Attending nutrition counselling of the working-age subjects

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Abstract

Introduction: Health status and the presence of health problems can be the primary reasons for nutritional-counselling visits. Based on the information that we have gained from the counselling dietitian, from 2009 to 2015, we have analysed the characteristics of subjects who received nutritional counselling. The analysis covered data on health status, anthropometric characteristics, and other physical and psychological problems. *Methods:* We have analysed data on 863 working-age population (198 men and 665 women, of the average age of 42 years), who visited a nutritional dietitian from 2009 to 2015. Measurements of body composition were collected longitudinally, for each person and for each subsequent nutritional counselling separately. *Results:* Most of the participants were healthy, and their average age was 42 years. Only a third of them had a BMI belonging to the group of obesity, and 70% of the participants even stood within normal weight body mass index classifications. Dietary counselling is numerically less attended by men. Women are those who have most visits and are present in several sessions. *Discussion and conclusions:* The initial state of health does not provide information on the nutritional interventions, nor does it forecast the number of consultations. By analysing the data, we have obtained important information on the characteristics of persons attending nutrition counselling, and a better understanding of those factors which could have a major impact on the success or likelihood of a successful outcome of nutritional counselling in the future. *Key words:* nutritional counselling, successful outcome, body mass index, age, health

In 2010, overweight and obesity were estimated to cause 3.4 million deaths and 3.9% of year of life lost. Globally, between 1980 and 2013 the proportion of adults with a body mass index (BMI) greater of 25 increased (Ng et al., 2014). Because of its widely known health risks, obesity has become a major global health challenge, and has led to widespread calls for regular monitoring of nutritional support and more effective intervention (Dansinger et al., 2007).

The role of a dietitian is to obtain information from the patient, which will be essential to offer the appropriate nutritional support (National Institute of Health et al., 2000). During the nutritional counselling, it is important to collect anthropometric data, and to identify in a direct or indirect interview the clinical and psychological status of the patient (Gibson, 2005). The skills of dietitians are shown in their capacity of obtaining the required information, but mostly in giving returned information suitable for the patient in the way that nutritional assessment will be even more successful (Lacey and Pritchett, 2003).

The establishment and implementation of a standardised nutrition care process and model were identified as a priority in meeting goals, and in having predictability of nutritional assessment (Lacey and Pritchett, 2003). The average effect of dietary counselling on weight changes in adults over time suggests a change of approximately 2 BMI units over 12 months (Dansinger et al., 2007), while in combination with physical activity the same results are reached after 6 months (Marion et al., 2007). However, nutritional assessment is not always successful, and why some people succeed at adopting and sustaining behaviors associated with weight control, while others, undergoing similar treatment, do not, remains unknown. Personal factors probably play a very important role in determining success rate (Teixeira et al., 2004).

In a descriptive analysis researching the weight loss experience in correlation with health, Jeffery et al. (2004) found out how people so often fail in maintaining behaviours associated with weight loss (e.g. health nutrition, regular physical activity), because they do not find them worth trying. Indeed, some researches have not come to the conclusion of a correlation between motivation and successful weight loss. This is highlighted by the fact that even 60% of people who start nutritional assessment do not even finish the process. This shows how motivation is not the only factor which contributes to cost benefit evaluations with respect to weight loss (Jeffery et al., 2004).

The literature shows many different factors which may have influence on the weight loss process and on the health status of the patient, but it does not define the strength of the influence of every singular factor. There are different combinations of these factors, and this is the reason why it is not known which one has more relevance on a successful or unsuccessful outcome of the nutritional assessment.

Methods

The participants were women and men of different ages, who attended nutritional assessment by the nutritional dietitian Lidia Mosca in the period between 2009 and 2015. This nutritional dietitian operates in Italy.

The data, which were collected during nutritional assessments, describe patient information. The whole database contains 951 samples, but we only chose those that meet our limitations for analysis. The chosen parameters were demographic data (gender, age) and physical data (body mass – kg, body height – cm, BMI – kg/m², health status). The final database contains information about 863 working-age population (198 men and 665 women), with an average age of 42 years (from 20 to 86 years old; SD = 12.13 years).

Measurements of body composition were collected longitudinally, separately for each person and for each subsequent consultation. The purpose of the analysis was to identify the characteristics of the subjects who attended nutritional counselling depending on their actual attending the counselling, and on their health status, gender, and age.

Results

Figure 1: Analysis of the consultations from 2009 to 2015.

Figure 1 shows the results of the analysis of attendance to every consultation from 2009 to 2015. 864 people attended the first consultation, but only 458 participants (53.07 % of the initial number) came to the following consultation. The decline in the percentage of participants who did not return to the next consultation gradually decreased.

Most of the participants who attended nutritional counselling did not declare any health problem. This is shown in table 1, which analyses of the health status of the attendees of every consultation.

Table 1: Physical, psychological, and other health problems of the participants attending consultations from 2009 to 2015.

Health status												
C1	N ²	Health (%)	Gast. ³ (%)	Endoc. ⁴ (%)	Blo. ⁵ (%)	Resp. ⁶ (%)	Neo. ⁷ (%)	Neuro., musc., bon. ⁸ (%)	Derma. ⁹ (%)	Urinary, repro. ¹⁰ (%)	Emot., behav. ¹¹ (%)	Comb. ¹² (%)
		%	%	%	%	%	%	%	%	%	%	%
1	n = 863	64.07	12.39	2.31	4.28	0.34	0.92	1.96	0.92	0.81	4.63	7.30
2	n = 458	63.31	15.53	2.83	3.71	0.21	0.87	1.31	1.09	0.87	4.14	7.86
3	n = 258	60.64	12.40	3.10	5.42	0.00	0.38	1.93	1.55	1.16	4.65	8.91
4	n = 156	55.76	15.38	3.20	5.76	0.00	0.64	1.28	2.56	0.64	5.12	9.61
5	n = 85	48.23	16.47	3.52	8.23	0.00	1.17	2.35	1.17	1.17	8.23	9.41
6	n = 57	49.12	14.03	0.00	7.01	0.00	1.75	1.75	1.75	1.75	8.77	14.03
7	n = 42	45.23	14.28	0.00	9.52	0.00	2.38	2.38	2.38	0.00	7.14	16.66
8	n = 34	50.00	14.70	0.00	5.88	0.00	2.94	2.94	2.94	0.00	5.88	14.70
9	n = 25	56.00	12.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	8.00	16.00
10	n = 21	57.14	14.28	0.00	4.76	0.00	0.00	0.00	0.00	0.00	9.52	0.52
11	n = 15	53.33	13.33	0.00	6.66	0.00	0.00	0.00	0.00	0.00	13.33	6.66
12	n = 10	50.00	20.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00
13	n = 9	55.55	11.11	0.00	11.11	0.00	0.00	0.00	0.00	0.00	22.22	0.00
14	n = 9	55.55	11.11	0.00	11.11	0.00	0.00	0.00	0.00	0.00	22.22	0.00
15	n = 7	71.42	0.00	0.00	14.28	0.00	0.00	0.00	0.00	0.00	14.28	0.00
16	n = 6	66.66	0.00	0.00	16.66	0.00	0.00	0.00	0.00	0.00	16.66	0.00
17	n = 6	66.66	0.00	0.00	16.66	0.00	0.00	0.00	0.00	0.00	16.66	0.00
18	n = 5	60.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00
19	n = 2	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
20	n = 2	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
21	n = 2	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
22	n = 2	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
23	n = 2	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00
24	n = 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00

Notes: ¹C = consultation; ²N = number of participants; ³Gast. = gastrointestinal diseases; ⁴Endoc. = endocrine disorders; ⁵Blo. = blood disease; ⁶Resp. = respiratory disease; ⁷Neo. = presence of neoplasm; ⁸Neuro., musc., bon. = neurological disorders, muscular disorders, bone disease; ⁹Derma. = dermatology disease; ¹⁰Urinary, repro. = urinary disease, reproductive system disease; ¹¹Emot., behav. = emotional lability, behaviour disorders; ¹²Comb. = combination of more disorders/diseases.

Figure 2: Age of the participants on every consultation from 2009 to 2015.

Picture 2 represents the average age of the participants who attended nutritional counselling in the period between 2009 and 2015. A first consultation was attended by 863 participants, whose average age was 42 years (SD = 12.13 years; the youngest being 20 years old; the oldest, 86 years old).

Our next step was to divide the participants of the first consultation according to their BMI group. The BMI groups are standardised by the World Health Organisation. We calculated the BMI of the participants with anthropometric data using the formula (body mass - in kilograms - divided by the square body weight - in square meters).

2% of the participants scored in the BMI group classification of underweight, 36% were in normal range, 32% pre-obese. Obese participants represented 30% of all (class I 20%, class II 7%, class III 5%).

Table 2: Division of the attendees of the first consultation (N = 863).

BMI (kg/m ²)	Classification	N	%
Less than 18.49	Underweight	15	2
18.5–24.9	Normal range	307	36
25.0–29.9	Overweight (pre-obese)	277	32
30.0–34.9	Obese class I	169	20
35.0–39.9	Obese class II	56	7
40.0 or more	Obese class III	39	5
TOT		863	100

Discussion

The results of the analysis of the attendance of every consultation from 2009 to 2015 shows that only half of the participants who attended the first nutritional counselling came to the second consultation. The decline in the percentage of participants who did not return to the following consultation gradually decreased, probably due to the higher motivation of the participants who continued the nutritional assessment. However, in the interpretation of the results we also need to consider that the fee charged for the nutritional counselling prob-

ably had an impact on the choice of the participants. We found it interesting to investigate the motivational factors of those participants who continued the nutritional assessment for a long period.

In the identification of pre-treatment factors related to weight loss in obesity treatment, Elfhag and Rössner (2010) found out what could be the strongest factor for predicting the treatment outcome. Several factors have been associated with weight loss and attrition: contrasting feeling about the nutritional assessment, male gender, younger age, fast or slow weight loss (Elfhag and Rössner, 2010). Most of these aspects are correlated with psychological factors, such as the impact of a lower quality of life, emotional lability, and eating disorders (Elfhag in Rössner, 2010).

Berkatis et al. (2000) investigate gender differences in the utilization of health care services. The study has shown that women had a significantly higher average number of visits in their primary care clinics and diagnostic services than men. Our results also show a higher use of nutritional counselling by women. Knowing that most of the participants did not declare any health problem, we can conclude that probably women care about their future health more than men.

In a cross-sectional study, Turconi et al. (2012) investigated the anthropometric data of the population of northern Italy. Most of the subjects were overweight (average BMI = 28.4 kg/m²), only 30% of the sample had adequate dietary status. In our analysis of the BMI classification of the participants, we noticed that the participants were not exclusively obese people (BMI > 30), but that 70% of the participants had a BMI lower than 30. Thus, the reasons why a normal-weight person decides to attend nutritional counselling include a current disease (or prevention of health comorbidities), and nutritional assessment for physical activity or for an alternative food regime.

In the analysis of health status of the participants we discovered the presence of a health problem or pathological state. The health status of the participants was collected by direct interview and not all the participants gave us a medical confirmation eventual present disease or health comorbidity. Having many different information about health status, we decided to divide them in different groups: gastrointestinal disease, endocrine disorders, blood disease, respiratory disease, and presence of neoplasm, neurological disorders, muscular disorders, bone disease, dermatology disease, urinary disease and reproductive system disease, emotional lability and behavior disorders, combination of more disorders/diseases.

Most of the participants who attended nutritional counselling did not declare any health problem. The analysis of the health status of the attendees showed us that the health status does not give a prediction of the duration of the nutritional assessment. We find interesting the fact, why is the prevalence of health attendees so high. A similar phenomenon observed Milunpolo et al. (1997) in Finland population, where noticed a high number of physician contacts per year also if the stability of perceived health status was relatively good.

In every nutritional counselling represented health people at least half of all participants. This may confirm us that health people and people, who do not have health problems, care more for their health. In the case, we could confirm our hypothesis and observing the low percentage of participants with health comorbidities, it is clear, that the presence of a health disorder or disease is not a factor that have a big influence on motivation during nutritional assessment.

In the interpretation of our results of participants gender, anthropometric data and health status looking for those factors which may have influence on the weight loss process, we were interested who mostly attended nutritional assessment between young and older people. The results showed us that the participants of the first visit were old from 20 to 86 years. Standard deviation then changed during the next visits and it went nearer to the mean. People, who attended more visits, were older – between 40 and 45 years old.

Conclusions

Based on our results, we can say that nutritional counselling are mostly visited by people who are in average 42 years old, healthy and with BMI in normal range, which means that the participants were not exclusively obese people (BMI > 30), but 70% of the participants had a BMI lower than 30. In every nutritional counselling represented health people at least half of all participants. This may confirm us that health people and people, who do not have health problems, care more for their health. Regarding to our results it is clear, that the presence of a health disorder or disease is not a factor, which have a big influence on motivation during nutritional assessment. Thus, the reasons why a normal-weight and health person decides to attend nutritional counselling include a current disease (or prevention of health comorbidities), and nutritional assessment for physical activity or for an alternative food regime. However, in the interpretation of the results we also need to consider that the fee charged for the nutritional counselling probably had an impact on the choice of the participants.

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