Communication with an obese person

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GRADUATE THESIS

Zagreb, 2021

This graduate thesis was made at the University Hospital Centre Zagreb, Department of Endocrinology and Diabetes, Referral Centre for the Treatment of Obesity in Croatia mentored by Maja Baretić, MD PhD and was submitted for evaluation during the academic year 2020/2021.

Abbreviations

BMI	Body Mass Index
BM	Body Mass
BH	Body Height
SAS	Statistical Analysis Software
χ^2 test	Chi square test

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Summary

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Epidemic of obesity is present worldwide. Obesity-related diseases are the main cause of mortality and morbidity, with huge impact on social aspect of life. Since terminology used during diagnosis of obesity is sometimes perceived as insulting, the proper communication with physicians is of the most importance. A study was conducted with the aim to provide a term that would regain consciousness about medical condition avoiding unnecessary discomfort. A total of 200 students (153 females, 47 males) attending 4^{th}- 6^{th} year at the School of Medicine, University of Zagreb answered the online questionnaire. Four terms describing excess body weight were evaluated. Attitudes of young people, not burdened with former experience towards particular terminology, were analysed as acceptable/unacceptable in healthcare vs. everyday surrounding. Data was collected using SurveyMonkey® tool. Participants found the terms ‘adipose-adipozan’ and ‘obese-pretio’ acceptable in communication in healthcare and everyday surrounding. Term ‘chubby-bucko’ was found mostly unacceptable. The term ‘fat-debeo’ was considered inappropriate by the most of overweight students. Female students considered the term ‘fat-debeo’ inappropriate in interaction with healthcare workers, while male students didn't find it offensive. The recommendation is to use terms ‘adipose-adipozan’ and ‘obese-pretio’, to avoid colloquial terms. The term ‘fat-debeo’ should be used with caution.

Keywords: obesity, diagnosis, terminology, communication, attitudes

Sažetak

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Komunikacija s pretilom osobom

Epidemija debljine prisutna je u u cijelom svijetu. Bolesti vezane uz debljinu su vodeći uzrok mortaliteta i morbiditeta, uz upliv i na socijalni aspekt života. Kod postavljanja dijagnoze debljine izrazito je bitna komunikacija s liječnikom te se sama terminologija ponekada doživljava uvredljivom. Cilj ove studije bio je iznaći nazivlje kojim bi se naglasila ozbiljnost medicinskog stanja, no izbjegla nepotrebna nelagoda imenovanjem debljine. U studiju je uključeno 200 studenata (153 žene, 47 muškarca) koji su pohađali 4.-6. godinu studija Medicinskog fakulteta Sveučilišta u Zagrebu. Ispitanici su odgovorili na upitnik evaluirajući četiri naziva koji opisuju višak tjelesne mase. Ispitanici su bili mladih ljudi, neopterećeni ranijim iskustvima te su analizirani njihovi stavovi prema terminu koji im je bio prihvatljiv/neprihvatljiv u zdravstvenom i svakodnevnom okruženju. Podatci su sakupljeni koristeći SurveyMonkey® alat. Ispitanici su smatrali da su nazivi ‘adipozan’ i ‘pretio’ prihvatljivi u zdravstvenom i u svakodnevnom okruženju. Naziv ‘bucko’ je bio neprihvatljiv. Naziv ‘debeo’ su smatrali neprihvatljivim gotovo svi ispitanici povećane tjelesne mase. Studentice su, za razliku od studenata, smatrale naziv ‘debeo’ neprihvatljiv u zdravstvenom okruženju. Preporuka je da se u dijagnozi prekomjerne tjelesne mase koriste nazivi ‘adipozan’ i ‘pretio’, da se izbjegavaju kolokvijalni nazivi te da se naziv ‘debeo’ koristi s oprezom.

Ključne riječi: debljina, dijagnoza, terminologija, komunikacija, stavovi

1. Preface

1.1. Obesity

'*Obesity is a chronic, serious, and progressive disease associated with numerous health, social and economic consequences.*' (1). Obesity is one of today's most common and neglected public health problems. The term obesity is classified by the 10th Revision of the International Classification of Diseases with a code E66. The term obesity describes a disease, however the usage of that term sometimes might be considered rude and offensive, consequently disturbing the progress in treatment of that same disease. Modern sedentary lifestyle is one of the biggest factors leading to weight gain across the global population. Obesity can lead to multiple chronic conditions such as cardiovascular disease, type 2 diabetes and cancer which are the leading causes of morbidity and mortality worldwide. A lot of factors contribute to the development of obesity, including genetic, metabolic, behavioural and environmental ones. The rapidity with which obesity is increasing suggests that behavioural and environmental factors, rather than biological changes, accelerated the epidemic. According to one article published in 2010 in the United States, four major categories of economic impact are linked with obesity: direct medical costs, productivity costs, transportation costs and human capital costs (2). A lot of studies have documented harmful stereotypes associated with overweight and obese people. They are usually perceived as lazy, unsuccessful and non-compliant with weigh loss treatment. A societal perception exists in which obese individuals are held accountable for their increased body weight which in turn justifies weight stigmatization (3). Previous reports on obesity discrimination provided evidence of discrimination of obese candidates in the hiring process for employment when compared to normal weight candidates or candidates with unrevealed weight status (4). By 2030, number of overweight and obese adults is going to be 1.35 billion and 573 million people without adjusting to secular trends (5).

1.2. Language matters

Many obese individuals face with stigmatization and discrimination through exposure to undesirable weight-related terms. The communication between physician and obese subject has a great impact on his self-care and future outcome. It is believed that physician's advice will have a potential effect on a subject's behaviour. Inappropriate language can have a negative effect which is usually neglected during clinical encounters (6), leading to poor outcome. Although medical professionals are aware of stigmatization, some of them are unwilling to discuss it with their obese patients. A lot of health workers lack skills required for weigh management advising and they also lack understanding of the negative effect of using unsuitable words (7). A limited literature described that most of the obese individuals claimed that the terms such as 'fatness', 'excess fat', and 'obesity' are the most inappropriate, while the term 'weight' is the most appropriate. This finding affirms that healthcare workers can positively ameliorate patient's quality of care by using different terms (8).

1.3. Health implication of inappropriate communication

The impact of the use of inappropriate language towards obese patients can possess numerous consequences including increased risk of psychological distress, changed eating habits and poor outcomes in weight-loss treatment. Obese subjects are already at higher risk for developing certain serious health conditions. While preferences for weight terms change across different weight categories, it was shown that along with individuals who have a high body mass index (BMI), even normal weight individuals are experiencing weight discrimination and that particular terms are perceived as stigmatizing regardless of body weight (9). Individuals who struggle with weight do not feel their practitioners fully understand them (10). The prejudice and discrimination of overweight and obese individuals may cause certain psychological consequences. There is a correlation between weight stigma and depression (11). The direct effect of healthcare providers' attitudes may decrease the quality of patient's encounter, harm the outcome of the treatment and lead to decreased satisfaction. They can experience high level of stress which may contribute to development of impared cognitive ability. There is a risk of avoidance of clinical care if patients feel that their body weight is a source of embarrassment in that surrounding (12).

2. Hypothesis

The hypothesis is that the students of 4th,5th and 6th year attending the School of Medicine in Zagreb, who are not burdened with former experiences with inappropriate physician-patient communication, have different attitudes toward terminology used to describe patients with excess body weight. Their perception of offensiveness is different in healthcare and everyday surrounding and there are differences regarding gender and their BMI.

3. Objectives

The primary aim of this study is to find the most acceptable term(s) that describes patients who have, according to the BMI classification, excess body weight. The aim is to find terms that are describing medical condition but are not resulting with patient's discomfort.

The secondary aim is to evaluate the difference in attitudes regarding obesity terminology among female and male students and among students with different BMI.

This study intends to find out what terms are acceptable or unacceptable in communication with obese people among medical students of 4th, 5th and 6th year. Furthermore, it compares participants' attitudes according to their gender, BMI and everyday or healthcare surrounding. This study will show how each offered term is perceived by all participants in everyday and healthcare surrounding, among male and female participants and between participants of specific BMI in different surrounding.

4. Participants and Methods

A cross-sectional online survey was carried out at the School of Medicine, University of Zagreb. The study was approved by the Ethics Committee of School of Medicine, University of Zagreb.

4.1. Participants

The medical students from the final years attending the School of Medicine, University of Zagreb (including both Medical studies in English and in Croatian) were asked to participate. Participation was voluntary and anonymous. The inclusion criteria were students who attended a higher year of study (4^{th},5^{th} and 6^{th} year) and who were fluent in the Croatian language. Answers from the 200 students (153 females, 47 males) were analysed. The participants were in the range of 18 to 30 years. The median BMI of participants was 21.7 kg/m^2. There were 153 female (median BMI 20.9 kg/m^2) and 47 male (median BMI 24.0 kg/m^2) participants. Characteristics of participants are shown in Table 1.

Table 1. Characteristics of participants

	All participants N=200				Females N=153				Males N=47			
	Median	Min	Max	SD	Median	Min	Max	SD	Median	Min	Max	SD
BM (kg)	63.0	46.0	110.0	12.07	60.0	46.0	82.0	7.46	81.0	61.0	110.0	10.09
BH (cm)	172.0	153.0	197.0	9.18	169.0	153.0	182.0	6.25	184.0	166.0	197.0	6.42
BMI (kg/m^2)	21.7	18.2	28.3	2.44	20.9	18.2	28.0	2.18	24.0	18.6	28.3	2.19

BM body mass; BH body height; BMI body mass index

4.2. Methods

4.2.1. Data collection

The data was collected using a software tool SurveyMonkey® which allows the survey to be taken online. This particular program is distinct in a way that it does not recognize the person providing the requested data, additionally ensuring anonymity. All of the obtained data was collected via special, password accessible link. As the questionnaire was done using online interface, data was directly generated directly onto a Microsoft Excel table. Participants were invited to take part in the study through social media (Facebook, Instagram, WhatsApp). The survey had an introductory section with an explanation of the purpose of the study and the questionnaire provided by the Referral Centre for the Treatment of Obesity in Republic of Croatia.

4.2.2. Survey procedure

The questionnaire was set up with a variety of responses including yes/no responses, writing in specific data or selecting one or six adequate options. It was composed of twenty questions (Figure 1). The first four questions included anamnestic and anthropometric data (gender, height, weight and yes/no responses to the statement 'I think I have inadequate body mas'). The next four questions evaluated terminology preferences about obesity. This part of questionnaire was divided into two sections. The first one explored communication in heathcare surrounding. Those questions were stated as 'When a person with excess weight communicates with a healthcare provider (physician, nurse, nutritionist, written medical documentation or written instructions) I find (a specific term for excess body weight that was inserted) acceptable or unacceptable. Four different Croatian terms for excess body weight were evaluated as ('debeo/la' equivalent to 'fat', 'adipozan/na' equivalent to 'adipose', 'pretio/la' equivalent to 'obese' and 'bucko/a' equivalent to 'chubby'). Six different levels of agreement were offered to the student ('I do not agree at all', 'I mainly disagree', 'I somewhat disagree', 'I somewhat agree', 'I mainly agree', 'I agree completely'). The second part of the survey explored communication in everyday surrounding. Such questions began with 'In everyday life in communication with acquaintances, friends, family, printed (books and newspapers) or electronic media (TV, movies and internet) I find... Again, four different Croatian terms for excess body weight were evaluated as acceptable or unacceptable with six different levels of agreement.

UPITNIK

Spol

- Muški
- Ženski

Dob

- 18-30
- 31-50
- 51-65
- >66

Moja trenutna tjelesna masa je (kg): ********

Moja trenutna tjelesna visina je (cm): ********

Mislim da imam neodgovarajuću tjelesnu masu

- DA
- NE

Obrazovanje

- Osnovna škola
- Srednja škola
- Viša škola
- Visoka stručna sprema (fakultet, akademija)

Ja sam

- Bolesnik
- Student medicine
- Student društvenih i humanističkih znanosti
- Liječnik
- Nutricionist

1

U razgovoru osobe s prekomjernom tjelesnom masom SA ZDRAVSTVENIM DJELATNICIMA (liječnici, medicinske sestre, nutricionisti, pisana medicinska dokumentacija iti dane pisane upute) smatram navedeni pojam UVREDLJIVIM

	Uopće se ne slažem	Uglavnom se ne slažem	Donekle se ne slažem	Donekle se slažem	Uglavnom se slažem	Potpuno se slažem
Debeo/debela	○	○	○	○	○	○
Adipozan/adipozna	○	○	○	○	○	○
Pretio/pretila	○	○	○	○	○	○
Bucko/bucka	○	○	○	○	○	○

2

U razgovoru osobe s prekomjernom tjelesnom masom SA ZDRAVSTVENIM DJELATNICIMA (liječnici, medicinske sestre, nutricionisti, pisana medicinska dokumentacija iti dane pisane upute) smatram navedeni pojam PRIHVATLJIVIM

	Uopće se ne slažem	Uglavnom se ne slažem	Donekle se ne slažem	Donekle se slažem	Uglavnom se slažem	Potpuno se slažem
Debeo/debela	○	○	○	○	○	○
Adipozan/adipozna	○	○	○	○	○	○
Pretio/pretila	○	○	○	○	○	○
Bucko/bucka	○	○	○	○	○	○

U svakodnevnom razgovoru S POZNANICIMA I OBITELJI, U TISKANIM MEDIJIMA (novine, knjige), ELEKTRONIČKIM MEDIJIMA (TV, film, internet) smatram navedeni pojam UVREDLJIVIM.

	Uopće se ne slažem	Uglavnom se ne slažem	Donekle se ne slažem	Donekle se slažem	Uglavnom se slažem	Potpuno se slažem
Debeo/debela	○	○	○	○	○	○
Adipozan/adipozna	○	○	○	○	○	○
Pretio/pretila	○	○	○	○	○	○
Bucko/bucka	○	○	○	○	○	○

U svakodnevnom razgovoru S POZNANICIMA I OBITELJI, U TISKANIM MEDIJIMA (novine, knjige), ELEKTRONIČKIM MEDIJIMA (TV, film, internet) smatram navedeni pojam PRIHVATLJIVIM.

	Uopće se ne slažem	Uglavnom se ne slažem	Donekle se ne slažem	Donekle se slažem	Uglavnom se slažem	Potpuno se slažem
Debeo/debela	○	○	○	○	○	○
Adipozan/adipozna	○	○	○	○	○	○
Pretio/pretila	○	○	○	○	○	○
Bucko/bucka	○	○	○	○	○	○

3

Figure 1. Sample of a questionnaire

4.3. Statistical analysis

The statistical analysis was done using SAS (Statistical Analysis Software) release: 3.8. Enterprise Edition). The non-parametric statistical tests were used. Categorical variables were presented as frequencies. The difference between two independent categorical variables were tested using the χ^2 test, χ^2 test for equal proportions, Bonferroni post hoc test and Kolmogorov-Smirnov test, while the difference between two independent numerical variables were tested using the Kruskal-Wallis test. Significant level was accepted as $p<0.05$.

5. Results

The perception of acceptability or unacceptability among all students in both everyday and healthcare surrounding is presented on Figures 2-6. Those figures are showing how terms are perceived in both positive and negative aspects, in healthcare and everyday surrounding among all participants. There was a similar pattern of responses in healthcare and everyday surrounding for almost all terms, but not regarding acceptability vs. unacceptability. Medical students found the terms ‘adipose-adipozan’ and ‘obese-pretio’ acceptable in communication with healthcare workers and in everyday surrounding.

When analysing specific terms among all students in interaction with healthcare worker, 67% found the term ‘chubby’ offensive. Term ‘adipose’ is acceptable in 67.5% of students. A total of 67% of students claimed ‘I completely agree’ that term ‘obese’ is acceptable in interaction between a healthcare worker and a patient. A total of 54.5% of students claimed that they ‘mainly disagree’ and ‘completely disagree’ that the term ‘fat’ is acceptable. The term ‘chubby’ was not acceptable for 84% students.

In interaction with friends, family and on electronic media (everyday surrounding), 71% of students claimed ‘I completely disagree’ that the term ‘adipose’ was acceptable. A total of 74% of students also claimed ‘I completely disagree’ that the term ‘obese’ was offensive, while 77% of students claimed ‘I completely agree’ and ‘I mainly agree’ that the term ‘adipose’ was acceptable. The term ‘obese’ was acceptable by 80% of students and the term ‘chubby’ was unacceptable by 52% of students.

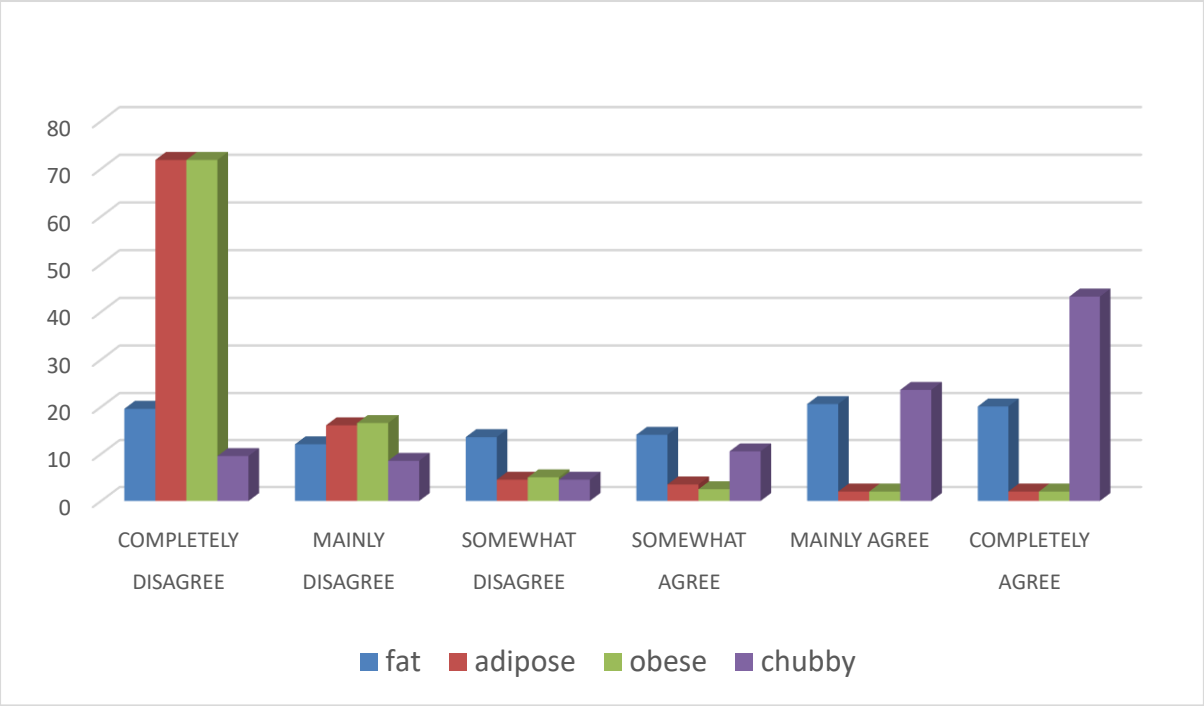

Figure 2. Unacceptable terms regarding obesity among all participants in healthcare surrounding

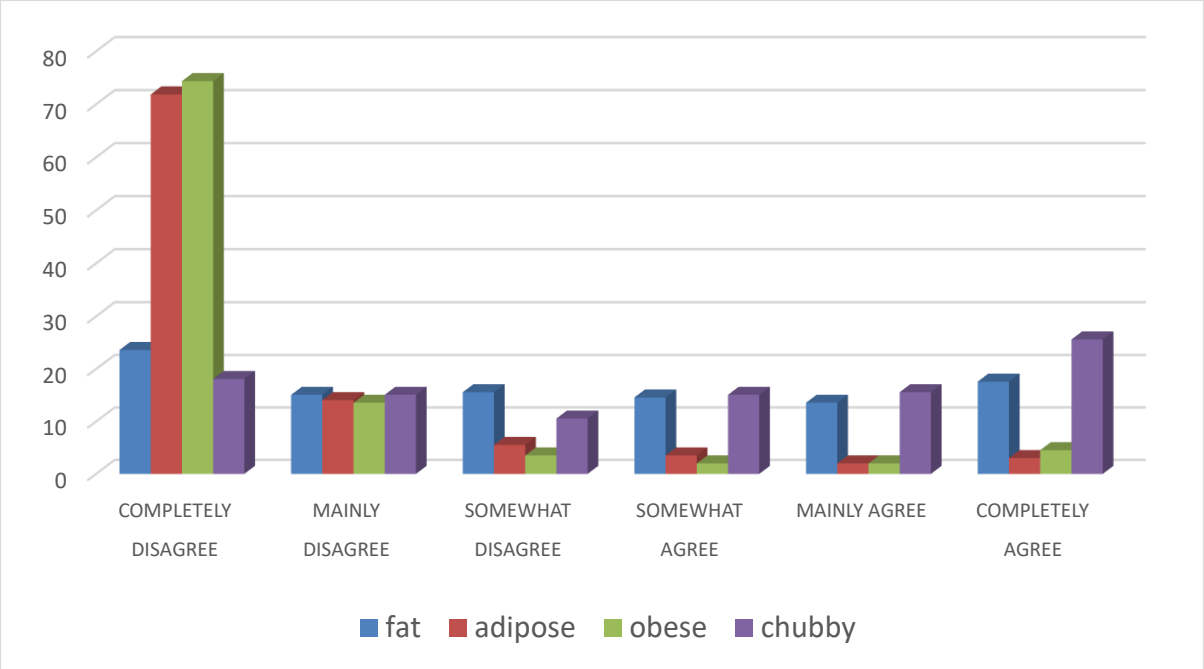

Figure 3. Unacceptable terms regarding obesity among all participants in everyday surrounding

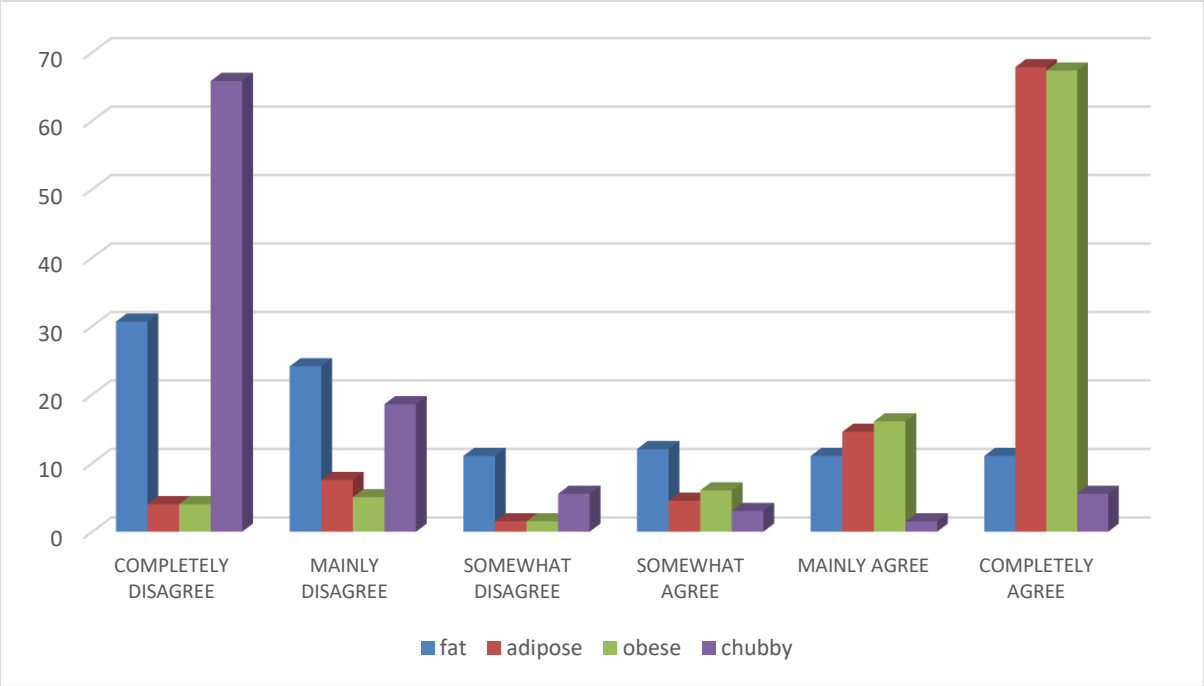

Figure 4. Acceptable terms regarding obesity among all participants in healthcare surrounding

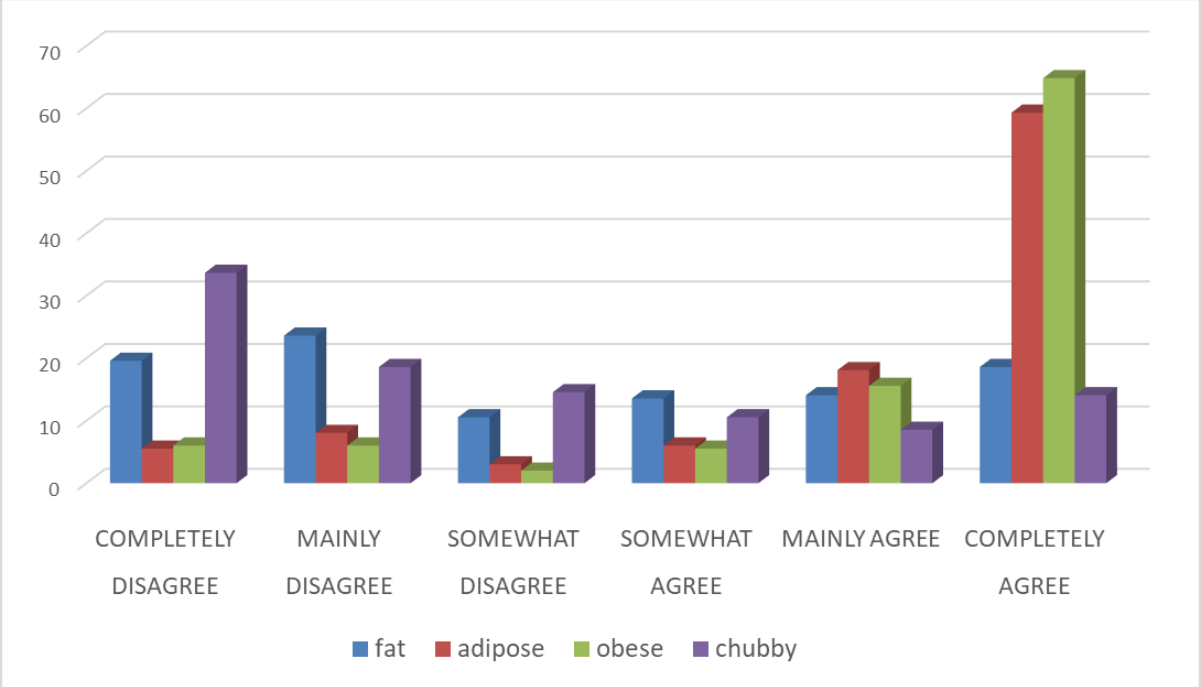

Figure 5. Acceptable terms regarding obesity among all participants in everyday surrounding

5.1. Statistical analysis according to gender

For this statistical analysis we used χ^2 test and χ^2 test for equal proportions.

5.1.1. Term ‘adipose’; Croatian ‘adipozan/adipozna’

When considering term adipose in everyday and healthcare surroundings, there was no significant difference in the attitudes towards it between genders. The term was generally considered acceptable and non-offensive. The difference between ‘I mainly agree’ and ‘I agree completely’, as well as ‘I mainly disagree’ and ‘I disagree completely’ was not analysed, but more considered as similar categories, due to a non-significant difference between them in the statistical analysis (because the two categories are close in meaning). Students in general considered this term acceptable in everyday surrounding ($p<0.0001$).

5.1.2. Term ‘obese’; Croatian ‘pretio/pretila’

Similar results were gained with the term ‘obese’ as with the term ‘adipose’. In everyday and in healthcare surroundings, there was no significant difference regarding attitudes towards the terms ‘obese’, as well between genders. The term is generally considered acceptable and non-offensive. The difference between ‘I mainly agree’ and ‘I agree completely’, as well as ‘I mainly disagree’ and ‘I disagree completely’ was not analysed, but more considered as similar categories, due to non-significant difference between them in statistical analysis (since categories are close in meaning). Students in general considered the term ‘obese’ acceptable in everyday surrounding ($p<0.0001$).

5.1.3. Term ‘fat’; Croatian ‘debeo/debela’

While analysing the answers from all students, it was found that they considered the term ‘fat’ offensive in everyday surrounding ($p=0.018$). While analysing genders, there was a significant statistical difference in attitudes towards the term ‘fat’ between male and female students ($p=0.0006$). It was shown that female population considered the term ‘fat’ offensive, i.e. unacceptable in communication with healthcare workers (Figure 6). Contrary, male students did not find it offensive as a term in communication with healthcare workers.

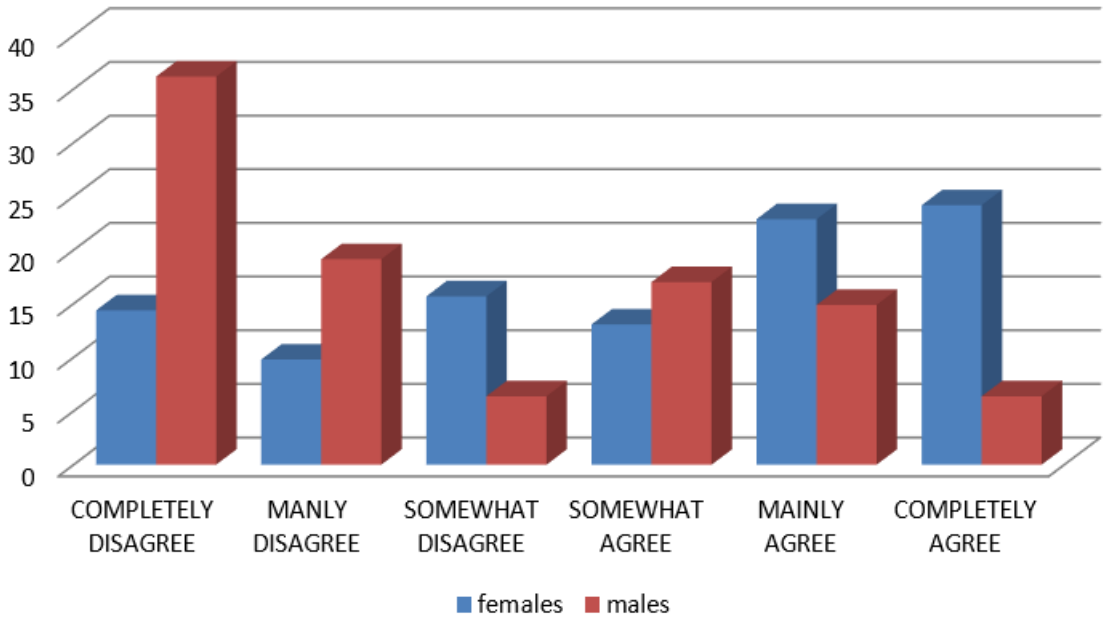

Figure 6. Percentage of participants by gender that consider term 'fat' unacceptable in healthcare surrounding.

5.1.4. Term 'chubby'; Croatian 'bucko/bucka'

There was no statistical significance between genders regarding the usage of the term 'chubby' in communication with healthcare workers or in everyday surrounding. Both genders completely agreed that this term is unacceptable, and completely agreed that this term is offensive in communication between the healthcare workers and the patients. While in everyday communication, the attitudes are not clearly shown, due to the small significance between them, meaning there is no significant conclusion. Students in general consider the term 'chubby' unacceptable in everyday surrounding ($p<0.0001$).

5.2. Statistical analysis according to participant's BMI

A total of 82% of participants were within the normal body mass index category (BMI 18.5-24.9 kg/m^2) and 18% of participants were within overweight category (BMI 25.0-29.9 kg/m^2). A total of 82 (41%) participants expressed dissatisfaction with their personal appearance and weight, making 118 (59%) satisfied with their body image.

For this analysis in the specific BMI categories and specific terms we used χ^2 test for equal proportions and Bonferroni post hoc test, Kolmogorov-Smirnov test and Kruskal-Wallis test. A total of 59% of students consider they have adequate body mass.

There was a statistically significant difference in the acceptability of the term 'adipose-adipozan' between the participant groups of normal weight and overweight ($p=0.006$). In the interaction with healthcare workers, 70.24% of normal weight participants considered the term 'adipose-adipozan' acceptable, while 60% of overweight participants stated that they consider the term 'adipose-adipozan' unacceptable.

In the interaction with healthcare workers, 87.5% of overweight participants considered the term 'fat-debeo' offensive ($p<0.0001$). Only 27.38% of normal weight participants considered it offensive too.

6. Discussion

The major finding of the study shows that medical students from the final years, regardless of gender, found the terms ‘adipose-adipozan’ and ‘obese-pretio’ acceptable in the communication between patients and healthcare workers and in communication in everyday surrounding. Similar results were found in one study done in the United Kingdom, where majority of the students consider the term obesity as medically acceptable, but associate it with a negative social meaning and a sense of disgust. In that study, the terms most likely to be used by students in communication when considering excess bodyweight were ‘your weight may be damaging your health’ followed by ‘you are an unhealthy weight’. Students’ preference for the term ‘BMI’ and their acceptance of euphemisms when talking about weight as a health concern is similar to the preferences of obese people (13). Preferable terminology depends on the language environment, not only on the individual (patient). In the United States of America, studies have shown preferences to neutral terms such as ‘weight‘ and ‘body mass index’ when compared to more direct terms such as ‘obesity’, ‘excess fat’ and ‘fatness’ (14). In a study which analysed 11 terms describing weight, ‘fatness’ was described as the least acceptable term, followed by the terms ‘obesity’, ‘excess fat’, ‘large size’ and ‘heaviness’, which were also considered as unacceptable. The most acceptable term was ‘weigh’ with a statistically significant difference in relation to other terms, followed by ‘body mass index’, ‘weight problem’, ‘excess weight’, ‘unhealthy body weight’ and ‘unhealthy body mass index’ were considered acceptable. According to that data, patients tend to use euphemisms (10).

In contrary, some observations demonstrate that experience in the medical school enhances cynical attitudes and decreases humanitarian feelings. The emphasis in an undergraduate medical education has been biomedically oriented, with little impact on encouraging a more liberal and diverse range of attitudes to social problems in medicine. Substantial changes towards ethical problems occur during medical education despite a lack of education about these issues (15). Using terminology such as ‘obese’ or ‘adipose’ is the optimal solution since it has an exact diagnostic description (unlike i.e. ‘heaviness’ or ‘unhealthy weight’) with a minimal insulting implication.

From our results, it is clear that students don't distinguish terminology ‘adipose-adipozan’ and ‘obese-pretio’ in healthcare and everyday surrounding. A potential bias exists since the study was done at the School of Medicine where students are exposed to the medical terminology during their studies and therefore have a different perception of these terms in contrast to non-medically trained students. It would be interesting to include students from other faculties (i.e. social studies or technical sciences) in a future study to explore such terminology from their perspective.

According to our results, the term ‘chubby-bucko’ was found unacceptable, especially in communication between healthcare workers and patients, showing that colloquial term is not appropriate for a diagnosis. Both male and female students share the same opinion when it comes to using the term ‘chubby-bucko’ in the healthcare system, which is that it is inappropriate.

The term ‘fat-debeo’ was also considered inappropriate an in an everyday surrounding. In the healthcare surrounding, it was unacceptable by half of the students. Specifically, when analysing them by body weight, most of the overweight students considered the term ‘fat-debeo’ unacceptable. Such data demonstrates that some students observed the terms from a personal standpoint and not only from a medical one. Also, there was a statistically significant difference in attitudes towards the term ‘fat-debeo’ regarding gender. Female medical students of the final years considered the term ‘fat-debeo’ inappropriate in an interaction with healthcare workers, while male students did not find it offensive. One study showed that female students attending the Communication Skills course improved their communication skills significantly during their medical education, while male peers did not show improvement from the end of medical school to the end of an obligatory internship (16). Such differences between genders in medical communication is already described; female students communicate in a more patient-centred, positive and emphatic manner.

Inappropriate communication can lead to undesirable reactions, such as one's own negative perception, feelings of guilt, cessation of communication with a healthcare professional, avoidance of a medical examination, and little or no cooperation. When the patients were asked how they would react if they were stigmatized by the physicians diagnosis, 19% of them claimed that they would avoid future physical examinations, and 21% stated that they would look for a new physician (9).

The limitation of the study is the fact that the study was conducted among the students that already have some experience in the healthcare surrounding and who possibly developed some preceding attitude to the medical terminology. The study could be extended by exploring the perceptions of these terms in students attending i.e. Faculty of humanities and social studies or Faculty of electrical engineering and computing. The limitation is also the fact that anthropometrical measures (weight and height) were self-reported, so the data regarding different perceptions in overweight students should be taken with caution.

7. Conclusions

How can we diagnose obesity? How to tell the truth without hurting the patient's feelings? The answer is to choose the adequate terminology while having in mind that the words describing excess of body weight have a huge impact on the patient, both in the healthcare surrounding and everyday environment.

Medical students from the final years found the terms 'adipose-adipozan' and 'obese-pretio' acceptable in regards to the communication in the healthcare system and in an everyday surrounding.

The term 'chubby-bucko' was found mostly unacceptable.

The term 'fat-debeo' was also considered inappropriate in an everyday surrounding by half of the students, distinctly most of the overweight students considered the term 'fat-debeo' unacceptable. Female students considered the term 'fat-debeo' inappropriate in an interaction with healthcare workers, while male students did not find it offensive.

In short, we recommend the use of the terms 'adipose-adipozan' and 'obese-pretio', and furthermore to avoid the term 'chubby-bucko' or any colloquial terms. The term 'fat-debeo' should be used with caution having in mind patient's mindset, gender and attitude.

8. Acknowledgments

Foremost I would like to thank to my mentor, dr.sc.Maja Baretić, for her assistance, feedback and proficiency throughout the process of this research.

I would like to express my deep gratefulness to my dear friends and family for continuous support during my medical studies.

9. References

1. Look M, Kolotkin RL, Dhurandhar NV, Nadglowski J, Stevenin B, Golden A. Implications of differing attitudes and experiences between providers and persons with obesity: results of the national ACTION study. Postgrad Med. 2019;131(5):357-365. doi:10.1080/00325481.2019.1620616

2. Hammond RA, Levine R. The economic impact of obesity in the United States. Diabetes Metab Syndr Obes. 2010;3:285-295. doi:10.2147/DMSOTT.S7384

3. Puhl RM, Heuer CA. Obesity stigma: important considerations for public health. Am J Public Health. 2010;100(6):1019-1028. doi:10.2105/AJPH.2009.159491

4. Flint SW, Čadek M, Codreanu SC, Ivić V, Zomer C, Gomoiu A. Obesity Discrimination in the Recruitment Process: "You're Not Hired!". Front Psychol. 2016;7:647. doi:10.3389/fpsyg.2016.00647

5. Kelly T, Yang W, Chen CS, Reynolds K, He J. Global burden of obesity in 2005 and projections to 2030. Int J Obes (Lond). 2008;32(9):1431-1437. doi:10.1038/ijo.2008.102

6. Lloyd CE, Wilson A, Holt RIG, Whicher C, Kar P; Language Matters Group. Language matters: a UK perspective. Diabet Med. 2018;35(12):1635-1641. doi:10.1111/dme.13801

7. Gray CM, Hunt K, Lorimer K, Anderson AS, Benzeval M, Wyke S. Words matter: a qualitative investigation of which weight status terms are acceptable and motivate weight loss when used by health professionals. BMC Public Health. 2011;11:513. doi:10.1186/1471-2458-11-513

8. Lydecker JA, Galbraith K, Ivezaj V, White MA, Barnes RD, Roberto CA, et al. Words will never hurt me? Preferred terms for describing obesity and binge eating. Int J Clin Pract. 2016;70(8):682-690. doi:10.1111/ijcp.12835

9. Puhl R, Peterson JL, Luedicke J. Motivating or stigmatizing? Public perceptions of weight-related language used by health providers. Int J Obes (Lond). 2013;37(4):612-619. doi:10.1038/ijo.2012.110

10. Wadden TA, Didie E. What's in a name? Patients' preferred terms for describing obesity. Obes Res. 2003;11(9):1140-1146. doi:10.1038/oby.2003.155

11. Koball AM, Carels RA. Coping responses as mediators in the relationship between perceived weight stigma and depression. Eat Weight Disord. 2011;16(1):e17-e23. doi:10.1007/BF03327516

12. Phelan SM, Burgess DJ, Yeazel MW, Hellerstedt WL, Griffin JM, van Ryn M. Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. Obes Rev. 2015;16(4):319-326. doi:10.1111/obr.12266

13. Swift JA, Choi E, Puhl RM, Glazebrook C. Talking about obesity with clients: preferred terms and communication styles of U.K. pre-registration dieticians, doctors, and nurses. Patient Educ Couns. 2013;91(2):186-191. doi:10.1016/j.pec.2012.12.008

14. Volger S, Vetter ML, Dougherty M, Panigrahi E, Egner R, Webb V, et al. Patients' preferred terms for describing their excess weight: discussing obesity in clinical practice. Obesity (Silver Spring). 2012;20(1):147-150. doi:10.1038/oby.2011.217

15. Price J, Price D, Williams G, Hoffenberg R. Changes in medical student attitudes as they progress through a medical course. J Med Ethics. 1998;24(2):110-117. doi:10.1136/jme.24.2.110

16. Simmenroth-Nayda A, Weiss C, Fischer T, Himmel W. Do communication training programs improve students' communication skills?--a follow-up study. BMC Res Notes. 2012;5:486. doi:10.1186/1756-0500-5-486

10. Biography

I was born in Berlin, Germany on March 19th 1996. My parents are originally from Split, Croatia where I finished elementary school and gymnasium 'Vladimir Nazor'.

I am an active member of Students' section for Dermatology and Venerology and a member of Croatian Association for Hypertension, students' section. I am also a member of Croatian Medical Students' International Committee (CroMSIC) organization.

For a while I volunteered at the Department of Infectious Diseases in the University Hospital Centre Split. During 2018-2019 I was a volunteer in the Mediterranean Institute for Life Sciences (MedILS) where I got acquainted to creative professionals and participated in research of branched DNA. This experience got me interested in science, so during my 5th year of study I started to participate in scientific projects in Referral Centre for the Treatment of Obesity in Republic of Croatia exploring the influence of glucagon like peptide-1 on weight loss. I've participated in EIT Health Innovation Days competition where I won 2nd place with my team. I've also participated in ZIMS 2020 international congress and CROSS 2020.

Besides my native language and English, I have A1 level of Italian and A2 level of German.