertiary prevention measures aiming to stop this epidemic has been observed[1,7]. Among other aspects, these measures have been especially emphasizing the role that healthcare providers - mainly those practicing primary healthcare - play as promoters of behavior change in risk areas, such as obesity. However, the few studies evaluating the effectiveness of healthcare providers' work in this scenario have revealed very negative outcomes, arousing a deep interest in investigators to find out what could be contributing to the failures observed[8,9]. Although many justifications can be found, such as nonadherence to treatment by obese individuals, duration of consultations, policies directed toward other diseases, etc.[7], some investigators[7,9-11] have indicated that general and family practitioners are likely responsible for poor results, since they do not seem to take the problem as seriously as they should, manifest negative attitudes toward this group, feel unmotivated to approach the obesity issue, and are skeptical about the effectiveness of some treatments; as a result, they neither make the appropriate diagnosis nor refer patients to specialized practitioners, thus contributing to the perpetuation and exacerbation of obesity cases[10,11]. According to Budd et al.[12], this scenario might be improved by eliminating the bias of healthcare providers' beliefs, suggesting that the first step would be characterizing and understanding beliefs, attitudes, and practices of healthcare providers regarding obesity.

This review aims to summarize the main results of studies on beliefs, attitudes, and practices of healthcare providers regarding obesity in order to better understand this issue. Fishbein and Ajzen's[13] definition of beliefs was adopted, which considers that beliefs relate to subjective judgments the individual makes regarding either an idea or a specific object, establishing a relationship between understanding him/herself and understanding the world around him/her. Therefore, they are propositions that the individual supports about something he/she believes it is true, with the veracity being relative (distinct from the concept of knowledge, which has an objective quality), as they result from psychological processes liable to bias from the cognitive function. They are different from the concept of attitudes, which pertain to a more affective domain[14].

Lastly, this article also aims to draw healthcare providers' attention to such an important issue as obesity, and to make them aware of how their own beliefs and attitudes could influence their practices during the managing of obesity.

Methods

The following keywords were entered into the EBSCOHost, ScienceDirect, PsychInfo, PubMed, and SciELO databases: obesity, beliefs, healthcare professionals, general practitioners, attitudes, practices, health physicians and family practitioners. Inclusion criteria were: a) material written in English, Portuguese and Spanish between 1991

and 2011; b) regarding obesity in adults only; c) straightforwardly approaching the beliefs, knowledge, attitudes, and practices of healthcare providers; d) showing empirical evidence; e) sample including only general and family practitioners. The references indicated in the articles also led to new searches, and the option "related articles/citations" was used when available. Thus, out of 40 studies initially retrieved, only 13 met the defined criteria and were reviewed. Studies regarding healthcare providers other than general and family practitioners, systematic review articles or literature reviews, studies focusing on beliefs and feelings of obese individuals toward their physicians' practices, and studies approaching childhood obesity were excluded.

Results

No studies written in Portuguese were found and only one study was written in Spanish. Nevertheless, the latter did not meet the criteria, so the search methods had to be limited to studies published in English.

Empirical studies on beliefs, attitudes, and practices of general and family practitioners were identified, in which the physicians were contacted through medical associations/boards (4), primary healthcare centers (4), university centers of family medicine (2), and hospitals (2). Another study was considered for review, but it did not provide information regarding access to the sample. In three studies, in addition to general and family practitioners, the authors also included interns in their sample. However, as this group always had a reduced size, these articles were considered in the review. Eight studies were conducted in the USA, four in the United Kingdom, and one in Israel. The majority of studies were published between 2001 and 2010, with only one study being published in the 1990's. Two studies chose the qualitative method, conducting individual interviews or *focus* group, with data being analyzed using a phenomenological approach[10] and grounded analysis[15], respectively. Eleven studies opted for the quantitative method, prioritizing the use of questionnaires. However, three of these studies first conducted focus group interviews as a basis to construct and validate the questionnaire used[11,16,17]; three other studies introduced, along with the questionnaire, different clinical cases used to guide the responses provided to the subjects[18-20]. Only four studies mention a pilot study conducted to validate the questionnaire, and only the study by Ogden and Flanagan[9] provides information about psychometric characteristics of the items in the questionnaire used. Most questionnaires were sent by e-mail; a few of them were personally administered or sent by mail, with the response rate ranging between 24.4% and 82%. The responses could be given either by five- or nine-point Lickert scales or by choosing one among a set of possible answers.

Some characteristics and the main results in different studies are summarized in Table 1. These results suggest that there are common domains, which will be discussed further.

Knowledge and background

A large number of studies tried to evaluate the healthcare providers' knowledge about overweight and obesity in terms of causes, outcomes, and solutions by investigating the contribution of their educational background and whether they felt competent to deal with the problem. The study by Forman-Hoffman[17] indicates that 85.5% of respondents consider obesity a disease, which raises the probability that they offer some counseling in this area. The same data were found in the study by Foster et al.[21], which indicates that most subjects consider obesity a chronic disease associated with severe comorbidities. Regarding causes, behavior factors, such as physical inactivity, poor eating habits, excessive eating, consumption of high-calorie food, and psychological factors - as in inappropriate coping strategies, such as turning to food in order to solve problems -, are the factors most strongly indicated by physicians as causes of obesity [21-23]. Diabetes; high blood pressure; musculoskeletal pain; difficulty making new friends, finding a job, or even receiving medical care are some of the more often reported consequences[22].

Generally, professionals feel underprepared to deal with obesity and consider their knowledge insufficient, making it difficult to approach patients. A few studies found that physicians consider their educational background to be poor, which created gaps between knowledge related to nutritional aspects and knowledge about treatment and intervention requirements[10,11,17]. In contrast, in the study by Ferrante et al.[16], the subjects consider that their knowledge of nutritional indications and physical exercise practices is adequate; in the study by Foster et al.[21], 49% of the respondents feel capable of providing some counseling on weight loss. However, there is a lack of understanding about the use of drugs for weight loss, surgical procedures, specific techniques to assess morbid obesity, and the availability and operating mode of group therapies. In this sense, the study by Cade and O'Connel[24] shows that healthcare providers attribute greater importance to experience and information from articles as sources of knowledge rather than their educational background.

Beliefs about obesity management and treatment

Usually, general and family practitioners consider obesity a significant issue that, regardless of the patient's gender[19], must be approached[25], with 98.2% of the subjects in the study by Horman-Hoffman[17] considering it a public health problem. However, not all professionals consider this disease as a part of their scope, placing the responsibility of

Table 1 – Summary of main studies on beliefs, attitudes, and practices of healthcare providers regarding obesity

Author(s) and Country	Subjects	Design/method	Main results
Alexander et al.[15], USA	11 Family Practitioners and 6 Internists	Focus groups	The professionals consider that talking about obesity is part of their duties, but they report many barriers to approaching the disease, and they would rather let the patient introduce the subject. They consider it easier to approach overweight patients, as compared to obese patients.
Anderson et al.[18], USA	209 physicians (30%) out of 700	Questionnaire based on case reports	Female physicians who are overweight (BMI > 25) provide more weight loss recommendations than male physicians who are overweight (BMI > 25). 84% of female professionals who are overweight refer their patients to nutritional support, compared with 55% of referrals made by male physicians.
Cade & O' Connell[24], UK	299 GP and FD (75%)	Questionnaire	98% of professionals provide counseling targeting a lower intake of food (78%), increased physical activity (77%), and reduced high-calorie food intake (75%). Only 18% refer their patients to a nutritionist, and 2% resort to drugs. 98% believe that approaching obesity is part of their duties, although 26% do not feel professionally rewarded. 27% believe that obese patients are lazy, and most believe that, as physicians, they are the least capable of influencing weight loss.
Dutton et al.[19], USA	108 physicians from primary healthcare units	Questionnaire	The physicians consider that when overweight or obesity is seen, both in men and women, these patients must lose weight, and they counsel the patients accordingly. However, higher and more accurate weight loss goals are reported by women than by men. Professionals tend to foster weight loss expectations that are 5% to 10% higher than currently recommended.
Epstein & Ogden[10], UK	21 GP and FD	Interviews	Professionals consider weight loss to be the patient's responsibility, but they acknowledge that the patient, by ascribing medical causes to the problem, places the responsibility on the physician. This tension can lead to conflicts in the therapeutic relationship, and the conflicts are exacerbated by the belief in the ineffectiveness of available treatments and by the prescription of drugs only to keep a good relationship with the patient.
Ferrante et al.[16], USA	255 Family Practitioners (53%)	Questionnaire	Drugs are infrequently prescribed. A high prevalence of negative attitudes is reported, mainly among younger physicians. There are numerous physical barriers regarding the timing of the assessment of the problem. The greater the understanding of obesity, the higher the likelihood to approach the issue with the patient, the less the frustration, the less the beliefs in ineffectiveness, and the less the pessimism toward the treatment's success.
Fogelman et al.[11], Israel	510 GP and FD	Questionnaire	Professionals consider they have a limited effectiveness, as they are underprepared to deal with the disease and their knowledge is not sufficient to provide nutritional advice. Their main indication is physical activity (95%), reduced food intake (81%), and counseling with a nutritionist (58%).

(Cont.)

Table 1 – Summary of main studies on beliefs, attitudes, and practices of healthcare providers regarding obesity (Cont.)

Author(s) and Country	Subjects	Design/method	Main results
Forman-Hoffman et al.[17], USA	55 physicians from primary healthcare in veteran centers	Questionnaire	The lack of preparation is associated with less approach of the obesity issue. Those concerned about their own weight tend to be more concerned about the patients' obesity. 31% believe overweight people are lazy, 25% that they are unwilling. 58% report a referral to a nutritionist, 38% to behavioral therapy, and 4% prescribe drugs.
Foster et al.[21], USA	620 GP and FD	Questionnaire	34.5% always recommend the obese patients to lose weight; 56.4% sometimes refer to a nutritionist; 66% never refer to surgery; and 32.7% rarely indicate surgery. 23.6% consider their background is good regarding obesity management, but 30.9% had learning in practice. 85.1% believe that obesity is a disease.
Helb & Xu[19], USA	122 physicians in a hospital setting	Questionnaire based on case reports	Negative attitudes tend to parallel the patient's degree of obesity, and practices lose quality as the patient's weight increases, with some stereotypes being observed against this population. However, most consider obesity to be a severe health problem which deserves careful attention.
Ogden et al.[22], UK	89 GP and FD and 599 obese subjects	Questionnaire	Professionals and patients have different models and perceptions regarding obesity causes, control, and management, leading to difficulty in intervention, as both groups have different conceptions regarding the responsibility for treatment.
Ogden & Flanagan[9], UK	73 GP and FD and 311 subjects from the general population	Questionnaires	Professionals believe that obesity is not a part of their scope, as it has many psychological and behavioral causes. They are ambivalent regarding the efficacy of most available treatments and show a high consistency about causes and solutions for obesity, in contrast with the findings in the general population.
Sansone et al.[23], USA	99 GP and FD (40%)	Questionnaire	A certain ambivalence regarding bariatric surgery is reported, with 78% considering that there are more effective ways of managing obesity. However, most (84%) report that they would indicate surgery to patients if they met the appropriate criteria. Female professionals seem to be more reticent than males about resorting to this procedure.

the disease development, as well as its treatment, on the obese patients, as found by Ogden and Flanagan[9]. Likewise, the subjects in the qualitative study conducted by Epstein e Ogden[10] consider obesity to be the obese patients' responsibility, identifying them as the cause of the problem and, as such, they advocate that the obese individual should assume its management. However, the practitioners recognize that these patients are prone to place this responsibility on the physicians, and are reluctant to assume the control of the condition either because they believe their problem results from a medical disorder they cannot control, or because they do not recognize the problem's severity and often deny it. However, different data can be found in other studies, showing that 85% to 98% of respondents consider obesity as a part of their scope and feel that, as physicians, they must warn their patients about the risks and outcomes of obesity[11,21,24].

Regarding weight loss management and contact with obese patients, 74% to 96.4% of physicians state that dealing with this group is not easy, and they feel their action is constrained, mainly in setting long-term changes (72%), developing frustration feelings (66%) due to the perception

that the patients are not capable of losing weight; in 45% to 74% of the subjects, those feelings are enhanced by a lack of professional gratification and satisfaction as they provide care to this group[10,11,16,17,21,24]. Between 85% and 90% of health technicians also mention the weight loss desire first occurs from esthetic reasons, with health being a secondary reason. 40% to 54% consider family assumes a more powerful position than physicians concerning motivation and support for a lifestyle change[11,24]. Effectively, data show that 34% to 40% of general and family practitioners do not believe patients will succeed in losing weight, and in the study by Foster et al.[21], one third of the 620 respondents do not believe that this group of patients could reach a normal weight, with only 14% of them feeling successful in providing support. However, physicians recognize a weight reduction as low as 5% or 10% to be beneficial for an obese patient[21]. Likewise, the results of the vast majority of studies analyzed indicate that these healthcare professionals usually consider current obesity treatments to be ineffective[10,16,21]. Only in the study by Horman-Hoffman et al.[17] did the subjects believe their action could be successful, and that there are effective measures in the management of this chronic disease.

Attitudes regarding obese patients

Results reveal accordance in this domain, showing that most general and family practitioners characterize obese individuals as lazy people who are highly unwilling and unmotivated to lose weight, demonstrate no self-control, and often do not take the blame for their condition[11,16,17,21,24]. These professionals consider that the patients look for an easy solution for their problem, deny their poor eating habits, and are unavailable for physical activities[16]. In the study by Fogelman et al.[11], over 50% of the subjects describe obese patients as awkward, unattractive, ugly, sloppy, unpleasant, dishonest people with difficulties in adhering to treatments. The investigation conducted by Helb and Xu[20], consisting of 122 general and family practitioners, showed that the patients' weight/size influenced the way professionals viewed and treated them, concluding that the heavier the patient, the more tests were prescribed, and the shorter the time spent in the visit. The data still revealed that professionals state that the heavier the individual, the poorer his/her health and the lower his/her self-discipline, thus requiring stricter counseling. This and other studies[16,23] also indicate that these patients are seen as unhappy and emotionally unstable, and that they are believed to have severe psychological problems. A further finding was that the more experienced the physician, the less negative were the attitudes he/she exhibited[11]. Also, larger understanding about obesity led to less negative attitudes towards this group, less difficulty in approaching the problem, less frustration in dealing with the issue, greater belief in the effectiveness of the treatments, and higher expectation of successful weight loss[16].

Practices and referrals to other professionals

Despite the varied percentages found among studies, indicating different importance physicians assign to practices initiated, a high concurrence regarding physical activity, reduced food intake, decreased calorie ingestion, and appropriate development of informational material about obesity and weight loss is reported[11,15-17,24]. Between 35% and 98% of professionals report themselves as offering this type of counseling[20,24], with patient referral to other professionals, such as nutritionists, being not only seldomly mentioned in some studies, but also referenced by only 30% to 58% of subjects[15,17,20]. In the investigation by Fogelman et al.[11], 38% and 25% of respondents reported that they advise behavioral therapy and group intervention, respectively, whereas in the study by Cade and O'Connel[24], only 17% of the professionals indicated group intervention. In contrast with these low frequencies of referral to the various treatment options, the healthcare practitioners in the study by Ogden and Flanagan[9] consider group therapies to be the only means that are definitely beneficial for obese patients, and they are apprehensive regarding the benefits from other measures, such as surgery, drug treatment, and direct counseling based on the few available guidelines at this time. In at least two studies, family engagement arises as a key support, being sometimes more relevant than the general and family practitioners' role[11,24], as previously mentioned.

Regarding bariatric surgery for weight loss, data are somewhat controversial. In the study conducted by Sansone et al.[23], in which general and family practitioners are specifically asked about this procedure, the conclusion was that 78% of the subjects believe that there are more effective methods than bariatric surgery for weight loss, but 84% report a high probability of referring obese patients to this kind of treatment. However, in the study by Foster et al.[21], only 23% of the respondents reported this practice as an option, and in the study by Epstein and Ogden[10], the subjects consider the surgery a high-risk procedure.

Likewise, a negative attitude toward weight loss drugs was found. In the study by Fogelman et al.[11], despite 34% of the professionals considering this to be an appropriate practice even for individuals with a body mass index below 30 kg/m^2 and 13% considering them effective, only 4% admit prescribing them. On the other hand, in the study by Epstein and Ogden[10], the clinicians considered that drugs are not effective for weight loss, however sometimes they end up administering them only to meet the patients' expectations, so that a good therapeutic relationship can be maintained between them.

Perceived barriers to obesity treatment

In some studies, general and family practitioners were asked about occasional barriers to a greater engagement and success of obesity management and treatment. Poor educational background, associated with a difficulty in approaching the weight loss issue with obese patients, appeared as the most frequent reasons mentioned among different studies[6,15,20]. Next, limitations of the consultation time and low expectations about the patients' ability to succeed in losing weight were found. The absence of appropriate and well-founded counseling guidelines were also indicated by Alexander et al.[24] and Forman-Hoffman[17]; the latter pointed out the necessity of the healthcare system itself to regard obesity as a priority.

Discussion

Data from the 13 studies reviewing beliefs, attitudes, and practices of general and family practitioners regarding obesity are quite revealing about these professionals' difficulties and the way they view obese individuals, as well as how their relationships can be described.

Despite the fact that a general concern about the obesity problem seems to be present, a set of ambivalent beliefs and negative attitudes toward these patients is found. Regarding knowledge and educational background in this area, the majority of professionals do not feel properly prepared to deal with the obesity issue, although not all studies demonstrate this, and this inappropriate preparation seems to be the source of many observed beliefs and practices. The lack of appropriate knowledge may result in viewing counseling as something difficult to concretize, associated with difficulty in approaching weight loss, low expectations of success, and beliefs of ineffectiveness regarding some available treatments. Likewise, the fact that medical training largely occurs under a biomedical influence can contribute to the difficulty healthcare providers present as they deal with a mostly behavioral disease whose main treatment mode lies precisely in behavior changes[21]. However, it is controversial that, despite the low competence perceived, the results indicate a tendency for physicians themselves to counsel obese patients, which could be the cause of the failures found. Nevertheless, this behavior could also be due to the lack of resources often found in healthcare facilities, thus limiting actions in primary care and referral to more specialized centers.

Obesity has also been described in terms of responsibility, namely, who should assume control of the disease. Some professionals think the issue is within their scope; others disagree, considering that the disease does not have a medical cause, but results from individual behavior, and that the obese patient should be held accountable (blaming the victim model)[22]. However, physicians acknowledge that the obese patient usually puts the control of the situation into the hands of healthcare providers. These different attitudes and point of views regarding treatment may contribute to damage the therapeutic relationship, as mentioned by Epstein and Ogden[10]. In an effort to maintain balance in the relationship, professionals choose to administer drugs with whose use they do not agree to and whose efficacy they dispute only to meet the patient's expectations. This conflict and its resolution then elicit feelings of frustration and professional dissatisfaction, maybe one of the aspects leading physicians to consider it difficult to deal with the problem. The same reasons may also contribute to the negative attitudes observed during data analysis.

Effectively, stigmas and social stereotypes were found in the attitudes of professionals regarding obese patients, such as the idea that obese people are unwilling, unmotivated, lazy, have no self-control, and have many psychological problems; this seems to influence both the way professionals view the group and their practices, with a decreased quality in the services provided being reported as the patient's weight increases[16]. However, these aspects seem to be mediated by the number of years of professional experience and by the knowledge about the obesity problem, meaning the more years of professional experience with obesity and the more knowledge the practitioner has accumulated, the less negative attitudes will be expressed[11,16]. These factors may contribute to a better understanding of the problem, allowing the adoption of a more impartial and less judgmental posture regarding obese people. It is important to point out that negative attitudes, if noticed by obese patients, might likewise contribute to a negative response, leading, in turn, to perpetuation and exacerbation of negative attitudes by the professionals, repeating a cycle that is detrimental to the obese patient and which might inhibit his/her behavior of searching for help to lose weight, since he/she would try to self-protect from stigmas and social stereotypes also present in healthcare facilities[20].

The practices elicited are in accordance with the data from the study by Ogden and Flanagan[9], which reveal a high congruence between causal beliefs and beliefs regarding solutions for obesity; that is, the options for counseling and treatment carried out by healthcare providers lean on their beliefs about the problem's causes. Therefore, since physicians consider that the main cause for obesity derives from the subject's behavior, the indication of physical activity and reduced food and high-calorie food intake to lose weight is in alignment, fundamentally holding to behavior and lifestyle changes.

However, regarding other treatment options, data showed certain ambivalence from physicians, with more favorable beliefs toward some options than to others. Perhaps this aspect is due to unfamiliarity and lack of knowledge about some practices, which, associated with

both a shortage of resources or unavailability of certain services, and reasonable and appropriate guidelines for obesity treatment, may contribute to inconsistencies in the support provided. These factors may also explain the finding of low frequencies of referral to specialized services, such as nutritional support, group interventions, or evaluation for bariatric surgery, even when there are studies demonstrating, for example, that obese patients will benefit greatly in the long term if they are monitored in a group[24,25], and that bariatric surgery, namely gastric banding, is currently one of the most effective procedures in morbid obesity management[26,27]. A negative attitude towards the administration of drugs is observed, with their use being rare, which confirms the fact that physicians would rather resort first to behavioral interventions when causes are thought to be behavioral. Interestingly, negative attitudes shown along with low expectations of successful results might likewise contribute to a very low referral rate, since the professionals tend to think this would be a waste of time considering the unwillingness, low motivation, and failure in losing weight found in obese patients.

Limitations

One of the limitations found in the 13 reviewed articles concerns the fact that many studies had very low response rates, contributing to a lack of representativeness of the sample and creating problems concerning generalization and comparisons among findings of different researches. Likewise, few studies had random samples, most used convenience samples, and no investigation used comparative groups. Regarding statistical data, few studies described the validation process of the questionnaire that was used, and only one shows the psychometric characteristics of the tool. The great diversity of statistical tests used makes it difficult to do comparisons among studies. These comparisons become even more difficult to concretize when the various settings (primary healthcare centers, hospitals etc.) where data were collected are considered, but it would be interesting to investigate, in future studies, whether this aspect exerts any influence on beliefs, attitudes, and practices of healthcare providers. Another limitation particularly highlighted concerns the priority given to quantitative studies over studies based on a qualitative method. Effectively, for a few authors[10,12], this limitation translates into somewhat reduced outcomes as they explore only beliefs regarding causes, consequences, and efficacy of available treatments, thus missing important aspects related, for example, to the significance attributed to the obesity treatment process, to the commitment to obesity management, and to physician-patient interaction.

Concerning this review, its main limitation is associated with the fact that it has focused only on beliefs, attitudes, and practices of general and family practitioners; it is suggested that future investigations explore those variables focusing in other healthcare providers more connected to the obesity issue such as nutritionists, surgeons, psychologists, … and compare these results with the ones obtained from general practitioners.

Conclusion

As found in the present review, there is a lack of investigation in this field, which is confirmed by a reduced number of reports found and considered for analysis, highlighting the need for studying and deepening the understanding of beliefs, attitudes, and practices of healthcare providers regarding obesity. Although only studies published in English have been reviewed, with the risk of finding results depicting a reality that does not match other nations' scenarios, this review is expected to make a contribution in order to enlighten healthcare providers about the way their beliefs can influence their attitudes and practices regarding obese patients, as well as their relationship and the patients' adherence to treatment, ultimately aiming to improve healthcare provided to individuals with this disorder.

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