

Recent body-weight changes and weight loss practices in the European Union

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Abstract

Objectives: The aim of this paper is to describe recent weight changes and weight loss practices in the EU, and in particular to describe the group of subjects who were in a recent state of weight gain.

Design and subjects: Overall, 15 239 adults aged 15 years and upwards composed of 1000 from each EU member state were selected to complete the interview-assisted face-to-face questionnaire. In each member state, sample selection was quota-controlled to ensure national representativeness.

Results: This survey points to a fairly alarming tendency of more normal weight, overweight or obese European people being in a state of weight gain rather than weight loss. But it is also worrying that almost a fifth of underweight people are in the process of losing more weight. The recommendations for interventions to promote weight loss might be somewhat different between countries in the EU as the common weight loss practices differ between such countries. Overall, a campaign alone may not be effective in encouraging people to do more physical activity in Europe. Additional methods should be found. Furthermore, a combination of diet and exercise as a method of weight control is underestimated or undervalued by the general population who are either overweight or obese.

Keywords
Weight changes
Weight loss practices
Attitudes
European Union

Increasing weight has long been a serious problem in affluent countries, and it is becoming a problem in developing countries. The average weight of American adults is increasing, despite vast sums being spent on attempts at weight loss¹. Weight control practices are common in all wealthy countries. In Australia, for instance, in addition to the 20% of adults who were attempting to lose weight, 22% were actively trying to maintain their present weight or to avoid weight gain². Already, 15–16-year-old individuals may feel too fat and use some form of weight control strategy³. A study of over 16 000 students from 21 European countries indicated that 43% of women and 17% of men want to lose weight, and 14% and 3%, respectively, said they were dieting at the time⁴. This study showed also that healthy dietary practices were strongly associated with beliefs in the importance of diet for health. Further, substantial gender differences were observed, with women showing healthier eating habits, and feeling overweight more often than men. Thus, a substantial number of people in Europe could be expected to be in a state of weight change. This view is supported, for example, by the fact that a significant weight loss may be difficult to maintain. In some

studies it has been reported that after a behavioural weight loss programme less than 3% of the subjects were at or below their post-treatment weight on all follow-up visits⁵.

A desire to lose weight is understandable since obesity and weight loss have diverse powerful effects on health and well-being^{6–11}. Both diet and exercise seem to be important in long-term maintenance of substantial, successful weight loss¹². In line with this, the weight loss practice most frequently reported by overweight women has been increasing physical activity and eating fewer calories¹³. Physical activity has been associated with long-term maintenance of weight loss¹⁴. For example, Kayman *et al.*¹⁵ observed that 90% of formerly obese women who maintained a lower weight exercised regularly. But the maintainers were also more inclined to use a devised personal eating plan compared to the relapsers, suggesting that a combination of physical activity and diet is optimal for successful weight loss. Knowledge about recent weight changes and weight loss practices is lacking. This is particularly true at national levels, making it difficult to plan effective programmes to increase health and well-being. Thus, the aim of this paper is to

describe recent weight changes and weight loss practices in the EU and, in particular, to describe the group of subjects who were in a state of weight gain.

Methods

Approximately 1000 adults, aged 15 years and upwards, from each EU member state were selected to complete the interview-assisted face-to-face questionnaire. Overall 15 239 participants completed the questionnaire. In each member state, participant selection was quota-controlled to make the sample nationally representative. These quotas were defined by various sociodemographic factors based on the most recent official statistics. The interviews were carried out as part of 'Eurobus', an international group of market research organizations offering omnibus research in each member state for the purposes of conducting intercountry surveys.

During the interview participants were presented with 12 questions, among them a question on recent body-weight changes and a question of weight loss practices. Recent body-weight changes were determined by asking 'In the last 6 months have you (1) gained weight, (2) lost weight, (3) stayed at the same weight, (4) don't know?' Weight loss practices were collected by asking 'Are you currently trying to lose weight: (1) by dieting, (2) by exercise or physical activity, (3) by both diet and exercise, (4) by medication, (5) by other means, (6) not trying to lose weight?' The interview also included questions about the participant's attitudes to physical activity and exercise. They were asked whether they agreed with the following statements (strongly agree/tend to agree/tend to disagree/strongly disagree): 'Physical activity/exercise has numerous beneficial effects on health'; 'I do not need to do more physical activity/exercise than I already do'; 'Health professionals, e.g. doctors, are good sources of information on the health benefits of physical activity/exercise'; 'A campaign in my locality aimed at increasing participation in physical activity/exercise would be effective in encouraging me to do more'. Furthermore, respondents were asked which factors have the most important influence on their personal weight gain. Sample selection and questionnaire administration have been described more precisely elsewhere¹⁶.

Results are given for the combined EU sample weighted for population size to ensure that those member states with a large population size were given relative emphasis in the context of the total EU, and for national profiles in terms of sex, age and regional distribution. Emphasis was on a descriptive analysis of the responses from the overall combined EU sample and from individual member states. This was partly due to the very large sample size, following weighting

of the data to make it nationally representative. Such a large sample size greatly increases the possibility of obtaining statistically significant differences with practical relevance for the purposes of identifying target groups for promotional campaigns.

For the descriptive analyses participants were classified according to sex, age (six levels), highest level of education achieved (primary, secondary or tertiary classification) and body mass index (BMI). Four categories of BMI (kg m^{-2}) were used: underweight (< 20), normal ($20\text{--}24.99$), overweight ($25\text{--}29.99$) and obese (≥ 30). The BMI was calculated based on the weight and height information given by the participant during the interview.

Results

Over the previous 6 months close to 40% of the EU participants were in a state of weight change (Table 1). Of these, more participants reported that they had gained (22%) rather than lost (15%) weight. Females were more likely than males to have changed weight in the last 6 months, and thus they were more likely to have either gained or lost weight as compared with males. The differences across age and education groups were relatively small. There was a tendency for the youngest age group (15–34 years) to have changed weight most during the last 6 months (Table 1).

Table 1 shows that the heavier the participants were the more they gained weight. The ratio of gained weight to lost weight was less favourable for overweight or obese participants than for normal weight participants. Of those who gained weight, 58% were already either overweight or obese; of those who lost weight during the last 6 months 36% were overweight or obese. Thus, over half of the overweight and obese participants were gaining further weight, and approximately one-third were losing weight. It is interesting to note that of those who had lost weight 19% were classified as underweight.

A small amount of variation in weight change was found between the populations in the different EU member states. The variation across countries in those who gained weight ranged from 30% in Greece to 19% in Germany, Spain and Luxembourg (Table 2). Irish participants were more likely to have lost weight in the past 6 months (20%), while the lowest proportion to lose weight was reported for German participants (10%). Germany also had the highest number of respondents who stayed the same weight.

There was a small amount of variation in attitudes to physical activity between those who had gained or lost weight during the past 6 months. Over two-thirds of participants who had gained weight agreed with the statement that 'physical activity/exercise has numerous

Table 1 Percentage of EU subjects who gained weight, lost weight or stayed the same weight over the previous 6 months*, classified by demographics (sex, age and education level), weight status and mean BMI

	Gained weight	Lost weight	Stayed at the same weight
Sex			
Males	19	13	67
Females	25	18	56
Age (years)			
15–34	24	17	58
35–54	23	14	65
55+	19	14	65
Education level			
Primary	19	14	65
Secondary	24	17	58
Tertiary	22	15	63
Weight status			
Underweight	13	19	66
Normal weight	19	13	66
Overweight	27	16	57
Obese	31	20	47
BMI (SD)	25.6 (4.2)	24.7 (4.6)	24.1 (3.8)
EU (% of respondents)	22	15	61

* The percentages do not always sum up to 100% because some individuals have chosen the response alternative 'Do not know'

beneficial effects on health' (Table 3), but only 20% agreed that physical activity was an important influence in gaining weight (Table 4). Those selecting 'don't tend to put on weight' was almost three times higher among those who stayed the same weight compared to those who had gained weight in the last 6 months (Table 4). The total amount of food eaten, fat eaten and sugar eaten were all mentioned more often than physical activity as having an important influence on weight gain by those who had recently gained weight (Table 4). Thirteen per cent of the participants who

had recently gained weight, agreed with the statement that 'I do not need to do more physical activity/exercise than I already do'. Only 14% who had recently gained weight thought that a campaign would be effective in encouraging them to do more physical activity.

Among participants who had recently gained weight, a large amount of variation in attitudes to physical activity between the 15 EU countries was observed (Table 3). Almost all respondents who had gained weight in Greece and Finland strongly agreed with the statement that 'physical activity has numerous

Table 2 Percentage of subjects in each member state who have gained weight, lost weight and stayed at the same weight in the last 6 months* and the percentage of overweight or obese subjects

Country	Gained weight	Lost weight	Stayed at the same weight	Overweight or obese
Austria	22	14	62	42
Belgium	23	14	59	40
Denmark	22	15	61	39
Finland	20	18	62	43
France	23	15	61	31
Germany	19	10	70	46
Greece	30	15	54	46
Ireland	21	20	58	39
Italy	24	19	56	37
Luxembourg	19	15	64	26
Netherlands	22	18	58	39
Portugal	20	13	58	42
Spain	19	17	60	44
Sweden	22	13	62	40
UK	24	18	57	42
EU average†	22	15	61	41

* The percentages do not always sum up to 100% because some individuals have chosen the response alternative 'Do not know'.

† Weighted according to population size.

Table 3 Percentage of subjects in each member state who have gained weight in the last 6 months and who strongly agreed with the listed statements

Country	Physical activity/exercise has numerous beneficial effects on health	I do not need to do more physical activity/exercise than I already do	A local campaign would be effective in encouraging me to do more physical activity/exercise	Health professionals are good sources of information on the beneficial effects of physical activity/exercise
Austria	80	24	4	36
Belgium	64	21	11	32
Denmark	84	30	20	29
Finland	95	12	14	43
France	72	10	14	32
Germany	55	17	9	26
Greece	97	18	51	58
Ireland	80	17	18	21
Italy	79	6	13	19
Luxembourg	74	22	22	45
Netherlands	58	7	5	9
Portugal	56	15	21	35
Spain	73	13	25	34
Sweden	90	15	13	26
UK	59	11	10	24
EU average*	69	13	14	27

* Weighted according to population size.

beneficial effects on health'. But in Germany, Portugal and the Netherlands the corresponding numbers were much lower (between 55% and 58%). In Denmark, 30% of those who had gained weight strongly agreed with the statement that 'I do not need to do more physical activity/exercise than I already do' as compared to Italy (6%) and the Netherlands (7%) (Table 3).

Large variation was found between countries in the attitudes of those who had recently gained weight as to whether a campaign would be effective in encouraging them to do more physical activity. Half of the respondents in Greece agreed strongly with the statement whereas in Austria and the Netherlands the proportions were only 4% and 5%, respectively. Similarly, large variation was observed among those who had gained weight in their attitudes to health professionals. In Greece, 58% agreed strongly with the statement that 'health professionals are good sources of information' as compared with 9% in the Netherlands and 19% in Italy and 21% in Ireland (Table 3).

Respondents were also asked to report their methods of losing weight. In Table 5 the methods are presented for the 15 countries. Overall, in spite of the large number of participants in the EU being overweight or obese (41%) only a small minority (6%) were using diet and exercise combined as a strategy to lose weight. Further, diet was used frequently in Greece (21%), but seldom in the Netherlands (4%), Sweden (4%), Denmark (5%) or Germany (5%). Exercise, on the other hand, was used relatively often in Austria (15%), Sweden (14%) and Ireland (13%), but very seldom in the Netherlands (2%), Portugal (2%) and Belgium (3%). In Finland, Ireland, Sweden and the UK a combination of diet and exercise was used more often than in other countries.

The Netherlands, Portugal and Belgium had the highest numbers of participants (80% or more) who were not trying to lose weight (Table 5). The data suggest that in many countries in Europe approximately one-third of the population is trying lose weight. However, this figure is lower than the number of

Table 4 Percentage of EU subjects who have gained weight, lost weight or stayed at the same weight in the last 6 months selecting different factors as the most important influences on personal weight gain

Influences on weight gain	Gained weight	Lost weight	Stayed at the same weight
Total amount of food eaten	51	44	42
Total amount of fat eaten	42	43	37
Total amount of sugar eaten	27	25	20
Genetics and metabolism	19	19	18
Physical activity	20	17	16
Alcohol	14	13	10
Smoking	3	4	4
Do not tend to put on weight	8	13	22

Table 5 Percentage of subjects in each member state using different methods of losing weight and the percentage of overweight and obese participants*

Country	Overweight or obese	Trying to lose weight	Weight loss method			
			Diet	Exercise	Diet and exercise	Other means
Austria	42	33	7	15	4	8
Belgium	40	20	10	3	3	3
Denmark	39	23	5	7	5	6
Finland	43	30	11	9	12	2
France	31	28	12	5	5	4
Germany	46	23	5	9	4	5
Greece	46	33	21	4	5	2
Ireland	39	32	7	13	11	1
Italy	37	31	14	7	6	4
Luxembourg	26	30	13	7	4	5
Netherlands	39	15	4	2	4	4
Portugal	42	18	10	2	1	4
Spain	44	22	9	6	3	4
Sweden	40	34	4	14	11	5
UK	42	32	13	6	11	2
EU average†	41	26	10	6	6	4

* The percentages do not always sum up to 100% because some individuals have chosen the response alternative 'Do not know'.

† Weighted according to population size.

participants who are overweight or obese (approximately 40% in most countries).

Half of the obese participants who had recently gained weight were currently not trying to lose weight (Table 6). Of those who were trying to lose weight 23% were using diet, 7% exercise and 11% a combination of these. A majority (39%) of obese subjects who had recently lost weight had used diet as a strategy to lose weight. In contrast, exercise was used by only 8% of the participants, and the combination of dieting and exercise was used by 19%. Thus, exercise was more seldom used compared with diet alone.

Discussion

Results from this survey indicate a fairly alarming tendency for more normal weight, overweight or obese European people to be in a state of weight gain rather than weight loss. Thus, approximately 40% of Europeans are either overweight or obese, and 58% of these respondents reported having gained further weight during the last 6 months. In France and Luxembourg the number of overweight or obese people (around 30%) is lower than in other countries,

but not the numbers of participants trying to lose weight. It is also alarming that almost a fifth of underweight people are in the process of losing weight. This observation is in agreement with reports of an increasing trend towards eating disorders in affluent countries¹⁷.

Overall the data suggest that nearly 69% of participants who had gained weight accept the statement that 'physical activity/exercise has numerous beneficial effects on health'. But only a minority of them (20%) accept the idea that physical activity has an important influence on their ability to weight gain. This points to the possibility that the important role of physical activity in the process of weight maintenance is underestimated by many participants in the EU. It is important to note that after weight loss the level of physical activity (passivity) seems to predict weight gain¹⁵. Obviously, this information has not reached the general population in the EU.

Furthermore, only half of those who had gained weight recently thought that a campaign would be effective in encouraging them to do more physical activity. This suggests that campaigns may have only a limited effect on people in a state of weight gain. It should also be noted that the acceptability of a

Table 6 Percentage of obese subjects in the EU trying to lose weight by various means classified by recent weight change

Weight loss method	Gained weight	Lost weight	Stayed at the same weight
By dieting	23	39	15
By exercise	7	8	5
By dieting and exercise	11	19	8
By medication	2	1	1
By other means	5	11	5
Not trying to lose weight	53	23	66

campaign encouraging those who had gained weight to do more physical activity seems to vary from country to country. In Greece especially, a local campaign would appear to be useful with 51% agreeing strongly with the statement, whereas in Austria and the Netherlands only a minority of those gaining weight might be affected by the use of a local campaign. This indicates that, especially in these countries, other methods should be used to promote physical activity. Overall, a minority in the EU (14%) agreed strongly that a campaign would be effective in encouraging them to do more physical activity.

Although a majority (approximately 70%) of the participants in the EU who had recently gained weight strongly agreed with the statement that 'physical activity has numerous beneficial effects on health', there was a substantial variation among the 15 EU countries. For example, in Greece, Finland and Sweden a great majority agreed with the statement as compared with approximately half of the population in Germany, Portugal, the Netherlands and UK. Thus, in some European countries a great number of people may not believe in the positive effects of physical activity on health.

Similarly, there was a surprisingly large variation between the 15 EU countries in how those participants who have gained weight perceive health professionals as sources of information on the beneficial effects of physical activity. In the Netherlands only 9% strongly agreed with the statement as compared with more than half of the population in Greece. Overall, why do only one-quarter of the participants in the EU strongly agree that health professionals are good sources of information on the beneficial effects of physical activity? Perhaps this matter should be emphasized more during the education of health professionals.

It is important to observe that half of the participants who had gained weight were not trying to lose weight, even if most of them were overweight or obese. In the EU as a whole, 26% were trying to lose weight whereas 41% were either overweight or obese. The most common method used for losing weight was diet. A combination of diet and exercise was used more seldomly, suggesting that exercise as a method of weight control is underestimated or undervalued. This is true in many EU countries and especially in Belgium, Portugal and Spain.

In summary, this survey suggests that a large number of people are in a state of weight gain in Europe. No regional patterns (e.g. for northern or southern Europe) were found for body-weight changes and weight loss practices. This observation is the same as that for the perceived benefits of healthy eating¹⁷. Thus, there do not appear to be any general cultural practices (e.g. religion or diet) which might explain the differences between the countries. The recommendations for

interventions may need to differ somewhat in the various member states as the common weight loss practices are different. For example, knowledge of the fact that physical activity or exercise has numerous beneficial effects on health could be increased, especially in Germany, the Netherlands, Portugal and the UK. A campaign among those gaining weight in encouraging them to do more physical activity may not be successful in Austria and the Netherlands, but may be used effectively in Greece. Overall, a campaign alone may not be effective in encouraging people to do more physical activity in Europe so additional methods should be found. Further, a combination of diet and exercise as a method of weight control is underestimated or undervalued by the general population who are either overweight or obese.

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Vitamins in Human Health and Disease

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