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An Interdisciplinary Approach to the Medical Discourse of Obesity: Analyzing Patients' Speech

Dimitrios T. Karalis[1]*, Efthymia M. Tsaroucha*[2,] Tilemachos D. Karali[3], Angeliki S. Kleisiari[4] & Stergios D. Karalis[5]
[1]*Adjunct Lecturer, Department of Nutrition and Dietetics, University of Thessaly, Greece; Registered Endocrinologist, Member of the Hellenic Endocrine Society*
[2]*Adjunct Lecturer of Linguistics & Post-doctoral Researcher, Foreign Languages Centre, University of Thessaly, Greece*
[3]*MD in Medicine, Aristotle University of Thessaloniki & General Hospital of Sitia; Greece*
[4]*BA in Greek Philology, Hellenic Open University of Cyprus, MSc in Bioethics, School of Medi-cine, Democritus University of Thrace; Greece*
[5]*MD in Medicine, Democritus University of Thrace & General Hospital of Trikala; Greece*
Corresponding Author: Dimitrios T. Karalis, E-mail: karalis_dim@yahoo.gr; Efthymia M. Tsaroucha, E-mail: efiaeris@yahoo.gr

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ABSTRACT

This paper argues for an interdisciplinary approach to the medical discourse of obesity and at-tempts to build bridges between the disciplines of medicine and linguistics. The article aims to highlight the anthropological significance of medical discourse by investigating expressions of suffering. The paper analyzes patients' speech and how they describe obesity and its complications. It is suggested that the use of figurative language (by means of metaphor and metonymy) in order to describe this disease is shaped by environmental and physical factors.

Introduction: Obesity Definition, Description, Causes, and Factors

Obesity is the abnormal or excessive deposition of fat in the human body which putting its health at risk (World Health Organization). B.M.I determines the degree of obesity =weight/ height 2. According to B.M.I. levels, individuals are grouped into four categories (World Health Organization, Ravusin & Bogardus; 1989):

B.M.I. ≤ 18,5 kg/m 2; underweight
B.M.I. = 18,5 – 24,9 kg/m 2; normal weight
B.M.I. = 25 – 29,9 kg/m 2; overweight
B.M.I. ≥ 30; obese
B.M.I. = 30 – 34,9; 1st degree of obesity
B.M.I. = 35 – 39,9 ; 2nd degree of obesity
B.M.I. ≥ 40; hazardous or malignant obesity

Another way of estimating the degree of obesity is the relation of waist to rumps. It is defined as: W.H.R. (waist-rumps-relation)= waist perimeter/ rumps perimeter. This is an indicator of estimating the risks an obese individual

may face, especially in relation to cardiovascular diseases and type II diabetes (Hammond, 2003). Levels of WHR higher than 1.0 in men and 0.8 in women mean that abdominal obesity is extremely hazardous for complications (Heymsfield et al., 1982).

The main cause of developing obesity is the dis-regulation of energy balance; that is the dis-regulation between energy intake and energy consumption. In this case, the former outweighs the latter (Zambelas, 2007).

Obesity is described by the increase of fatty tissues both in terms of number and size of adipose cells. The number of adipose cells is increased during childhood and the first stages of adolescence (Cumlea et al.; 1982, Soriguel Escofet et al.; 1996). The size of adipose cells is increased in accordance to the extra energy intake; when adipose cells reach maximum volume they are divided (Zambellas; 2007). If energy intake decreases and is less than the consumed one, the individual will experience weight loss and the volume of adipose cells will be decreased too (but not in terms of number). In case of having a positive energy balance, the volume of adipose cells will be increased (Wabitch; 2000, Aihaud, Grimaldi & Négler; 1992).

The causes of obesity can be genetic, metabolic, endocrinological, family history, social and pharmaceutical.
According to Dalton (1997), the center of hunger and satiation is located in hypothalamus. Therefore, disorders related to the production of hormones or to their receptors could affect the development of obesity.

Leptin is a hormone which is secreted from adipose cells and acts through the hypothalamus by either decreasing or increasing our mood in ingesting food according to its levels (cf. Montague et al.; 1997, Friedman & Halaas; 1998). Disorders or mutations in the gene for the production of leptin and in the gene of leptin's receptors and PPRAs (genes responsible for metabolizing lipids and glucose homeostasis) (cf. Beamer et al.; 1998, Chagnon et al.; 2003) are factors which affect body weight. Research has shown that α-MSH is a neuro peptide which acts in hypothalamus by proroguing appetite. Therefore, a mutation in the gene which codes the production and synthesis of POMC leading to the production of α-MSH may be a cause of severe obesity (Krude et al.; 1998). The analysis of this genome has shown that specific genes concerning the development of obesity are present in the chromosomes 2p, 3q, 5p, 6p, 7q, 10p, 11q, 17p and 20q (Loos & Bouchard; 2003).

Metabolic causes, such as basal metabolism, physical activity and thermogenesis (energy consumed for food digestion and absorption) are genetically predisposed factors which affect obesity (cf. Ravussin & Bogardus; 1989, Loos & Bouchard; 2003, Bray; 1998, Maes, Neale & Eaves; 1997, Stunkard, Sorensen & Hanis; 1986).

Hypothyroidism, menopause, hypogonadism and impairments in the hypothalamus constitute endocrinological causes which can lead to obesity. Moreover, hyperinsulinaemia and insulin resistance, conditions related to the polycystic ovary syndrome, can also lead to obesity (Sims et al.; 1973).

Way of living can also be a cause of developing obesity. Demanding everyday life, unhealthy dietary choices and the lack of physical activity which is replaced by sedentary lifestyle often lead to obesity and complications (cf. Shultz & Shoeller; 1994, Health Education Authority; 1995, Wareham et al.; 1998, Young; 2002). Lack of education is a negative factor since poor dietary education leads to poor dietary choices and insufficient calorie intake resulting in an unbalanced diet Rissanen et al.; 1991, Friedman; 2002). This situation appears more often in lowest level classes of developing countries (I.O.T.F.; 2005).

Another cause of developing obesity is psychological factors. Depression, often leads to obesity. Stressing emotions lead to overeating resulting in the increase of body weight. This leads to low self-esteem as well as to the undervaluation of calories' intake (Di Pietro et al.; 1992). Depression, however, can also lead to weight loss (Stunkard et al.; 1990).

Last but not least, research has shown that many times certain medicines can lead to the development of obesity. Such can be: glucocorticoids, birth control pills, progestogens, insulin as well as anti-diabetic tablets. Many types of psychotropic drugs, such as antipsychotics, antidepressant and to a lesser extent anxiolytic. In general, the medicines that prevent the function of H1 histamine receptors, 5-5HT serotonin receptors and dopamine receptors increase body weight (cf. Devlin & Yanovski; 2000, Stahl; 1998).

Defining Discourse

According to Sifianou (2001: 1), the term 'discourse' refers to language produced by its users, interaction is implied and it extends to cover longer stretches of language, rather than only sentences and utterances. 'Discourse' is something broad and diverse as it is applied both to written and spoken language; thus, "discourse analysis" explores who uses the language, to whom, why, when, where and how (ibid).

Context plays a very important role in order to comprehend the notion of discourse. Context is co-text, and co-text refers to the linguistic environment of an utterance. According to Sifianou (2001: 62, 73), context is interrelated with text as it exists prior to it and includes social and cultural information. Thus, it is composed of three main levels: the social, situational and cultural level.

Context is determined by situational and cultural information and is shaped by selection, coercion and modulation. As Cook (1989: 4-6), points out, context constitutes a dynamic model that changes due to backgrounds including either the notion of 'local' or 'global' meaning. According to this idea, discourse is context that underlies meaning. Discourse is defined as language in use (with or without grammaticality) and presupposes the existence of coherence in order to have meaningfulness and unity (ibid).

The present research is based on Tsaroucha's et al. (2020) approach on medical discourse which investigates how patients suffering from subclinical hypothyroidism use language figuratively (by means of metonymy and metaphor) in order to describe the disease and its symptoms.

Review of the literature: Metaphor and Metonymy

As far as metaphor is concerned, Lakoff and Johnson (1980a: 453) stated that for most people, metaphor constitutes a device of poetic imagination; metaphor is a matter of extraordinary rather than ordinary language and is typically viewed as a characteristic of language alone.

The framework of cognitive linguistics sees metaphor as being pervasive in everyday life, not just in language but in thought and action as well (Lakoff & Johnson 1980a: 454). Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature in the sense that "[t]he concepts that govern our thought are not just matters of the intellect. They also govern our everyday functioning to the most mundane details. Our concepts structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities" (ibid: 454).

According to Mac Cormac (1988: 127), metaphor constitutes a knowledge process because the human mind combines concepts that are not normally associated in order to form new concepts and this cognitive ability operates either consciously or subconsciously (in a broader context where the human mind functions in the physical world).

In addition, Bartsch (2002: 49) claimed that metaphors are generated on the experiential level of concept formation (conceptual metaphors) as well as on the theoretical level of linguistically explicated concepts (linguistic metaphors). Feder-Kittay (1989: 13-14) stated that "a metaphor provides the linguistic realization for the

cognitive activity by which a language speaker makes use of one linguistically articulated domain to gain an understanding of another experiential or conceptual domain".

Additionally, Croft and Cruse (2004: 55) stated that metaphor involves a relationship between a source domain (namely "the source of the literal meaning of the metaphorical expression") and a target domain (namely "the domain of the experience actually being described by the metaphor"). Definitions of metaphor suggest that "[...] two elements are brought together but the source domain loses its existence when mapped onto the target domain; although the source do- main itself is wiped out, some aspects of its own nature or structure are transferred to that of the target domain" (Dirven 2002: 100).

As far as metonymy is concerned, it is without a doubt that metonymy constitutes a fundamental cognitive 'tool'. Taylor (1989: 124) stated that its essence "resides in the possibility of establishing connections between entities which co-occur within a given conceptual structure". According to Panther and Radden (1999: 2), metonymy is a process in which one conceptual entity, 'the target', is mentally accessible by means of another conceptual entity, 'the vehicle'. Langacker (1993: 30) argued that "metonymy is basically a reference- point phenomenon [...] affording mental access to the desired access".

One of the most important notions encouraging metonymy is the notion of contiguity. Ullman (1957), Lakoff and Johnson (1980a) and Taylor (1989) argued that metonymy could be defined as a shift of a word meaning from the entity it stands for to a 'contiguous' entity. Various proposals have been developed for the notion of contiguity. Lakoff and Johnson (1980a) claimed that contiguity deals with the whole range of associations which are commonly related to an expression.

To conclude, other studies approached contiguity in terms of encyclopedic knowledge. Haiman (1980) and Langacker (1987) stated that encyclopedic knowledge means that everything we know about a concept is part of its meaning. According to Langacker (ibid), some knowledge is more central than some other knowledge. Accordingly, Langacker (ibid) argued for a pattern of centrality and peripherality according to which the meaning of one word can be distinguished from the meaning of another word.

Analyzing Patients' Speech: The medical discourse of obesity

This part investigates patients' speech and how they describe obesity and its complications. It is suggested that the cognitive processes of metaphor and metonymy are used in expressions of suffering and how people living with obesity think of their bodies.

As far as the demographics are concerned, the paper investigates the figurative use of language in the description of obesity by drawing evidence from 42 Greek patients suffering from obesity. Their BMI ranges from 28 to 32 and their age ranges from 20 to 35 years. 65% of them are women and 35% of them are men. Other conditions related to obesity are: i) fatty liver filtration tested by sonography and ii) mild increase of transaminases (SGOT, SGPT and γ-GT).

In order to describe their body weight, patients use expressions like *I don't want to be hugged as my waist is Pindus*[2] *mountain range* [δε θέλω να με αγκαλιάζουν γιατί η μέση μου είναι η οροσειρά της Πίνδου]. This expression is used metaphorically since the human body is described as a large mountain range. Moreover, this metaphoric expression is intensified by hyperbole as *Pindus* and *mountain range* serve as linguistic realizations of exaggerations in the description of body weight.

[2] The Pindus (also Pindos or Pindhos) (Greek: Πίνδος) is a mountain range located in northern Greece and southern Albania. It is roughly 160 km long, with a maximum elevation of 2,637m (Mount Smolikas). Because it runs along the border of Thessaly and Epirus, the Pindus range is known colloquially as the spine of Greece. The mountain range stretches from near the Greek-Albanian border in Northern Epirus, entering the Epirus and Macedonia regions in northern Greece down to the north of the Peloponnese. Geologically it is an extension of the Dinaric Alps, which dominate the western region of the Balkan Peninsula (source: *Wikipedia*). Patients use Pindus in their description of obesity since they live in the regional unit of Thessaly.

In addition, many patients speak of their body weight by using animal terms. For example, they use expressions such as *I am a whale* [είμαι φάλαινα], or *I am a cow* [είμαι αγελάδα] or *I am an ox* [είμαι βόδι]. These expressions are used metaphorically and they subject to the GREAT CHAIN METAPHOR, which allows us to understand nonhuman attributes in terms of human character traits. Lakoff and Johnson (1980b) treated ontological metaphors as an exploitation of a folk model in which different kinds of entities are arranged in a hierarchy where human beings represent the higher order and natural physical things are located in the lower position. The items in the hierarchy are organized as follows: Human beings > animals > plants > complex objects > natural physical things.

The GREAT CHAIN METAPHOR determines the relationships holding between the different orders of the hierarchy. Human attributes in terms of corresponding animal attributes as in *I am a whale*, *I am a cow, I am an ox.* These expressions are realizations of the PEOPLE ARE ANIMALS metaphor since certain attributes of whales, cows and ox (namely, weight and size) are used to describe people.

Along the same lines, the expression *my body is a sack of fat with two legs* [το σώμα μου είναι ένα σακί λίπους με 2 πόδια] is used by people living with obesity in order to describe their body image. This expression is used metonymically because the human body is described as a container. The encouraged metonymy is CONTAINER FOR CONTENT. The human body stands for a container (=sack) and fat stands for content. This expression also has a metaphoric reading since the human body is visualized as a moving object.

Finally, the expression *my clothes will explode* [τα ρούχα μου θα εκραγούν] is used to describe excessive body weight and constant weight gain. This expression has a metaphoric reading since clothes as objects are transformed into explosive materials or bombs. The human body is depicted as something physically destructive which is about to explode (due to excessive weight).

Conclusion

The present study attempted to investigate how people living with obesity use language in order to describe this medical condition. The non-literal use of language by means of metaphor and metonymy showed that these patients describe their self-image through guilt. This is evident by the fact that body weight is designated by specific attributes, related to size and quantity (eg., whales, mountain range etc.).

Moreover, an interdisciplinary approach to the medical discourse of obesity suggests that patients' description of obesity is governed by metaphors and metonymies. Such metaphors and metonymies are representative of the way they experience their body image and weight gain. Thus, an interdisciplinary approach to the medical discourse of obesity suggests that linguistic expressions are structured and shaped by environmental and physical factors. Patients describe their bodies by drawing reference to nature (mountains), animals (whales, cows, ox) and objects (sack, bomb) as shown in *figure 1*.

Figure 1: *Patients' description of obesity*

THE LINGUISTIC REALIZATION OF OBESITY BY MEANS OF METAPHOR AND METONYMY	
Body weight description	**Expressions**
Body image through nature	I don't want to be hugged as my waist is Pindus mountain range.
Body image through animals	I am a whale, an ox, a cow.
Body image through objects	My body is a sack of fat with two legs.
Body image through explosive materials	My clothes will explode

Future Research

Future research could focus on the investigation of other illnesses and the way patients use language. Future research could attempt to shed light on the psychological support of patients. Future research could also highlight the extent according to which language —as a usage-based vehicle— is shaped and formed by environmental and physical factors.

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