Counseling overweight patients: analysis of preventive encounters in primary care

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Abstract

Objective. The increasing prevalence of obesity requires particularly primary care providers to take action. The aim of this study was to analyze general practitioners (GPs) encounters with overweight and obese patients in primary care to test the hypothesis that patients with a BMI ≥ 30 kg/m² would have longer consultations focusing on lifestyle-related issues like nutrition and physical activity than those with a BMI < 30 kg/m².

Design. Cross sectional comparison of audiotaped encounters of patients with a BMI ≥ 30 kg/m² and those with a BMI < 30 kg/m².

Setting. Twelve GP surgeries in Berlin, Germany.

Participants. Fifty patients who agreed to have preventive check-up encounters audiotaped.

Main Outcome Measures. Based on the Roter Interaction Analysis System (RIAS) we assessed duration of encounter and the prevalence of GP statements regarding cardiovascular risks, nutrition and physical activity.

Results. An increased BMI was found to be a predictor for the length of encounters (P = 0.01), whereas the content of talks was mainly determined by the individual of GP and sex of the GP. Statements regarding cardiovascular risks were most frequent, followed by those regarding nutrition and physical activity. In this study the assessed physiological parameters were not associated with the specific contents of preventive encounters like nutrition or physical activity (P > 0.05).

Conclusions. Our results indicate that GPs rarely use the check-up program to conduct lifestyle consultations with obese patients. Barriers to lifestyle counseling and possible solutions are discussed with a view to promoting individualized and target management of overweight patients.

Keywords: cardiovascular risk, counseling, guideline adherence

Introduction

Obesity is increasing worldwide [1]; in Germany less than half of female and only one-third of male population shows a normal body weight, 20% of German population is classified as obese [2]. This is of concern since obesity elevates the risk for cardiovascular diseases like hypertension, coronary heart disease and diabetes mellitus. The WHO [1] called obesity an epidemic phenomenon which demands long-term care to support lifestyle changes. Particularly general practitioners (GP) have an early opportunity for motivating high-risk patients to follow weight reduction programs before associated diseases become manifest. Overweight patients tend to see their GP more frequently than others [3], which enables GPs to provide continuous care. A good patient–physician relationship and particularly the communication skills of GPs are important factors for patient adherence as well as for the ultimate success of a medical strategy [4]. The coordinating function of GPs in the long-term management of obesity is emphasized [5]. In particular, GPs are responsible for counseling overweight and obese patients and preventing associated diseases.

Several barriers to lifestyle counseling in primary care have been identified. They include lack of self-efficacy, lack of time and negative attitudes towards obese people [6–8]. Physicians also blame inadequate financial rewards for the failure of obesity treatment [9].

However, guidelines [5, 10] for therapy of obesity agree on the following points: patients with a BMI above 30kg/m² and those with a BMI of 25–30 kg/m² accompanied by
other cardiovascular risks, co-morbidities or psychosocial strain should be assisted in terms of nutrition counseling, physical activity and behavioral training. Studies have reported positive health effects of brief nutrition and physical activity counseling by GPs [11–13]. Successful long-term weight loss maintenance requires continuity of care and intensive follow-up after interventions [14].

Kushner [6] showed that the majority of GPs regarded nutrition consultation as their responsibility. But lifestyle change counseling in general is not always performed in nutrition consultation as their responsibility. But lifestyle counseling in general is not always performed in primary care. Eaton et al. [15] reported that only 33% of obese patients in their sample received nutrition counseling. Advice on diet and physical activity is more likely in patients with a high BMI [16, 17]. Wadden et al. [18] reported that obese patients had high confidence in the general care delivered by GPs, but 75% stated that their GP did not help them at all with weight management.

Recent research has emphasized gender-related differences in physicians’ counseling habits. It was shown, for example, that female GPs offered more preventive services [19]. Different communication patterns of female and male GPs were investigated [20], and the more affective and emotional style of female physicians seems to fit the needs of overweight and obese patients better than counseling by male GPs.

Since GPs play a crucial role in the long-term care of overweight and obese patients, their counseling in preventive encounters is of particular importance. To our knowledge, previous studies on this topic were mainly based on patient and GP self-reported data, whereas the present study used objective data such as audiotaped consultations which diminishes biases due to social desirability and increases validity, reliability and objectivity of study results.

We hypothesized that patients with a BMI > 30 kg/m² and/or cardiovascular diseases had longer encounters than those with a BMI ≤ 30 kg/m². We also hypothesized that statements regarding cardiovascular risks, nutrition and physical activity were made more frequently during encounters with these patients than during talks with those who had a BMI ≤ 30 kg/m² and no cardiovascular risk other than overweight.

Methods

We conducted a cross-sectional study with primary care physicians working in solo practices. GPs were recruited by the Local Board of Health in Berlin. Seventy GPs were asked to participate, and 12 accepted. No information was available on GPs who refused to participate. GPs audiotaped their final routine therapy consultation with overweight patients (BMI ≥ 25 kg/m²) participating in a regular preventive check-up program. The Check-up 35 is a primary preventive health examination offered by GPs at two-year intervals to all persons in Germany who are over 35 and have public health insurance. This instrument is designed to assess the cardiovascular risk status and comprises a physical examination, determination of several clinical parameters such as blood pressure and cholesterol, a medical history, and a summary consultation on risk factors, their consequences and possible interventions. There are neither guidelines nor specific instructions to assist GPs in how to conduct such a summary encounter. Eligible patients were 35 or older, spoke German and had come to their GP for a biennial Check-up 35. Exclusion criteria were depression, other serious mental disorders, severe cancer and cognitive handicaps. Participants completed a questionnaire designed to collect personal and demographic information. Three patients were excluded because they had a BMI > 40 kg/m² and probably received supportive treatment from other healthcare professionals. The 50 remaining encounters were assessed in this study. Informed consent for publication was obtained from all participants and GPs. The study was approved by an independent ethics committee.

Audiotaped sessions were analyzed for communicative behavior in medical encounters using the Roter Interaction Analysis System (RIAS) [21]. The unit of analysis is the smallest meaningful string of words. All statements were assigned to mutually exclusive categories. The original system contains 16 categories, seven for affective and nine for instrumental behavior. For this study, we modified categories of instrumental behavior to fit relevant issues of check-up settings (Table 1). Modification of RIAS to suit the specific study needs is suggested by the authors [21].

Main foci in dialogues with overweight patients are cardiovascular risks (including overweight), nutrition counseling and physical activity. Each statement was coded into instrumental behavior in medical encounters using the Roter Interaction Analysis System (RIAS) [21]. The unit of analysis is the smallest meaningful string of words. All statements were assigned to mutually exclusive categories. The original system contains 16 categories, seven for affective and nine for instrumental behavior. For this study, we modified categories of instrumental behavior to fit relevant issues of check-up settings (Table 1). Modification of RIAS to suit the specific study needs is suggested by the authors [21].

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Analyses

To create comparable encounters regardless of their differing lengths, we calculated means per minute for relevant

Table 1 Adapted version of RIAS coding scheme for instrumental behavior

<table>
<thead>
<tr>
<th>Code</th>
<th>Cardiovascular risks/nutrition/physical activity/others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>Biomedical/therapeutic</td>
</tr>
<tr>
<td></td>
<td>Lifestyle/social context</td>
</tr>
<tr>
<td></td>
<td>Psychosocial/emotions</td>
</tr>
<tr>
<td>Giving information</td>
<td>Biomedical/therapeutic</td>
</tr>
<tr>
<td></td>
<td>Lifestyle/social context</td>
</tr>
<tr>
<td></td>
<td>Psychosocial/emotions</td>
</tr>
<tr>
<td>Counseling</td>
<td>Biomedical/therapeutic</td>
</tr>
<tr>
<td></td>
<td>Lifestyle/social context</td>
</tr>
<tr>
<td></td>
<td>Psychosocial/emotions</td>
</tr>
</tbody>
</table>
variables. The BMI was based on patients’ self-reported height and weight. After examining descriptive statistics and bivariate associations, we used ANOVAs and multiple linear regression analysis to determine the association between variables. The duration of the encounter and the frequency of GPs’ statements regarding cardiovascular risks, nutrition and physical activity served as dependent variables. The latter three were rated by RIAS. Ten percent of the dialogues were coded independently by two trained raters, and intrarater reliability was 95%. Differences in coding were discussed until a consensus was reached. Independent variables were six patient characteristics—gender, BMI, age, blood pressure, cholesterol level and social class index [22]—and two GP variables: GP code and gender. All analyses were conducted using SPSS16.0.

**Results**

**Sample characteristics**

Fifty audiotaped consultations were delivered by eight female and four male GPs with a mean age of 51 years. All GPs had a normal body weight with a mean BMI of 22.57 kg/m². The majority worked in single practices and provided an average of four consultation talks for this analysis. Thirty-one encounters (62%) were performed with female patients, mean age of patients was 58.6 years and mean BMI 31.45 kg/m². Sixteen patients showed a BMI between 25 and 30 kg/m². Patients had been consulting their GP for an average of 6.4 years. At least one cardiovascular diagnosis was recorded in 64% of the patients, normal blood pressure (<140/90 mmHg) in 67% and a normal cholesterol level (≤200 ml/dl) in 42.6%. An elevated blood pressure was detected in 35% of patients with a BMI > 30 kg/m², respectively, 29% of patients with a BMI between 25 and 30 kg/m². Fifty seven percent of patients in both BMI groups showed an elevated level of cholesterol (>200 ml/dl). Differences in pre-existing cardiovascular conditions related to patient’s gender were only found for blood pressure: 16% of male patients vs. 44% of female ones showed an elevated blood pressure (P = 0.042). Patient characteristics did not differ among GP practices.

Table 2 shows means, SDs and ANOVA results for the length of talks as well as for statements regarding cardiovascular risks and nutrition. An encounter lasted 8:27 min on the average, varying between 1:45 and 32:54 min. Encounters with female patients and patients of both gender with a BMI ≥ 30 kg/m² lasted about twice as long as the ones with male patients and patients with a BMI < 30 kg/m².

Statements regarding cardiovascular risks were most frequent and could be found in all encounters. Utterances related to cardiovascular risks were often associated with further information about laboratory tests: ‘But still, your blood pressure...170/100 is way more than we want to have. And the level of blood glucose causes a bit concern. Your level of cholesterol is fantastic, 180, this stayed at the same level. But the sugar is increasing. It was 111 and is now 124...’ (GP1).

The frequency of statements varied between 0.64 and 9.91 per minute. In consultations of male physicians with male patients significantly more cardiovascular utterances compared with other gender dyads (combination of patient’s and GP’s gender) were found (M = 4.88, P = 0.003). In talks between two women in average 2.3 cardiovascular statements per minute regarding this topic were addressed. The individual and gender of GPs were significantly related to the frequency of addressing cardiovascular risks (Table 2). Statements about nutrition were identified in 78% of the dialogues, their frequency varying between 0 and 6.76 per minute.

Stepwise regression analysis involving patient characteristics adjusted for the person of the GP identified the patient’s gender as a predictor for the length of talks (Table 3). Regression analysis involving GP characteristics identified the code and gender of GPs as predictors for the length of talks (R² = 0.241). In particular, talks between a female patient and a female physician lasted significantly longer.

### Table 2 ANOVAs for length of talks and GPs’ statements regarding cardiovascular risks and nutritiona

<table>
<thead>
<tr>
<th></th>
<th>Length of talks (in min)</th>
<th>Statements regarding cardiovascular risks (per min)</th>
<th>Statements regarding nutrition (per min)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>P</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>8:27 (6:30)</td>
<td></td>
<td>2.9 (1.7)</td>
</tr>
<tr>
<td>Male</td>
<td>10:02 (7:22)</td>
<td>0.027</td>
<td>2.6 (1.4)</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 30 kg/m²</td>
<td>5:53 (3:40)</td>
<td></td>
<td>3.4 (1.9)</td>
</tr>
<tr>
<td>≥ 30 kg/m²</td>
<td>10:03 (7:13)</td>
<td></td>
<td>3.1 (2.0)</td>
</tr>
<tr>
<td>GP variables</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Person</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10:05 (6:56)</td>
<td>&lt;0.001</td>
<td>2.4 (0.9)</td>
</tr>
<tr>
<td>Male</td>
<td>4:39 (2:59)</td>
<td>0.005</td>
<td>4.1 (2.4)</td>
</tr>
</tbody>
</table>

aSignificant results are in boldface.
longer (Mean = 11.69 min, \( P = 0.004 \)) than other consultations. Talks between two men had a mean duration of 2.94 min. Stepwise regression analysis adjusted for the person of the GP identified none of the patient variables as predictors for the frequency of addressing either cardiovascular risks or nutrition. Stepwise regression analysis involving the gender and code of the GP identified only the latter as a significant predictor for the frequency of addressing nutrition (\( R = 0.273 \)). Thus, how often nutrition was mentioned at the check-ups depended mainly on the GP. But, gender-related differences were found when analyzing dyads: in talks between two women significantly (\( P = 0.04 \)) more utterances per minute regarding nutrition (\( M = 0.35 \)) were identified compared with consultations between two men (\( M = 0.01 \)). Female physicians address nutrition in same intensity to male patients.

Physical activity was brought up in 70\% of encounters with overweight and obese patients. The frequency of statements per minute was 0.4 on the average and varied between 0 and 2.7. None of the GP or patient variables were significantly related to this dependent variable. But differences regarding gender dyads were carried out: female physicians addressed in average 0.78 utterances per minute regarding physical activity to male patients, where as they address only 0.36 to their female patients (\( P = 0.04 \)). Between two men only 0.10 statements per minute regarding this issue were identified which differs significantly from all other dyads (\( P = 0.02 \)).

None of the assessed physiological variables (e.g., cholesterol level, blood pressure) were related to any of the RIAS variables.

### Discussion

The aim of the study was to gain a detailed insight into the contents of preventive talks with overweight and obese patients in daily GP practice. It was hypothesized that physiological variables like the BMI, blood pressure and cholesterol level are related to the length and content of encounters. The mean encounter length of 8 min recorded here coincided with findings reported in the literature [23]. In line with other studies [24–26], our data showed that encounters are longer with female GPs and in female dyads. Moreover, encounters in our sample are significantly longer with female and obese patients, which substantiate research indicating that female benefit more from preventive consultations than male patients [16].

Our hypothesis that an elevated BMI is associated with longer consultations has been confirmed. Deveugele et al. [27, 28] reported that the length of talks depended on physicians’ perceptions of psychosocial problems. GPs may pay more attention to an elevated BMI as a self-evident criterion.

Statements regarding cardiovascular risks were most frequent, probably due to the nature of an encounter regarding cardiovascular prevention. Moreover, male GPs were found to talk about cardiovascular risks more than their female counterparts, which is in contrast to studies reporting that more preventive services are offered by female than by male physicians [19, 20]. However, especially the biomedical topics like laboratory results that comprise a major part of Check-up 35 dialogues are rather rational issues and may therefore be a typical domain of male GP counseling activity. This is supported by our finding that in male dyads compared with female ones significantly more cardiovascular-related statements are addressed. Surprisingly, patient’s sex was not related to the frequency of addressing cardiovascular risks, even if significantly more women in our sample suffered from hypertension.

Nutrition counseling was less frequently addressed by GPs. Striking laboratory results or an elevated BMI did not determine whether GPs conducted a more intensive talk about diet behavior. However, GPs differ a lot in how intensively they talk about this issue. Moreover, female GPs tend to do significantly more counseling about nutrition behavior. Talking about cardiovascular risks was identified as a ‘male domain’, while nutrition counseling seems to be a ‘female’ area. This effect is even stronger when comparing female and male patient–doctor dyads. Lurie et al. [29] reported that female GPs were more focused on preventive services and attached

### Table 3

| Patient characteristics | Length of talks | | | Statements regarding cardiovascular risks | | | Statements regarding nutrition | | |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                         | \( B \) | \( P \) | \( R^2 \) | \( B \) | \( P \) | \( R^2 \) | \( B \) | \( P \) | \( R^2 \) |
| Gender | -5.3 | 0.01 | 0.25 | 0.09 | 0.06 | 0.67 | 0.10 | 0.97 | 0.03 | 0.84 | 0.02 | 0.91 |
| BMI | 0.25 | 0.10 | -0.09 | 0.54 | 0.16 | 0.25 | 0.01 | 0.97 | 0.03 | 0.84 | 0.02 | 0.91 |
| Age | 0.01 | 0.97 | 0.03 | 0.84 | 0.02 | 0.91 | 0.12 | 0.45 | -0.12 | 0.42 | 0 | 1 |
| Blood pressure | -0.12 | 0.45 | -0.12 | 0.42 | 0 | 1 | 0 | 1 | 0.15 | 0.01 | -0.17 | 0.57 |
| Level of cholesterol | -0.10 | 0.54 | 0.154 | 0.02 | 0.88 | 0.157 | -0.02 | 0.92 | 0.244 |
| Social status | -0.27 | 0.07 | 0.25 | 0.09 | -0.58 | 0.57 | 0 | 1 | 0.15 | 0.01 | -0.17 | 0.57 |

\( ^a \)Assessed variables are in boldface.
more value to them. Female GPs communicate about partnership building, encourage questions from patients, and are more likely to talk about psychosocial problems [24]. This special communicative pattern may facilitate delivery of preventive services, particularly in conjunction with difficult lifestyle counseling. Preventive services and the related communication regarding lifestyle counseling may change due to the increasing number of female medical students.

On the whole, the talks rarely addressed physical activity, which indicates that GPs are not active in motivating their patients to increase their physical activity. Female physicians seem again to be more active in counseling this aspect of lifestyle, especially when talking to male patients.

In summary, present analyses suggest that GPs are not very active in lifestyle-related counseling of obese patients. One explanation can be seen in physicians’ perception of heavier patients as being less likely to comply with medical advice and benefiting less from counseling [30]. Considering patient’s perspective, research suggests that the level of BMI is associated with an increase in patient’s trust in GP’s problem solving competencies [31].

Another explanation for low rates of counseling activities is delivered by Befort et al. [32]: physicians tend to underestimate patients’ motivation regarding weight management. Furthermore, GPs and patients differ in their attributions regarding the causes, consequences and control of obesity [33, 34], which constitutes another barrier to consultations. Additionally, some GPs may not bring up weight issues for fear of negative patient reactions or for lack of confidence in their communication skills [6–9].

Several studies have shown that GPs have limited knowledge about nutrition and physical activity in the management of obesity and that they have difficulty in effectively communicating these issues [35, 36]. These studies concluded that clinical guidelines and supplementary training are needed. Potential for improving the obesity management skills of GPs may be assumed. Kushner [6] suggests that continuous obesity care could best be conducted by a multidisciplinary team of healthcare providers. Primary health care in Germany has been in a state of flux, and physicians have been delegating tasks to other health professionals, e.g. trained nurses. According to Zuzelo et al. [37], nurses show more positive attitudes towards obese patients and are more concerned about respectful care, whereas many studies have reported negative attitudes of physicians towards obese patients [7, 8, 38–40].

Check-up 35 is an additional funded consultation program that allows GPs to provide counseling to high cardiovascular risk patients. It is remarkable how widely consultations vary among GPs for this patient sample. However, qualitative analysis of these encounters showed that a number of GPs use the check-up program for individual weight counseling tailored to the patients’ individual life circumstances and narratives [41].

Guidelines for obesity treatment are only partly implemented by GPs in check-up encounters. Objective health parameters like the BMI or existing cardiovascular diseases do not influence GPs counseling style, whereas the personality of the GP is a main determinant of the content of check-up encounters. This individuality is a chance for the counseling process but can easily turn into a barrier if lifestyle counseling is rarely performed.

Our study results are limited by the small sample size and a lack of sufficient variance in several variables. Patients’ BMI was assessed using self-reported data on weight and height, and overweight persons tend to underreport their weight [42]. GP participation in this study was voluntary, and it is likely that those who took part were especially interested in improving their communication skills. It remains unclear how many patients received weight loss counseling prior to the encounters analyzed here.

Major strengths of our study are the objective data provided by GPs and the use of a standardized and well-validated assessment instrument.

Conclusion

Our analysis shows that encounters differ widely among GPs and that lifestyle counseling is rarely performed. Our hypotheses is only partly confirmed: only an increased BMI is a predictor for the length of talks, but not for the frequency of addressing specific topics related to overweight like nutrition and physical activity. Other cardiovascular conditions do not determine the length and content of encounters. Guidelines assisting GPs in how to conduct a structured consultation in terms of lifestyle change need to be implemented. Consultations must be adapted to patients’ mental and physical health [43], and still GPs should be free to conduct ‘their’ kind of encounter. On the other hand, they should be supported in coping with difficulties involved in lifestyle counseling. They could, for example, receive training in the use of special communication techniques. Prevention in primary care should focus on the development of individualized and targeted treatment. Further research is needed to identify the strengths and weaknesses of preventive encounters and to determine what extra training is required for GPs and other healthcare providers. Summing up, it can be stated that the long-term continuing care provided by GPs is an inadequately exploited potential in obesity treatment.

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References


