

ORIGINAL RESEARCH ARTICLE

Desire to lose weight and need of weight loss support in the adult population—Results from a cross-sectional study in Sweden

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Summary

Objective: Evidence-based methods to lose weight are important in tackling increasing obesity trends in adult populations. More knowledge about persons who want to lose weight and do not/do need weight loss support is necessary to design effective preventive practices. Thus, the aim of the study was to investigate the prevalence of desire to lose weight in the general population and the prevalence of health problems and health-related factors in persons with overweight or obesity who want to lose weight and believe that they do not/do need weight loss support.

Methods: The study included 14 126 persons aged 30 to 69 years who responded to a questionnaire sent to a random sample. Persons with overweight or obesity (BMI ≥ 25 kg/m²) were divided into three groups: those who do not want to lose weight (n = 1236), those who want to lose weight but do not believe they need support (n = 5484), and those who want to lose weight and believe they need weight loss support (n = 1462).

Results: In total, 69% of the women and 59% of the men reported that they wanted to lose weight. The prevalence of hypertension, musculoskeletal pain, poor self-rated health, anxiety/worry, and depression was highest among persons with overweight or obesity who wanted to lose weight and believed they need weight loss support. They were also more physically inactive and reported less social support.

Conclusions: To want to lose weight is very common among adults. People with overweight or obesity who want to lose weight and believe they need weight loss support have higher frequency of various health problems, including mental health problems, and less social support.

KEYWORDS

health problems, population studies, prevalence, weight loss support

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1 | INTRODUCTION

Obesity is a growing public health problem in many countries in the western world,^{1,2} as well as in Sweden,^{3,4} and high body mass index (BMI) is one of the risk factors that contributes most to the disease burden.⁵ More than half of the men and almost half of the women in Sweden have overweight or obesity.⁶ In 2012, the prevalence of obesity was 17% among men and women aged 25 to 74 years in mid-Sweden.⁷

In developed countries, obesity is more common among people with low education^{1,8-10} and low income^{10,11} regardless of age, especially among women. The social differences in the prevalence of overweight and obesity may be due to differences in behavioural factors such as dietary habits and a sedentary lifestyle,¹² but weight control habits, reproductive history, and psychosocial factors may also contribute.¹³⁻¹⁵ The socio-economic differences in obesity prevalence seem to have increased over the past decades in Sweden.^{16,17} In mid-Sweden, the prevalence of obesity increased in all educational groups between 2000 and 2012, but the increase was largest in the group with secondary education.⁷

Measures to prevent diseases are part of the tasks of the health care system according to the Health Care Act in Sweden, and increased focus on health promotion and disease prevention activities is one of the national target areas for public health.¹⁸ From a public health perspective, it is important to know the proportion of the population who wants to lose weight and also the percentage that needs weight loss support from health care, as well as information about health status in these groups. This knowledge is required in order for the health care system to be able to plan and offer safe and evidence-based methods for weight loss.

Previous studies show that the prevalence of weight control attempts in the adult population is high: Over 50% of middle-aged Norwegian women tried to lose weight,¹⁹ and, in Sweden, 41% of men and women were actively trying to lose weight.²⁰ According to an international review, the proportion trying to lose weight is 42% in the general adult population—but with a wide variation between studies from different countries.²¹ In addition, an increase seems to have occurred in this proportion in recent decades, at least in England.²² However, it is unclear whether persons trying to lose weight believe they can do it on their own or if they need support from the health care system. According to a recent international study by Caterson et al, 81% of people with obesity assume full responsibility for weight loss, but a majority would like a health care professional to initiate a conversation about weight management.²³

Internationally, the main determinants of weight control attempts are high BMI and gender.^{14,20-22,24,25} Women try to lose weight to a greater extent than men,^{14,20-22,24,25} although overweight and obesity are not more common among women. Age and socio-economic status also affect the occurrence of weight control attempts. The proportion trying to lose weight decreases with higher age,^{19,25} and weight control attempts are more common among people with high socio-economic status.^{14,19,20,25}

The relationship between weight control attempts and obesity is however complex. On the one hand, evidence-based methods for weight reduction are important to tackle the increasing prevalence of obesity.²⁶ On the other hand, there is strong evidence that the number of weight loss attempts has a negative effect on the success of weight loss interventions.^{24,27}

An international review reported that the personal motives for trying to lose weight are primarily to improve appearance, health, fitness, and well-being and to prevent future diseases.²¹ However, an English study found that weight loss attempts were only modestly related to health conditions.²² Although trying to lose weight is very common among people with obesity, the long-term results are discouraging.²⁸ More knowledge is thus needed about the health status, contacts with health care, and other health-related factors among those who want to lose weight and do not/do need weight loss support.

Consequently, the first aim of this study was to examine the proportion of people who want to lose weight in the *general adult population* in Sweden and examine differences in this proportion between men and women, different age groups, BMI classes, and educational levels. Also, the proportion who report that they need support to reduce their body weight is studied. The second aim was to investigate the prevalence of health problems, contacts with health care, and other health-related factors among *persons with overweight or obesity* who want to lose weight and believe that they do not/do need weight loss support.

2 | METHODS

The study is based on 14 126 persons aged 30 to 69 years who responded to a postal survey questionnaire sent to a random population sample in mid-Sweden in 2017. The questionnaire comprised questions about lifestyle habits, living conditions, and health and included questions about the desire for weight loss. The sampling frame was the population register at Statistics Sweden, the statistical administrative authority in Sweden, covering all inhabitants of the study area. Data collection was discontinued after two postal reminders. The overall response rate was 43%. The area investigated covers five counties (Sörmland, Uppsala, Värmland, Västmanland, and Örebro) including 55 municipalities with over one million inhabitants in the central part of Sweden.

In the questionnaire, the respondent was asked if he/she wanted to change his/her weight with the answer options: No; Yes, I want to lose weight; Yes, I want to gain weight. This question is a modified version of the question used in the study of Hjartåker et al.¹⁹ A supplementary question for those who wanted to change their weight was as follows: If you want to change your weight, do you think you can manage it yourself? (with the answer options Yes and No, I need support).

BMI was based on self-reported weight and height. Overweight was defined according to the World Health Organization (WHO) as $BMI \geq 25 \text{ kg/m}^2$ and obesity as $BMI \geq 30 \text{ kg/m}^2$.²⁶

2.1 | Health problems

Since obesity is associated with several diseases and symptoms, such as hypertension, diabetes, musculoskeletal symptoms, and depression,^{6,29,30} several health problems were investigated. Diagnosed diseases were measured with the following question: Do you have any of the following diagnosed illnesses (with answer options yes/no)? Questions about diseases included diabetes (type 2), high blood pressure, and depression.

Symptoms were derived from the following question: Do you have any of the following discomforts or symptoms? These included "aches in your shoulders or neck," "anxiety or worry," and "depressive symptoms." The answer categories were No; Yes, minor discomfort; and Yes, severe discomfort, where the latter two categories were combined to Yes.

Self-rated health was measured on a five-grade scale with the options "very good," "good," "fair," "poor," and "very poor." The last two options were classified as poor self-rated health.

2.2 | Contacts with health care

To measure visits to primary care, the respondents were asked whether they had visited a health care centre for their own problems during the last 3 months (yes/no). If the answer was yes, the respondent was further asked whether he/she had discussed his/her dietary habits and physical exercise habits, respectively, at the visit(s) (yes/no).

2.3 | Health-related factors

Three measures of factors related to overweight/obesity and weight loss support were included: physical activity, social support, and condescending treatment.

Two questions for measuring physical activity, similar to those in the Swedish national public health survey,³¹ were used. The first question was as follows: How much time do you spend in a normal week on physical training that leaves you out of breath—for example, running, fitness training, or ball sports? The response options were the following: 0 minutes/no time; less than 30 minutes; 30 to 59 minutes (0.5 to 1 hour); 60 to 89 minutes (1 to 1.5 hours); 90 to 119 minutes (1.5 to 2 hours); and 2 hours or more. The second question was as follows: How much time do you spend in a normal week on daily activities—for example, walking, cycling, or gardening? Count all time together (at least 10 minutes at a time). The response options were the following: 0 minutes/no time; less than 30 minutes; 30 to 59 minutes (0.5 to 1 hour); 60 to 89 minutes (1 to 1.5 hours); 90 to 149 minutes (1.5 to 2.5 hours); 150 to 299 minutes (2.5 to 5 hours); and 5 hours or more. These questions are used to measure whether the respondent reaches 150 activity minutes per week as recommended by the WHO.³² The minutes spent in physical training (first question) are doubled

when the sum of the minutes from the two questions is calculated.³¹

Social support was measured with the following question: Do you have anyone you can share your innermost feelings with and confide in? (yes/no). Condescending treatment was derived from the following question: Have you during the past 3 months felt that someone has treated you in a condescending manner? The answer options were No; Yes, once or twice; and Yes, several times. The two latter options were combined to Yes.

2.4 | Ethical considerations

The data on gender, age, educational level, and country of birth are based on data from Statistics Sweden. After application of registry data, the material has been unidentified before it has been sent to the counties/regions for further processing. Authorization from the Regional Ethics Board in Uppsala has been obtained (EPN 2015/417). The data material is protected according to the Personal Data Act (1998: 204) and the Public and Privacy Act (2009: 400, Chapter 24, Section 9).

2.5 | Statistical analyses

The prevalence of the desire for weight loss and the reported need for weight loss support were calculated for men and women, different age groups, BMI categories, and levels of education. The differences in prevalence between these groups were tested using chi-square statistics. Independent relationships between these factors and the desire for weight loss as well as the reported need for weight loss support were studied using multivariate logistic regression.

In the second phase, persons with overweight or obesity (BMI \geq 25 kg/m²) were divided into three groups: those who do not want to lose weight (n = 1236), those who want to lose weight but do not believe they need support (n = 5484), and those who want to lose weight and believe they need weight loss support (n = 1462). Differences in background characteristics and prevalence of health problems and related factors between these groups were tested using chi-square statistics. One-way analysis of variance (ANOVA) was used to test differences in mean age between these groups. Univariate odds ratios were calculated for the health problems and health-related factors using those who do not want to lose weight as the reference category. In the second step, the odds ratios were adjusted for obesity and, in the fully adjusted models, also for gender, age group, and educational level. All analyses were carried out using SPSS, version 21.0.

3 | RESULTS

In total, 69% of the women and 59% of the men reported that they want to lose weight (Table 1). The prevalence was somewhat higher in the age group 50 to 69 years compared with the age group 30 to

TABLE 1 The number and proportion of persons who reported that they want to lose weight and the number and proportion who believe they need weight loss support

	Want to Lose Weight, %				P Value	Need Weight Loss Support, %				
	N	Women	Men	Total		N	Women	Men	Total	P Value
Total	14 126	69.1	59.1	64.7		9073	21.8	12.1	17.9	
Age group, years					.001					.547
30-49	5560	68.0	56.3	63.1		3488	21.4	11.3	17.6	
50-69	8566	69.8	60.7	65.7		5585	22.0	12.6	18.1	
BMI class, kg/m ²					<.001					<.001
<18.5	141	9.6	14.8	10.6		... ^a				
18.5-24.9	5264	43.5	20.9	35.3		1852	6.0	2.8	5.3	
25-29.9	5317	88.3	71.3	79.4		4193	17.4	6.3	12.2	
≥30	2843	95.8	92.3	94.2		2653	43.5	25.2	35.5	
Educational level					<.001					<.001
Low	1478	67.1	57.1	61.6		898	27.5	14.8	20.9	
Medium	6559	72.9	60.8	67.3		4383	23.8	12.9	19.3	
High	6035	65.9	57.6	62.7		3764	18.4	10.0	15.4	
Country of birth					<.001					<.001
Sweden	12 294	69.7	59.8	65.4		7981	20.8	11.2	17.0	
Another Nordic country	572	67.7	53.3	62.1		354	22.2	10.2	18.0	
Outside Nordic countries	1269	63.0	54.9	59.2		738	32.9	22.2	28.2	

^aN is less than 20.

49 years. Persons with overweight (79%) and obesity (94%) were more prone to report a desire to lose weight than those with normal weight (35%). In total, 18% of those who wanted to lose weight indicated that they need weight loss support. This proportion increased with increasing BMI, and 44% of the women with obesity and 25% of the men with obesity believed that they need support to lose weight.

When the associations were analysed using multivariate regression, BMI had the strongest independent association with desire to lose weight (Table 2). Women were more likely to want to lose weight than men, and the probability was higher among persons with high and medium level of education than among those with a low educational level when adjusted for BMI. Participants born outside Sweden were less prone to want lose weight than participants born in Sweden.

Table 3 presents the background characteristics and the prevalence of several health problems as well as related factors among persons with overweight or obesity in the three categories: those who do not want to lose weight, those who want to lose weight but do not believe they need support, and those who want to lose weight and believe they need weight loss support. Those who want to lose weight and especially those who reported that they believe they need weight loss support had higher proportion of women and persons with obesity. There was an increased prevalence of poor self-rated health, several diagnosed diseases such as diabetes (type 2), hypertension, depression, as well as symptoms such as pain in the neck and shoulders, and anxiety or worry among those who needed weight loss

TABLE 2 Multivariate OR with 95% CI for reporting a desire to lose weight by study category (N = 13 517)

		OR	95% CI
Gender	Men	1	Reference
	Women	2.81	2.56, 3.08
Age group, years	30-49	1	Reference
	50-69	0.94	0.86, 1.03
BMI class, kg/m ²	<18.5	0.18	0.11, 0.31
	18.5-24.9	1	Reference
	25-29.9	10.07	9.12, 11.11
	≥ 30	43.56	36.45, 52.06
Educational level	Low	1	Reference
	Medium	1.47	1.27, 1.71
	High	1.72	1.48, 2.00
Country of birth	Sweden	1	Reference
	Another Nordic country	0.70	0.56, 0.87
	Outside Nordic countries	0.68	0.58, 0.79

Abbreviations: CI, confidence interval; OR, odds ratio.

support. They had also visited the health care centre and had discussed dietary and exercise habits more often than the other two groups. In addition, they were less physically active, more often condescendingly treated, and reported less social support than the other

TABLE 3 Background characteristics, prevalence of health problems, and related factors among persons with overweight and obesity in groups defined by desire to lose weight and whether they believe they need weight loss support

	Does Not Want to Lose Weight	Wants to Lose Weight but Does Not Need Support	Wants to Lose Weight and Needs Support	P Value for Difference Between Groups
N	1236	5484	1462	
Background characteristics				
Mean age, years	54.4	53.4	53.1	.006
Women, %	29.0	49.7	71.4	<.001
Obesity, %	12.9	31.7	64.6	<.001
High education, %	30.7	38.5	35.7	<.001
Health problems				
Diabetes (type 2), %	7.0	6.2	11.5	<.001
Hypertension, %	20.1	25.5	33.2	<.001
Depression, %	6.9	7.4	21.0	<.001
Pain in shoulders or neck, %	45.5	52.8	65.0	<.001
Anxiety or worry, %	21.1	26.4	46.2	<.001
Depressive symptoms, %	19.5	23.9	46.6	<.001
Poor self-rated health, %	4.3	4.3	14.1	<.001
Contacts with health care				
Visited primary care, %	32.3	40.2	54.0	<.001
Discussed dietary habits, %	15.6	15.6	25.9	<.001
Discussed physical exercise habits, %	25.8	26.3	34.9	<.001
Health-related factors				
Physically active, %	66.4	66.5	50.9	<.001
Condescendingly treated, %	24.9	31.9	45.7	<.001
Social support, %	88.4	91.3	81.3	<.001

two groups. The group that wanted do lose weight but did not need support was more alike the group that did not want to lose weight. They had, however, slightly more often hypertension, pain in shoulders or neck, mental health symptoms, had visited primary care more frequently, and reported that they were treated in a condescending manner more often than the group that did not want to lose weight.

Since the prevalence of obesity and the gender distribution differed between the groups, multiple logistic regression analyses were carried out, adjusting for possible confounding factors: obesity, gender, age group, and educational level. Table 4 shows the results in form of odds ratios. When adjusted for obesity, diabetes (type 2) was no longer statistically significant in the group that believed they need weight loss support. However, hypertension, depression, pain in the neck and shoulders, mental health symptoms, and poor self-rated health were more common in this group independent of the confounding factors. The odds ratios for visiting primary care, discussing dietary and physical exercise habits while visiting primary care, as well as for physical activity, condescending treatment, and social support, were statistically significant even in the fully adjusted models.

The group that wanted to lose weight but did not believe they need support had somewhat more often hypertension, pain in shoulders or neck, mental health symptoms, had visited more often primary care, and were treated in a condescending manner more often than the group that did not want to lose weight even after adjustment (Table 4). They reported more social support than the group that did not want to lose weight, but this association was no longer statistically significant when adjusted for confounders. Otherwise, there were no differences between this group and the group that did not want to lose weight.

4 | DISCUSSION

In this population study of people 30 to 69 years old in mid-Sweden, 69% of the women and 59% of the men wanted to lose weight. As expected, persons with overweight and obesity were more prone to report a desire to lose weight than persons with normal weight. In total, 18% of those with overweight or obesity who wanted to lose

TABLE 4 Odds ratios and 95% confidence intervals (in parenthesis) for health problems and related factors among persons with overweight and obesity subjects in groups defined by desire to lose weight and whether they believe they need weight loss support

		Does Not Want to Lose Weight	Wants to Lose Weight but Does Not Need Support	Wants to Lose Weight and Needs Support
Diabetes (type 2)	OR1	1 (ref.)	0.9 (0.7, 1.1)	1.7 (1.3, 2.3)
	OR2	1 (ref.)	0.7 (0.6, 0.9)	1.1 (0.8, 1.4)
	OR3	1 (ref.)	0.8 (0.6, 1.1)	1.3 (1.0, 1.8)
Hypertension	OR1	1 (ref.)	1.4 (1.2, 1.6)	1.9 (1.7, 2.4)
	OR2	1 (ref.)	1.2 (1.0, 1.4)	1.4 (1.2, 1.7)
	OR3	1 (ref.)	1.4 (1.1, 1.6)	1.8 (1.4, 2.2)
Depression	OR1	1 (ref.)	1.1 (0.8, 1.4)	3.6 (2.8, 4.6)
	OR2	1 (ref.)	1.0 (0.8, 1.3)	3.0 (2.3, 4.0)
	OR3	1 (ref.)	0.9 (0.7, 1.2)	2.6 (2.0, 3.4)
Pain in shoulders or neck	OR1	1 (ref.)	1.3 (1.2, 1.5)	2.2 (1.9, 2.6)
	OR2	1 (ref.)	1.3 (1.1, 1.5)	2.0 (1.7, 2.4)
	OR3	1 (ref.)	1.2 (1.1, 1.4)	1.7 (1.4, 2.0)
Anxiety or worry	OR1	1 (ref.)	1.3 (1.2, 1.6)	3.2 (2.7, 3.8)
	OR2	1 (ref.)	1.3 (1.1, 1.5)	3.1 (2.6, 3.8)
	OR3	1 (ref.)	1.2 (1.0, 1.4)	2.6 (2.2, 3.1)
Depressive symptoms	OR1	1 (ref.)	1.3 (1.1, 1.5)	3.6 (3.0, 4.3)
	OR2	1 (ref.)	1.3 (1.1, 1.5)	3.6 (3.0, 4.3)
	OR3	1 (ref.)	1.2 (1.0, 1.4)	3.1 (2.5, 3.7)
Poor self-rated health	OR1	1 (ref.)	1.0 (0.7, 1.4)	3.6 (2.7, 5.0)
	OR2	1 (ref.)	0.9 (0.7, 1.2)	2.7 (2.0, 3.9)
	OR3	1 (ref.)	0.9 (0.7, 1.2)	2.6 (1.9, 3.7)
Visited primary care	OR1	1 (ref.)	1.4 (1.2, 1.6)	2.5 (2.1, 2.9)
	OR2	1 (ref.)	1.3 (1.2, 1.5)	2.2 (1.9, 2.6)
	OR3	1 (ref.)	1.3 (1.1, 1.5)	2.0 (1.7, 2.4)
Discussed dietary habits	OR1	1 (ref.)	1.0 (0.7, 1.4)	1.9 (1.4, 2.6)
	OR2	1 (ref.)	0.9 (0.6, 1.2)	1.4 (1.0, 1.9)
	OR3	1 (ref.)	1.0 (0.7, 1.3)	1.6 (1.1, 2.3)
Discussed physical exercise habits	OR1	1 (ref.)	1.0 (0.8, 1.3)	1.5 (1.2, 2.0)
	OR2	1 (ref.)	1.0 (0.8, 1.3)	1.4 (1.0, 1.8)
	OR3	1 (ref.)	1.0 (0.8, 1.3)	1.6 (1.2, 2.1)
Physically active	OR1	1 (ref.)	1.0 (0.9, 1.1)	0.5 (0.4, 0.6)
	OR2	1 (ref.)	1.1 (1.0, 1.2)	0.7 (0.6, 0.8)
	OR3	1 (ref.)	1.0 (0.9, 1.1)	0.6 (0.5, 0.7)
Condescendingly treated	OR1	1 (ref.)	1.4 (1.2, 1.6)	2.5 (2.1, 3.0)
	OR2	1 (ref.)	1.4 (1.2, 1.6)	2.4 (2.0, 2.9)
	OR3	1 (ref.)	1.2 (1.1, 1.4)	2.0 (1.6, 2.4)
Social support	OR1	1 (ref.)	1.4 (1.1, 1.7)	0.6 (0.5, 0.7)
	OR2	1 (ref.)	1.4 (1.1, 1.7)	0.6 (0.5, 0.7)
	OR3	1 (ref.)	1.2 (1.0, 1.5)	0.5 (0.4, 0.6)

Note. OR1, bivariate odds ratio; OR2, odds ratio adjusted for obesity; OR3, odds ratio adjusted for obesity, gender, age group and educational level. Statistically significant odds ratios are marked with bold.

weight reported that they need weight loss support. This proportion increased with higher BMI, and 44% of the women with obesity and 25% of the men with obesity believed that they need support to lose weight. Among persons with overweight or obesity, the prevalence of

hypertension, musculoskeletal pain, poor self-rated health, anxiety, and worry, as well as diagnosed depression, was higher among those who wanted to lose weight and believed they need weight loss support compared with those who did not want to lose weight, even

when adjusted for obesity, gender, and other confounders. They had also discussed their dietary and exercise habits when visiting primary care to a larger extent but were less physically active and reported less social support than those who did not want to lose weight.

The study shows that the desire to lose weight is very common in the population and more common among women, those with high BMI, and those with a high educational level. This is in line with previous studies that have shown that the prevalence of weight control attempts is high and higher in these groups in Sweden²⁰ and elsewhere.^{14,19,21,25} A population study in England reported that the prevalence of weight control attempts was 53% among those with overweight and 76% among those with obesity.²² In the present study, the prevalence of wanting to lose weight was 79% in respondents with overweight and 94% in those with obesity. Even though the results refer to different populations, they suggest that a majority of those who want to lose weight are also attempting to lose weight. In addition, the results suggest that nearly all people with obesity want to lose weight, which is a challenge for the health care system. The recent international study by Caterson et al²³ showed as well that persons with obesity are motivated to lose weight. However, they also found that health care professionals believe that patients with obesity have little interest in weight management, which may constitute a barrier for weight management conversations.

Although the majority in the present study reported that they can manage to lose weight themselves, a considerable part indicated that they need weight loss support. The results denote a widespread willingness to lose weight among people with overweight or obesity, but few seem to have access to standardized nonsurgical weight loss treatment within the health care system in Sweden. A 10-year follow-up of the control group in the nationwide Swedish Obese Subjects (SOS) study showed that about 83% were trying to lose weight at each of the eight follow-ups, but only one out of four reported weight loss support from the health care, even though the participants had eight preplanned visits at primary health care centres during the 10 years.²⁸ Weight loss treatment for the control group was not standardized in the SOS study and varied according to the local routines among the 480 participating centres.

When persons with overweight or obesity were studied separately according to whether they want to lose weight and believe they need weight loss support, some interesting results were observed. About half of those who wanted to lose weight and believed they need weight loss support had visited primary care over the past 3 months, a quarter had discussed dietary habits, and one-third had discussed physical exercise habits during their visits, which was more often than the other two groups. This indicates that the group uses more health care services than others and has more discussions about living habits when visiting primary care. However, although discussions about lifestyle habits were more common in this group, physical inactivity was more common in this group, suggesting that these conversations may not be effective in achieving changes in lifestyle habits.

One important factor is that those who wanted to lose weight and believed that they need weight loss support also reported more

often condescending treatment and less social support than others. Obesity is commonly accompanied with stigma, and weight-related stigma has been recognized as a contributor to negative health outcomes and behaviours that can promote and exacerbate obesity and should therefore be considered in obesity prevention and treatment efforts.³³ The group that wanted to lose weight but did not believe they need support also reported somewhat more often condescending treatment than the group that did not want to lose weight, but they had as often social support. This underlines the importance of social support even in the occurrence of stigma.

Little is known about the health status of people with overweight and obesity who want to lose weight and do not/do need weight loss support. In the present study, the group that wanted to lose weight and believed they need weight loss support reported more physical and mental health problems than the other groups. This is an important finding, which indicates that this group needs support and treatment within the health care system before their health deteriorates further. It also underlines the fact that this group has many different types of health problems including hypertension, musculoskeletal pain, mental health symptoms, and poor self-rated health, which should be considered when designing preventive and weight-control measures.

The group that wanted to lose weight but did not believe they need support had somewhat more often health problems such as hypertension, musculoskeletal pain, mental health symptoms, and had visited primary care more often than the group that did not want to lose weight. However, they did not have increased prevalence of diagnosed diseases such as diabetes or depression, nor worse self-rated health. There were no differences in the proportion who had discussed lifestyle habits when visiting primary care nor in physical activity between them and the reference group.

From the public health point of view, it is important to know that a large proportion of the adult population wants to lose weight and that a majority of them also think that they can manage to lose weight themselves. This group is highly motivated to lose weight and may be willing to adhere if well-designed and effective general preventive activities are available. A minor but considerably large group of persons with overweight or obesity are also highly motivated but believe that they need weight loss support. This group has an increased prevalence of various types of health problems and reports less social support than others and may therefore require specially designed weight control efforts that take these multiple barriers into account. This is particularly important because of the high prevalence of previous weight loss attempts among persons with obesity, the lack of standardized weight control methods offered by the health care system, and the discouraging long-term results of weight loss attempts.^{23,24,28} In the current study, it was not specified whether the support required for weight loss meant support from the health care provider or, for example, from family, friends or others, but because of the high prevalence of various types of health problems, it seems reasonable that the support should be provided by the health care system. Multiple barriers to weight loss, such as high BMI, more health conditions, and low confidence among patients with obesity, have also been

reported from a study conducted in primary care in the United Kingdom.³⁴ Thus, the results of the present study are relevant to the health care system in Sweden, but probably also in other countries.

The current study has some limitations. The response rate was 43%, which may affect the representativeness of the respondents and introduce bias in examined associations,³⁵ even though this is not necessarily so.³⁶ In addition, BMI was based on self-reported weight and height, which may lead to an underestimation of the prevalence of overweight and obesity in the population.³⁷ Another limitation regards the dichotomization of the measures of health problems, contacts with health care, and health-related factors, which might reduce the specificity of the data.

In this study, persons with overweight or obesity were divided into three groups. Those who wanted to lose weight were categorized according to whether they thought they could manage to lose weight on their own or believed that they need weight loss support. It is not known whether they had previously tried to lose weight and succeeded or failed in doing so or if they based their judgement of the need for weight loss support on other reasons. Thus, this judgement was subjective, and it is not possible to know whether they would indeed be successful in losing weight on their own or if they actually need weight loss support.

One of the advantages of the present study is that it is based on a considerable sample of the general population in a large geographical area and represents a wide age group of men and women from 30 to 69 years. Comparable findings on, for example, high motivation to lose weight among persons with obesity have also been found in other studies,^{23,34} but these studies have been limited to health care patients. Although the study included only five counties, it covers the general adult population in these counties, comprising over one million inhabitants. In addition, several types of health problems, contacts with health care, and other health-related factors among persons with overweight and obesity who do not or do want to lose weight and do not/do believe they need weight loss support could be compared.

5 | CONCLUSION

In summary, the desire to lose weight was very common in the general population in the age group 30 to 69 years. Female sex, increasing BMI, and higher educational level were associated with higher prevalence of desire to lose weight. There is widespread willingness and motivation to lose weight and need for support to lose weight, especially among people with obesity. Persons with overweight or obesity who want to lose weight and believe they need weight loss support are a special group with higher frequency of poor self-rated health and various types of health problems, including mental health problems. About half of this group had visited primary care in the recent months. Despite a higher proportion that had discussed dietary and exercise habits when visiting primary care than in other groups, they were less physically active. They had also less social support and reported that they were treated in a condescending manner to a larger extent than other groups. These results are important to take

into consideration when designing preventive and weight-control measures for persons with overweight or obesity.

CONFLICT OF INTEREST STATEMENT

No conflict of interest was declared.

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REFERENCES

1. Ng M, Fleming T, Robinson M, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014;384:766-781.
2. Finucane MM, Stevens GA, Cowan MJ, et al. Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating Group (Body Mass Index). National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9.1 million participants. *Lancet*. 2011;377:557-567.
3. Lissner L, Johansson SE, Qvist J, Rossner S, Wolk A. Social mapping of the obesity epidemic in Sweden. *Int J Obes*. 2000;24:801-805.
4. Neovius M, Janson A, Rössner S. Prevalence of obesity in Sweden. *Obes Rev*. 2006;7:1-3.
5. Agardh E, Moradi T, Allebeck P. Riskfaktorernas bidrag till sjukdomsbördan i Sverige. Jämförelse mellan svenska och WHO-data [The contribution of risk factors to the burden of disease in Sweden. A comparison between Swedish and WHO data]. *Läkartidningen*. 2008;105:816-821.
6. Health in Sweden: The National Public Health Report 2012. *Scand J Public Health*. 2012;40(Suppl. 9):5-304.
7. Molarius A, Lindén-Boström M, Granström F, Karlsson J. Obesity continues to increase in the majority of the population in mid-Sweden—a 12-year follow-up. *Eur J Public Health*. 2016;26:622-627.
8. Molarius A, Seidell JC, Sans S, Tuomilehto J, Kuulasmaa K for the WHO MONICA Project. Educational level and relative body weight, and changes in their association over 10 years—an international perspective from the WHO MONICA Project. *Am J Public Health*. 2000;90:1260-1268.
9. Cohen AK, Rai M, Rehkopf DH, Abrams B. Educational attainment and obesity: a systematic review. *Obes Rev*. 2013;14:989-1005.
10. Devaux M, Sassi F. Social inequalities in obesity and overweight in 11 OECD countries. *Eur J Public Health*. 2011;23:464-469.
11. Ogden CL, Fakhouri TH, Carroll MD, et al. Prevalence of obesity among adults, by household income and education—United states, 2011-2014. *MMWR Morb Mortal Wkly Rep*. 2017;66:1369-1373.
12. Borodulin K, Zimmer C, Sippola R, Mäkinen TE, Laatikainen T, Prättälä R. Health behaviours as mediating pathways between socioeconomic position and body mass index. *Int J Behav Med*. 2012;19:14-22.
13. Molarius A. The contribution of lifestyle factors to socioeconomic differences in obesity in men and women—a population-based study in Sweden. *Eur J Epidemiol*. 2003;18:227-234.
14. Wardle J, Griffith J. Socio-economic status and weight control practices in British adults. *J Epidemiol Community Health*. 2001;55:185-190.
15. Wamala SP, Wolk A, Orth-Gomer K. Determinants of obesity in relation to socioeconomic status among middle-aged Swedish women. *Prev Med*. 1997;26:734-744.
16. Kark M, Rasmussen F. Growing social inequalities in the occurrence of overweight and obesity among young men in Sweden. *Scand J Public Health*. 2005;472-477.

17. Norberg M, Lindvall K, Stenlund H, Lindahl B. The obesity epidemic slows among the middle-aged population in Sweden while the socio-economic gap widens. *Glob Health Action*. 2010;3:1.
18. God och jämlik hälsa—en utvecklad folkhälsopolitik. Prop 2017/18. 249. [Good and equitable public health—an advanced public health policy. Government proposition 2017/18.249]. Stockholm; 2017.
19. Hjartåker A, Laake P, Lund E. Body mass index and weight change attempts among adult women. The Norwegian Women and Cancer Study. *Eur J Public Health*. 2001;11:141-146.
20. Bärebring L, Winkvist A, Augustin H. Sociodemographic factors associated with reported attempts at weight loss and specific dietary regimens in Sweden: the SWEDIET-2017 study. *PLoS One*. 2018;13:e0197099.
21. Santos I, Sniehotta FF, Marques MM, Carraça EV, Teixeira PJ. Prevalence of personal weight control attempts in adults: a systematic review and meta-analysis. *Obes Rev*. 2017;18:32-50.
22. Piernas C, Aveyard P, Jebb SA. Recent trends in weight loss attempts: repeated cross-sectional analyses from the health survey for England. *Int J Obes*. 2016;40:1754-1759.
23. Caterson ID, Alfadda AA, Auerbach P, et al. Gaps to bridge: misalignment between perception, reality and actions in obesity. *Diabetes Obes Metab*. 2019;21:1914-1924.
24. Korkeila M, Rissanen A, Kaprio J, Sorensen TI, Koskenvuo M. Weight-loss attempts and risk of major weight gain: a prospective study in Finnish adults. *Am J Clin Nutr*. 1999;70:965-975.
25. Bersamin A, Hanni KD, Winkleby MA. Predictors of trying to lose weight among overweight and obese Mexican-Americans: a signal detection analysis. *Public Health Nutr*. 2009;12:64-73.
26. World Health Organization. Obesity - preventing and managing the global epidemic. Report of a WHO Consultation. WHO Technical Report Series 894. Geneva. (2000).
27. Carraça EV, Santos I, Mata J, Teixeira PJ. Psychosocial pretreatment predictors of weight control: a systematic review update. *Obes Facts*. 2018;11:67-82.
28. Zenténius E, Andersson-Assarsson JC, Carlsson LMS, Svensson PA, Larsson I. Self-reported weight-loss methods and weight change: ten-year analysis in the Swedish Obese Subjects Study Control Group. *Obesity*. 2018;26:1137-1143.
29. Pi-Sunyer FX. Medical hazards of obesity. *Ann Intern Med*. 1993;119:655-660.
30. Pan A, Sun Q, Czernichow S, et al. Bidirectional association between depression and obesity in middle-aged and older women. *Int J Obes*. 2012;36:595-602.
31. The Public Health Agency of Sweden. Hälsa på lika villkor? Nationella folkhälsoenkäten [Health on equal terms? The national public health survey] [Web page]. <http://www.folkhalsomyndigheten.se>. Accessed January 21, 2020.
32. World Health Organisation. *Global recommendations of physical activity for health*. Switzerland: WHO; 2010.
33. Puhl R, Suh Y. Health consequences of weight stigma: implications for obesity prevention and treatment. *Curr Obes Rep*. 2015;4:182-190.
34. Evans EH, Sainsbury K, Kwasnicka D, Bolster A, Araujo-Soares V, Sniehotta FF. Support needs of patients with obesity in primary care: a practice-list survey. *BMC Fam Pract*. 2018;19:6.
35. Van Loon J, Tijhuis S, Picavet P, Surtees PG, Ormel J. Survey non-response in the Netherlands: effects on prevalence estimates and associations. *Ann Epidemiol*. 2003;13:105-110.
36. Stang A, Jöckel KH. Studies with low response proportions may be less biased than studies with high response proportions. *Am J Epidemiol*. 2004;159:204-210.
37. Visscher TLS, Viet AL, Kroesbergen IHT, Seidell JC. Underreporting of BMI in adults and its effect on obesity prevalence estimations in the period 1998 to 2001. *Obesity*. 2006;14:2054-2063.

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