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Analysis of medical appointments for patients with overweight and obesity in a public hospital of Lima, Peru: a cross-sectional study of audio-recorded consultations

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Abstract

Objective: To describe the content of overweight and obesity counseling performed in a public Peruvian hospital.

Methods: We audio-recorded 40 visits of patients with overweight or obesity from the internal medicine, cardiology, endocrinology, and family medicine services at Cayetano Heredia Hospital. Fragments of the recordings in which counseling was performed were transcribed and codified. We established a checklist to score each counseling session and performed descriptive analyses.

Results: Complete counseling (including weight, nutrition, and physical activity) was performed in 32.5% of consultations. The average time spent in counseling was 1.72 minutes. Counseling on weight loss was performed in 65% of consultations, nutrition in 65%, and physical activity in 35%. On average, 8 of 26 checklist items were fulfilled per appointment. Weight loss goals were established in 15% of visits. The most frequent diet recommendations were eating more fruits and vegetables (32.5%) and eating fewer carbohydrates (30.0%). Suggested physical activities were walking (10.0%), running (7.5%), and playing any sport (7.5%).

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Conclusions: Complete counseling was only addressed in one-third of the appointments, and most counseling was superficial without considering therapeutic goals. This suggests the need to include lifestyle counseling in consultations, regardless of the medical specialty or patient's background condition.

Keywords
Obesity, overweight, counseling, obesity management, lifestyle, weight loss

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Introduction

Worldwide, 1.9 billion and 650 million adults have overweight and obesity, respectively.[1] Projections estimate that by 2030, more than 2 billion adults will have overweight and more than 1 billion will have obesity.[2] This represents an important public health problem because both conditions are risk factors for diabetes, cardiovascular disease,[3] cancer,[4] and mortality due to cardiometabolic diseases.[3,5] Hence, it is necessary to ensure the prevention, diagnosis, and treatment of these conditions. Although adequate obesity management has a positive effect on patients, previous studies have shown that recommendations given during outpatient visits are insufficient and nonspecific.[6] Understanding how this care is delivered would help to standardize and improve it.

Health counseling provides patients with new self-care habits and behaviors through the use of interventions and effective communication. In this process, physicians play a facilitating role while patients assume the main role: they analyze, decide, and act.[7] Obesity counseling establishes recommendations to lose weight by changing dietary intake and physical activity habits with consideration of the patient's overall situation and the current guidelines.[7,8] As a result, such counseling has an effect on the body mass index (BMI),[9] abdominal circumference, and body fat reduction;[10] it also improves liver function,[11] lipid panel indices, glycemia, and blood pressure values.[12] The frequency of obesity counseling during outpatient visits ranges from 11% to 69% according to research in primary care in the United States.[13–15] Moreover, considerable numbers of physicians exhibit low levels of knowledge about overweight and obesity management,[16] and their recommendations are neither specific nor realistic[6] and do not follow clinical guidelines.[17]

Although similar research has been performed in other contexts, few studies have explored this topic in South America,[18,19] and no such studies have been performed in Peru. In Peru, 36.9% and 21.0% of people older than 15 years have overweight and obesity, respectively; excess weight is more prevalent in women[20] and in people living in Lima and other coastal cities.[21] The healthcare system in Peru faces challenges such as increasing numbers of patients and limited time for medical appointments. Furthermore, previous studies have shown that Peruvian patients with noncommunicable diseases face barriers in obtaining their medication, accessing follow-up visits, and putting into practice the recommendations received from doctors.[22] However, there is a lack of information regarding the obesity counseling

process and strategies in Peru. Therefore, the present study was performed to describe the frequency and content of overweight and obesity counseling sessions, including weight loss, nutrition, and physical activity topics, offered by physicians in a general hospital in Lima, the capital of Peru.

Materials and methods

Study population

This study was conducted in Cayetano Heredia Hospital, a referral hospital in Lima, Peru, from December 2018 to January 2019. Forty medical appointments (performed either by medical specialists or fellows) were evaluated, with 10 counseling sessions performed per medical specialty: internal medicine, family medicine, cardiology, and endocrinology.

We included patients aged 18 to 65 years with a BMI of $\geq 25\,kg/m^2$ (i.e., patients with overweight and obesity) who were either first-time or revisiting patients, regardless of their main reason for the medical appointment. Patients with functional dependency, patients with communication barriers, pregnant women, ranked athletes, bodybuilders, and patients with any missing information regarding the selection criteria were excluded.

The reporting of this study conforms to the STROBE guidelines.[23]

Study design

We conducted a cross-sectional, descriptive study with convenience sampling using mixed methods: audio recordings of medical appointments, clinical records, and demographic questionnaires.

Data collection

Before the beginning of the outpatient visits, we informed the physicians about the study outline and requested their volunteer-based participation. We then reviewed the list of scheduled appointments for each participating physician to prepare the required material. We obtained the patients' age, weight, and height from their medical records. We invited those patients who met the selection criteria to participate in the study and explained its relevance. To reduce changes in the participants' habitual performance when they felt observed (Hawthorne effect), we did not specify that obesity counseling would be evaluated; instead, we mentioned that the appointment would be studied as a whole, emphasizing that it was anonymous and would not disrupt the outpatient visit. Both the physicians and patients provided written informed consent, and the patients filled out a sociodemographic and health questionnaire.

Prior to each appointment, a digital audio recorder was set up in a location that allowed it to clearly record the physicians' and patients' voices. No researchers were present in the office during the appointment. The patients entered the office according to their scheduled appointment. The beginning of the appointment was defined as the greeting between the doctor and patient, and the end of the appointment was defined as the farewell between them. After each consultation, the recording was saved with an identification code and a brochure about healthy lifestyles was provided to each patient.

Variables: checklist

The primary outcome was the score obtained from a checklist of recommendations that should be included in each counseling session. Two of the authors (MFTN and EFR) created this checklist based on a report by van Dillen et al.[6] This tool was validated in a pilot study involving five patients and an expert review committee that included three physicians (Internal

Medicine, Endocrinology, and Family Medicine), who suggested structuring it into three sections: weight, nutrition, and physical activity counseling.

The highest score per appointment was 26. A global score per service was calculated to allow for comparison between specialties; the maximum global score was 260 (10 consultations per specialty) as detailed in Supplementary Material 1.

In addition, a questionnaire was administered to gather information on the participants' characteristics, sex, age, BMI, education level, occupation, and comorbidities. Physicians' medical specialty was detailed with respect to whether they were medical specialists or fellows. The type of patient (first-time patient or revisiting patient) and the durations of the appointment and counseling were also recorded.

Statistical analysis

Information regarding the participants and appointments were entered into a database. A descriptive analysis was performed using frequency distribution tables and median time variables.

Two researchers (MFTN and EFR) separately listened to the audio recordings. The moments during which obesity counseling was carried out were identified and transcribed *verbatim*. The researchers utilized a previously established preliminary list of codes according to the categories weight, nutrition, and physical activity. Text fragments were read and analyzed by the two researchers (MFTN and EFR), who identified the codes individually. The results of each researcher were then crossed, and any differences were resolved by consensus.

Ethics approval and consent to participate

This study was carried out following the World Medical Association's code of ethics (Declaration of Helsinki) for experiments involving humans. The study was approved by the institutional ethics committee of the Universidad Peruana Cayetano Heredia (code 100918) and the institutional research ethics committee of the Hospital Cayetano Heredia (code 101-018). The data were confidential and only reviewed by the researchers. Written informed consent was obtained from all individual participants included in the study. We confirm all patient/personal identifiers have been removed or disguised so that the patients/persons described are not identifiable and cannot be identified through the details in this report.

Results

Participants' characteristics

Fifteen physicians and 40 patients from four medical services participated in the study. The participants' characteristics are summarized in Table 1. Sixty percent of the physicians were women, 40.0% were fellows, and most specialized in internal medicine (33.3%) and endocrinology (26.7%).

Twenty-eight (70%) patients were women, and their mean age was 50.2 ± 10.3 years. The majority of patients had obesity (67.5%). In addition, most of the participants were revisiting patients (62.5%). The most common reason for the visit was evaluation of metabolic disease (32.5%) or cardiovascular disease (27.5%).

Appointment characteristics

The median appointment length was 17.27 minutes (range, 4.00–86.25 minutes), and the median counseling length was 1.72 minutes (range, 0.17–19.65 minutes). The percentage of time spent in counseling during the appointment was 10%. Counseling that included all three

Table 1. Participants' characteristics.

Physicians (n = 15)	
Medical specialists	60.0
Fellows	40.0
Sex	
Male	40.0
Female	60.0
Patients (n = 40)	
Sex	
Male	30.0
Female	70.0
Age, years	50.2 ± 10.3
Education level	
Illiterate	2.5
Elementary school	15.0
High school	52.5
Higher education	30.0
Occupation	
Housewife	57.5
Others	42.5
Type of patient	
First-time patient	37.5
Revisiting patient	62.5
Reason for medical appointment	
Cardiovascular disease	27.5
Metabolic disease	32.5
Others	30.0
BMI	
Overweight	32.5
Obesity	67.5
Comorbidities	
Hypertension	40.0
Diabetes mellitus	32.5
Dyslipidemia	15.0
Others	42.5
None	20.0

Data are presented as percentage or mean ± standard deviation.
BMI, body mass index.

recommended aspects (weight, nutrition, and physical activity) was performed in 32.5% of visits, and at least one aspect was included in 70.0%. Advice regarding nutrition was given in 65% of visits, weight in 65%, and physical activity in 35% (Table 2).

Table 2. Appointment characteristics.

	Internal medicine (n = 10)	Family medicine (n = 10)	Endocrinology (n = 10)	Cardiology (n = 10)	Total (n = 40)
Length in minutes, median (range)					
Appointment	21.60 (6.42–53.07)	35.97 (13.28–85.25)	9.18 (4.00–25.50)	14.70 (6.75–21.47)	17.27 (4.00–85.25)
Counseling	0.62 (0.17–4.42)	5.70 (0.17–19.65)	2.23 (0.50–4.95)	0.73 (0.70–0.75)	1.72 (0.17–19.65)
Counseling percentage, %	6	15	21	7	10
Addressed topics, %					
Weight counseling	90	80	70	20	65
Nutritional counseling	80	90	70	20	65
Physical activity counseling	10	60	60	10	35
At least one topic addressed	90	90	80	20	70
All three topics addressed	0	60	60	10	32.5

Checklist

On average, 8 of the 26 checklist items were scored per visit. As mentioned in the Materials and methods section, we also calculated a global score per medical specialty, with 260 being the maximum score (10 consultations per specialty). Family medicine scored 100 out of 260 points; endocrinology, 69 points; internal medicine, 43 points; and cardiology, 16 points. This information is detailed in Supplementary Material 2.

Weight loss counseling

Physicians recognized that patients had overweight or obesity in 62.5% of visits, and they based their diagnosis on the calculated BMI in 10.0% of these visits. No physicians measured the patients' abdominal circumference or other parameters.

Physicians initiated weight counseling in 55.0% of encounters, 47.5% indicated that weight loss influences the patient's medical condition, and 7.5% did not mention why weight was discussed or address the association of weight with the main reason for the visit. Only 7.5% of physicians addressed weight counseling because the patient requested this counseling. No physicians examined the patient's willingness or motivation to lose weight.

Generally, doctors started with direct questions (e.g., "*Do you maintain a healthy weight?"*). In 27.5% of visits, the patient's self-perception about his or her weight was explored, as shown in the following representative exchange between a family medicine physician and a 50-year-old woman:

> *Doctor: How much have you weighed before?*
> *Patient: 5 months ago I weighed 63 kg.*
> *Doctor: Do you feel like you have gained weight?*
> *Patient: Yes, I feel I have gained weight.*

In 55% of consultations, physicians indicated (usually briefly) the need for patients to lose weight. Only 15% established a weight loss goal of losing 1 to 2 kg, and 5% specified the length of time in which to achieve this goal.

Physicians addressed weight loss benefits in 25% of appointments. Some benefits were nonspecific, such as a good health status, and others were more specific, such as normalization of glycemia and lipid panel values as well as prevention and treatment of noncommunicable diseases. Finally, 30% mentioned the consequences of weight gain such as direct discomfort and increased risk of other chronic diseases.

Nutritional counseling

Physicians assessed patients' nutritional habits in 57.5% of visits, mainly using closed questions (e.g., "*Are you on a diet?"*), and they explored difficulties or barriers to healthy eating habits in 37.5% of visits. Patients mentioned not dieting in 20% of appointments, and only one of these patients was asked about how to change this situation. When physicians investigated the reasons for patients' unhealthy eating habits (10%), they tended to interrupt with suggestions, giving patients no chance to answer, as shown in the following representative exchange between an internal medicine physician and a 53-year-old woman:

> *Dr: What's going on at home? Can't you diet? . . . Diet does not mean not eating but it means to do it healthier, right?*
> *Pt: Ok, doctor.*

Regarding recommendations about food group intake, physicians in 32.5% of appointments mentioned increasing intake of fruits or vegetables, either in a general way (*"eat more vegetables"*) or by specifying portion sizes (*"half your plate must have*

vegetables"). One physician considered the patient's preferred vegetables when giving advice. Fat reduction was indicated in 7.5% of visits. Sugar restriction was suggested in 20%, including sugary drinks, desserts, and sweets. Carbohydrate intake reduction was reported in 30% of consultations, mostly with nonspecific advice *("eat less refined flour")*.

In 7.5% of appointments, physicians recommended increasing water intake, and one of them specified the quantity (2–3 L/day). Finally, in 17.5% of visits, physicians prescribed an evaluation by a nutritionist, whereas only 5.0% mentioned that the reason for this prescription was to offer patients additional advice about specific quantities of each food group.

Physical activity counseling

Usual physical activity was addressed in 25% of consultations by asking either directly *("Do you do any kind of physical activity?"*) or about specific activities *("Do you run?" or "Do you go to the gym?")*.

Patients responded that they did not perform physical activity in 10% of the appointments, and two of these patients received recommendations. In 15% of encounters, the patients mentioned that they practiced some activity; in such cases, they were asked how they did it and were given suggestions. Physicians explored difficulties performing exercise in 22.5% of the appointments.

In 15.0% of the consultations, the physicians suggested that the patients increase their general physical activity; 10.0% suggested walking, 7.5% running, and 7.5% playing any sport or dancing. A representative suggestion given to a 37-year-old woman by an endocrinology physician is as follows:

It's summer, you can go swimming . . . If you like dancing, go to a dance class. If you are at home, and you don't have enough time, there are Zumba classes on TV. If you like it, do it for half an hour with your little children . . .

In seven appointments, physicians emphasized that effective physical activity requires more intensity than usual. Finally, the duration and frequency of exercise were specified in 20.0% and 17.5% of encounters, respectively.

Discussion

The objective of this study was to describe physicians' recommendations given to patients with overweight and obesity during outpatient visits. To the best of our knowledge, this is one of the first studies of obesity counseling in Peru and one of the few in Latin America. Our results indicate that one-third of the consultations addressed all three recommended topics: weight, nutrition, and physical activity. In addition, more than half of the consultations addressed weight loss (65%), were initiated by physicians (55%), and related to the main reason for the appointment. The main nutritional advice was to consume more fruits and vegetables and to reduce simple carbohydrate intake, whereas the most common physical activity recommendation was to perform more exercise (most such recommendations were made without mentioning frequency or intensity). Prior research showed that discussing only one of these topics was associated with no weight change; in contrast, addressing all topics together allowed patients to achieve their goals.[24]

One unexpected result was that the assessment of patients' nutritional status was only based on their BMI; it did not consider their abdominal circumference. The abdominal circumference has significant relevance for anthropometric evaluation in adults,[25] and an abnormal circumference is a risk factor for noncommunicable diseases.[26] Another surprising

finding was that the physician offered counseling at the patient's request in only three visits. This differs from the findings in another study, in which patients (mainly those with obesity) initiated the discussion.[27]

Some findings of our study are in agreement with those of previous studies. Namely, the frequency of any obesity-related advice and counseling on combined topics (weight, nutrition, and physical activity) was similar to that in other publications.[24] The most common physical activity recommendation was to exercise more,[6] and this suggestion was usually based on difficulties identified and addressed during the visit.[28] Moreover, patients' self-perception, availability, and motivation were rarely examined, although studies have suggested that recommendations are more individualized when patients analyze the cause of their overweight; additionally, patients' motivation is usually underestimated.[28]

Compared with prior studies, our study not only showed similarities in the frequency of nutrition[6] and physical activity[6,17] counseling but also showed differences in the frequency of weight counseling.[6,17,24] A possible explanation for this might be that our study was performed in a tertiary referral hospital, whereas other studies were carried out in primary care facilities.[6,24] Moreover, one previous study only considered recommendations based on clinical guidelines,[17] whereas our study analyzed all recommendations because we wanted to explore the whole content of the counseling performed. Some other differences include the median appointment length, which was 17.27 minutes in our study (higher than the length of 12 minutes reported by the National Survey on User Satisfaction of Health Services, ENSUSALUD-2016,[29] and lower than the length of 25.4 minutes reported in another publication[14]), and the median counseling length, which was 1.72 minutes in our study (lower than the length of 3.3 minutes reported in another study[14]).

Family medicine was the specialty that gave the most recommendations, perhaps because it emphasizes prevention, education, and health promotion.[30] In general, our "positive" results came from this specialty; for example, appointments lasted longer (median, 35.97 minutes; range, 13.28–86.25 minutes). In contrast, cardiology was the specialty with the fewest recommendations, possibly because of its large number of patients, who visited the office either for cardiovascular diseases or preoperative cardiac evaluation. In addition, scales and measuring devices were lacking in cardiology offices.

Our findings suggest that obesity counseling offered during routine outpatient visits usually includes nonspecific recommendations that do not consider each patient's particular situation. Furthermore, they do not comply with reference guidelines. For instance, appointments in which physicians mentioned how much weight to lose and how long this takes did not comply with the Ministry of Health's recommendation to reduce weight by 0.5 to 1.0 kg per week.[25] Additionally, although physicians recommended that effective physical activity should be more intense than usual activities, which is consistent with the American Heart Association's advice,[31] they did not specify the frequency and duration. Finally, the counseling length (1.72 minutes) was lower than the recommended duration (3–5 minutes).[7]

Further research is required to determine how this counseling is performed in other clinical scenarios of Peru, such as in primary care, which focuses on prevention and health promotion. In addition, it is relevant to know how comfortable and confident physicians and patients feel about discussing this condition. It is also important to describe how physicians are trained in communication skills during their academic

formation. For example, publications in different contexts point out the impact of undergraduate, residency, and continuing medical training on counseling skills at outpatient visits.[32,33]

Our findings also suggest that it is necessary to establish a national clinical guideline for the prevention, diagnosis, and management of overweight and obesity at all healthcare levels in Peru, as in other countries. Although Peru has nutritional and physical activity recommendations for diabetes,[34,35] dyslipidemia, diabetic complications,[36] and hypertension[37] as well as educational publications for patients with obesity[38] and the general public,[39] specific directives are needed to standardize information for physicians and patients.

Our study has several strengths. First, this is the first study performed in Peru to focus on obesity counseling, and our results have opened an area for future research. Second, the audio recording methodology allowed a better approach to the real counseling that is given in routine outpatient visits, in contrast to indirect sources such as post-visit questionnaires or interviews. In addition, this method avoided the use of direct observers, thus respecting the privacy of the encounter.

We also acknowledge several limitations of our study. For example, because of the study design, the sample size was established for convenience sampling instead of calculated. Additionally, we studied outpatient visits at a tertiary referral hospital, where recovery activities predominate over preventive activities, although counseling should be part of the non-pharmacological management of all noncommunicable diseases. We included both first-time and revisiting patients, and interventions may vary between these two groups. Moreover, although the participants were not aware that obesity counseling was specifically being evaluated, the fact that they knew they were participating in a study may have influenced their usual performance. Finally, not all recommendations are equally important (advising a patient to lose weight is not equivalent to defining how much weight to lose); therefore, scoring the recommendations could be considered arbitrary. Our findings should thus be interpreted with caution because they are exploratory and cannot be extrapolated to other visits in the hospital or any other context, the main reason being that this was an observational study with small sample size.

Conclusion

This observational study showed that overweight and obesity counseling, which includes weight, diet, and physical activity, was addressed in one-third of the appointments. Additionally, most recommendations were superficial and incomplete and did not consider personalized therapeutic goals. The information obtained from these exploratory findings suggests that it is important to include weight, diet, and exercise counseling in a standardized and personalized way in outpatient visits so that patients with overweight and obesity receive equitable care regardless of the medical specialty visited or their background condition. However, because of the study design and previously mentioned limitations, further work is necessary to understand how healthcare providers give counseling in other scenarios, how physicians and patients perceive this process, and how medical training includes this important topic.

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Data availability statement

Because of the nature of this study, the audio transcriptions are to remain confidential and will not be shared.

Authors' note

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Author contributions

María Felix Torres-Nolasco: Conceptualization, Investigation, Data curation, Writing – Original Draft, Formal analysis
Eloy F. Ruiz: Conceptualization, Investigation, Data curation, Writing – Original Draft, Formal analysis
Carla Tarazona-Meza: Writing – Review & Editing, Visualization, Methodology
María Lazo-Porras: Writing – Review & Editing, Visualization, Methodology, Supervision
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Supplemental material

Supplemental material for this article is available online.

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