

Hormones, sexuality and male aging: a study of website images

Cristiane da Costa Thiago^(a)

Jane Araujo Russo^(b)

Kenneth Rochel de Camargo Júnior^(c)

(a,b) Departamento de Políticas e Instituições de Saúde, Instituto de Medicina Social, Universidade do Estado do Rio de Janeiro (IMS/UERJ). Rua São Francisco Xavier, 524, Pavilhão João Lyra Filho, 7º andar, Maracanã. Rio de Janeiro, RJ, Brasil. 20550-013. cristiago7@gmail.com; jane.russo@gmail.com

(c) Departamento de Planejamento e Administração em Saúde, IMS, UERJ. Rio de Janeiro, RJ, Brasil. kenneth@uerj.br

This study focuses on the construction of male hormonal decline relating to aging as part of a more general process of medicalization of male sexuality and aging. In order to accomplish this objective, 14 websites of pharmaceutical laboratories that sell drugs for male sexual health and seven websites of medical-scientific associations focusing on male sexual health were surveyed. We used the images found on these sites as analysis material. Based on our analysis, we discuss the existence of a partnership between the medical-scientific associations and the pharmaceutical industry, which tends to present male aging as a medical problem and promotes hormone replacement therapy (HRT) with testosterone as a way of treating it. This therapy is also presented as a means to recover happiness, productivity, 'quality of life' and wellbeing.

Keywords: Medicalization. Physiological sexual dysfunction. Sexual health. Men's health. Hormones.

Introduction

The general aim of this study is to characterize how the age-related decline in testosterone in men is defined and treated on the websites of drug companies and medical and scientific associations, and to analyse the process by which male sexuality and ageing have been medicalized. To this end, we have used pictures on these websites as the subject matter for our analysis.

The concept of medicalization proposed by Conrad¹ describes a complex process in which non medical problems are defined and treated as medical problems, usually in terms of disorders. According to Conrad various agents participate in this process – the pharmaceutical and medical equipment

industry, doctors, media and the lay public – which is characterized by consumption relations that transform perceptions and ideas about health and illness. .

Nowadays, the age-related male hormone decline occupies a significant place in the medical-scientific discourse, in which it is presented as a medical problem, with specific symptoms, deserving a specific treatment (hormonal replacement with testosterone). .

In medical literature the age-related male hormone decline is characterized by low blood levels of testosterone in middle aged men (around forty years old), accompanied by characteristic symptoms like fatigue, depression, loss of libido, erectile dysfunction, reduction of muscle tissue, among others².

We chose to use of the expression “age-related male hormone decline”, derived from biomedicine, because we have considered it the most descriptive and neutral we could find for our purposes. Nevertheless we know its use is problematic because it is certainly not only the description of a state. On the contrary, because it refers to ‘hormonal decline’, it ends up approaching the medical vocabulary. If we use Conrad¹ definition, we are facing the “medical translation” of a non medical problem, in other words, a medicalization process. In a tentative way, we may say that we are dealing with the medicalization of male old age itself, or of the physical and mental decline that inevitably follows the aging process.

We used internet as our research field because, as Vargas³ put it, the internet is an important means for producing and promoting ideas, concepts and information in the health field, a source for the dissemination of scientific ideas, and for health promotion, with strong implications for individual and collective existence.

Furthermore, some characteristics of the internet – the speed with which information is transmitted and the variety of ways by which messages are conveyed (texts, images, videos) and easily selected and “sailed” by the mouse – add to its significant marketing power, regarding the selling of products and services and also the promotion and dissemination of information. .

We intend to contribute to the study of age-related male hormone decline, as a part of the current debate on male health, from a critical point of view, so that the medicalization perspective is taken into account as part of the process of developing new nosological categories or new approaches of the existing ones.

This process stimulates the consumption of medicine and other health technologies. The pharmaceutical industry, health professionals and the media are among the agents that build and feed such a process, helping to foster a context in which medical-pathological definitions are increasingly applied to matters and problems until then viewed as non medical.

Medicalization, hormones and male ageing: a brief reflection

In his description of the medicalization process, Conrad¹ draws attention to the growing rise in recent years of the number of problems being termed as medical that were not previously addressed in this sphere. Natural life processes (birth, ageing, death), physiological aspects (menstruation, sleep, hunger), characteristics and experiences of the human being (moods, emotions) and behaviours that were previously considered deviant have now become the subject of medicalization.

The medical discourse on age-related male hormone decline deals with general matters that involve male health, linking hormone decline to issues such as: well-being, quality of life, self care, the need to search medical help and health information, among others.

New representations of male health are emerging in the medical discourse about age-related decline in testosterone. Topics like male sexuality and ageing are now being addressed from different perspectives, producing new norms and ideals that are driving the formulation of new needs and types of consumption.

Rohden⁴ is one author who has noted how the conceptions of ageing and sexuality are changing in current times, and how behaviours centred around the valuing of a young, healthy, sexually active body are increasingly being promoted. She sustains that these conceptions are incompatible with the idea that as the years go by the body changes, accompanied by a supposed decline in sexual interest and activity. Today, the ideal would seem to be to stay youthful as long as possible and to keep up the best possible sexual performance by being disciplined in one's behaviour and/or consuming technologies available for this purpose⁴.

In the increasingly wide coverage of age-related decline in testosterone and its treatment by hormone replacement therapy (HRT) in the mainstream media and scientific publications, testosterone is presented as "the male hormone" and related to a prolongation of youth and good sexual performance (also seen as a kind of "fountain of youth" and a precondition for a healthy life), while also being ascribed the power to recoup the productivity, quality of life, wellbeing and happiness men are supposed to have "lost".

Testosterone HRT is therefore often promoted as part of the regular "maintenance" of the male body¹ and a way of "having" or "recuperating" a healthy, productive, happy life.

In the field of medicine, different diagnostic categories/terminologies are employed to characterize age-related decline in testosterone as a condition, disturbance or deficiency, i.e. something to be fixed: andropause, male climeractic, male menopause, late-onset hypogonadism (LOH), androgen deficiency in the aging male (ADAM), partial androgen deficiency in the aging male (PADAM) and, more recently, testosterone deficiency syndrome (TDS)⁵.

Although the different diagnostic categories present various points in common, being similar in their description of the majority of symptoms referring to age-related male hormone decline, there are differences in the process by which each category is constructed^{2,4,13}. For this reason we didn't think it

was advisable to consider them purely as synonyms.

The new acronyms (ADAM, PADAM, TDS) have largely replaced the former terms of male menopause, male climateric and andropause. This seems to be part of a movement designed to shed any negative connotations they may have had, while broadening the diagnostic spectrum and thereby the consumer market in a process that is not unlike when “sexual impotence” was replaced by “erectile dysfunction”^{14,15}.

From this perspective, it is important to be aware that a term like andropause is less likely to be interpreted as a “deficiency” or “disorder”, and may bring to mind a “natural” process, a male counterpart of menopause, which would make it less “medicalizable” than the acronyms listed above^d.

Several authors, like Angel^{16,17}, Healy¹⁸, Fishman¹⁹ and Oldani^{20,21}, have noted diagnostic categories being increasingly produced, promoted and launched simultaneously with the medicines to treat them. Indeed, Applbaum²² suggests that the marketing techniques used by the pharmaceutical industry to promote medications ultimately contribute towards “moulding” a certain type of consumer: the “medical consumer”. These techniques include “disease mongering”, or the “commercialization” of disease, with new diseases being “created” or existing conditions being redefined²³ in order to promote the consumption of a certain drug.

The fact that a medication will treat a specific disease “discovered” by science and prescribed by a doctor legitimizes it and makes it seem as if it is the only effective treatment for that disease²⁴. This drives sales of pharmaceutical products, since drugs are promoted using scientific statements about their medical benefits and effectiveness, which are supposedly proven in “objective” clinical research. Medicine and science are therefore active in marketing new drugs and diseases, while simultaneously bolstering their own legitimacy¹⁹.

The pharmaceutical industry does not only sell the goods it produces; it also – and increasingly – “sells” information about them²⁴. Indeed, it harnesses all manner of media to attain its objectives amongst medical and lay target groups. The mainstream media – television, newspapers, magazines and the internet – have all become vehicles for boosting demand for their products.

Corroborating this idea, Barros²⁴ has identified a worrying rise in the use of the internet as an advertising channel to reach the end consumer, often disguising its marketing objectives in the form of educational texts or information to “promote health”.

Something else we have observed is the drug industry’s use of the internet to supply medical professionals and other health workers with information. They post information on the websites of medical and scientific associations and drug companies, among others, which have areas whose access is restricted to these professionals. These areas contain information on health and disease and on the

^d Conflicts in the field of science and medicine over the legitimization of these diagnostic categories and terminologies are an indication of the medicalization process, whereby a legitimate name for a condition endorses its diagnosis, and this in turn serves in a way to restructure and constitute the condition itself.

drugs produced by these companies.

This is the backdrop in which we designed this study to analyse images related to age-related decline in testosterone in men on drug companies' and medical and scientific associations' websites.

Methodology

We developed a standard procedure for analysing the images encountered on the target websites. The idea was to draw correlations between ideas and elements associated with the images and the ongoing medicalization process expressed in the definition, promotion and communication of age-related decline in testosterone within the broader medicalization of male sexuality and male ageing.

The methodology involved three stages. First, we identified which websites we would analyse. Next, we gathered the data from these websites, and then these images were submitted to content analysis to identify the core themes related to the research goal, relating them to the medicalization of male sexuality and male ageing within the broader context of the promotion and communication of diagnostic categories and terminologies linked to age-related decline in testosterone.

We started the analysis by identifying the websites of drug companies that sell medicines for male sexual health. We split the search for male sexual health into the two most commonly cited "health problems" in the medical field and their respective treatments:

- erectile dysfunction: phosphodiesterase-5 (PDE-5) inhibitors like Viagra® (sildenafil);
- age-related decline in testosterone (andropause, male climacteric, male menopause, late onset hypogonadism, ADAM, PADAM, TDS): testosterone-based medicines administered in different forms, like Nebido® (an intramuscular injection of testosterone).

We felt it was important to research the websites of companies that sell pharmaceutical remedies for erectile dysfunction, because this male sexuality-related "health problem" is one of the most frequently mentioned symptoms of age-related decline in testosterone in the medical and scientific discourse nowadays.

In order to find websites with the characteristics described above, we referred to websites we had consulted in an analysis done in July-October 2011, and we searched the internet using the Brazilian Google search engine (<http://www.google.com.br>) from September to October 2011, using the following search terms:

- Inibidores da fosfodiesterase 5/phosphodiesterase-5 inhibitors
- Testosterona injetável/ injectable testosterone
- Testosterona comprimido/testosterone pill

- Testosterona gel/testosterone gel
- Testosterona implante/testosterone pellet
- Testosterona adesivo/testosterone patch

Having obtained the names of innovator drugs from this search^e, we used Google to find out the names of the companies that produced them.

We found 14 pharmaceutical companies websites in English, Portuguese and Spanish. Using the English language were the websites of: Aulium, Protrakam, Watson Pharmaceuticals and Endo Pharmaceuticals. The Beta S.A. Laboratories had a website in Spanish. The nine websites we found in Portuguese belonged to: Eli Lilly, Bayer Shering Pharma, Grupo EMS, Pfizer, Cristália, Medley, Eurofarma, Abbott and Perre Fabre Laboratórios. To analyse the websites of medical and scientific associations, we referred to the associations already identified in prior studies²⁵. Google served as a complementary search tool for finding the websites of these associations. We conducted this search between July and September 2011.

The following associations' websites were researched:

- Brazilian Society of Urology (Sociedade Brasileira de Urologia, SBU)
- Brazilian Society of Endocrinology and Metabology (Sociedade Brasileira de Endocrinologia e Metabologia, SBEM)
- Brazilian Association for the Study of Sexual Inadequacy (Associação Brasileira para o Estudo de Inadequação Sexual, ABEIS)
- International Society for Sexual Medicine (ISSM)
- Latin American Society of Sexual Medicine (Sociedade Latinoamericana de Medicina Sexual, SLAMS)
- World Association for Sexual Medicine (WAS)
- Brazilian Society of Studies in Human Sexuality (Sociedade Brasileira de Estudos em Sexualidade Humana, SBRASH)

We collected data by searching for material relating to the subject in question in the following sections of the drug companies' and medical associations' websites:

- male health
- men's health
- sexual health
- male sexual health
- urology / urological health

^e Innovator drugs are novel products that are registered with the health regulatory agency in the country in question. Their effectiveness, safety and quality are proven scientifically by the entity in question upon registration. Available at <http://www.anvisa.gov.br> [accessed 26 October 2011].

- endocrinology
- andrology

Results and discussion

Two of the 14 drug companies' websites^f contained images related to the subject in question (age-related decline in testosterone): Bayer Shering Pharma and Auxilium. Among the four images found in the Bayer Shering Pharma website we discarded one due to its small size. The same happened to the only image found in the Auxilium website. Therefore, among the five images found in the pharmaceutical companies websites, three were chosen to be analysed, all of them from the Bayer Shering Pharma website.

Also, two of the seven scientific/medical associations' websites had images related to the subject in question: Brazilian Society of Urology (SBU) and International Society for Sexual Medicine (ISSM). In the SBU website we found four images. We chose one for analysis because of its significance for our discussion. Furthermore it was much bigger than the other three, which were exceedingly small. The ISSM website had only one image related to our theme, but we decided to discard it due to its small size. So, among the five images found in the scientific/medical associations, we separated only one for analysis, from the SBU website.

When we analysed the images, we found some common features among them:

- all the people depicted were white (the men mostly had grey hair while the women had light brown hair);
- all the couples depicted were male/female;
- all the people depicted seemed to be upper middle class →wearing modest, stylish, quality clothing (suggesting a certain respectability);
- most of the people depicted were in their 50s and 60s (just two pictures showed younger couples, around 35-45 years old);
- the pictures portrayed "health", "beauty" and "happiness" →all the people were physically fit (slim and toned), most were smiling (with impeccable teeth), had good skin (only one of the men had any facial hair, but it was very thin), and were sometimes tanned. All the men had a full head of hair.

França²⁶ studies consumption from a cultural perspective, discussing the relationship between consumption and "identity building" in the market targeting homosexual consumers. She holds that identity building within the context of the LGBT (lesbian, gay, bisexual and transgender) movement in São Paulo is linked to the expansion of a specific market for these consumers, which has grown alongside the identity affirmation supported by social movements.

^fSites in other foreign languages than English were not analysed.

The author's work is based on the "anthropology of consumption", one of whose main points is: [...] to show to what extent objects constitute building blocks for the construction of social identity, something that takes place at all times and in all societies. They demarcate boundaries, tastes, classes, age groups, lifestyles²⁷. (p. 7)

Objects will take on different values and meanings depending on what socio-cultural context they are in. This is a view that banishes the idea of identities as being "essential" or "stable".

Drawing a parallel with França's²⁶ work, we can see that the images identified on the websites seem to follow something of a pattern, and would appear to speak to quite a specific audience: upper-middle-class, white, heterosexual men and women aged 50 to 60.

The ideas and conceptions about health and disease that underlie the consumption of the health services and goods promoted in such images seem to delimit the class, age group, sexual orientation and skin colour they are geared towards. This would appear to be an integral part of the process of building a segmented market that includes and excludes people based on social, racial and behavioural differences. It serves to delimit a consumer group defined by the values that certain health-related habits and concepts take on in this group.

Nonetheless, this is not a one-way street: the messages conveyed are also designed on some level to meet the desires, ideas, perceptions and "needs" inhabiting the collective imaginary of this group, while also helping configure and reformulate this imaginary. One way or another, the images seem to sell three commodities on different levels: a deficiency or disorder linked either to male sexuality or ageing; a medicine capable of "treating" this deficiency or disorder; a way of being happy and healthy (superimposed via the notion of "wellbeing") that involves a certain bodily and aesthetic constitution, and also a certain purchasing power (expressed in the clothing, haircuts and skin colour depicted).

The act of "selling" this class/body/aesthetic ideal is intimately linked to the act of selling the putative disorder and its remedy. In other words, a man who sees this advert will be induced to associate having such a "disorder" with being distanced from an ideal. And the opposite is also true: recovering from such a "disorder" by taking the suggested medication will mean drawing closer to this ideal (i.e. also being slim, having toned muscles, a good haircut, perfect teeth, white skin – but just tanned enough, being smart and sensibly dressed, and having an attractive women in one's arms).

Although the images are presented in a context that addresses men's health issues, including age-related decline in testosterone, they often also depict a female figure. This suggests they are promoting an idea of "companionship" between man and women with regard to health-related issues. It could also reflect the idea that a man on his own will not take care of his health, but will need the support and encouragement of a women to do so, and by getting treatment and taking care of his health he will be "satisfying" his partner.

Arguably, Figure 1, which shows a couple jogging on the beach, with the woman ahead of the man, is a perfect illustration of this idea.



Figure 1

In the text beside the photo, there is an emphasis on the couple's relationship, with the word "relationship" appearing twice. "Quality of life" is another term used, which, when associated with the image of two people jogging on the beach, conjures up ideas of health and wellbeing. It is also interesting how the words "function" and "dysfunction" are used here to make an oblique reference to erectile dysfunction (when we click on the image we are taken to a text on this subject), which in the field of medicine is taken as one of the main symptoms of age-related decline in testosterone.

Penn²⁸ argues that the meaning of a visual image can be made explicit by the textual message that accompanies it, in that the text helps to extract and name de meanings contained in the images. In the image shown below, for instance, the words and expressions in the textual message enhance the possibilities of interpretation of the image.

As for the women who appear in the pictures, all the issues addressed on these pages of the websites (male health, men's health, male sexual health, etc.), like age-related decline in testosterone, erectile dysfunction, prostate problems and premature ejaculation, touch on the sphere of sex, and therefore involve a female sexual partner, since the target audience in this case is heterosexual. In other words, the subliminal message is that being a man means being straight.

The people in the pictures are always smiling, which seems to be designed to imply that the suggested medical treatment can "giving back" happiness and wellbeing not just to men, but also to their female partners. Figure 2 is a case in point, showing two moments in a man's life – before and after medical treatment. Before he gets medical help, he is downcast and alone; afterwards, he looks happy with his female companion.



Figure 2

Happiness – both men’s and couples’ – and outdoor activities could be presented in the photos with the idea of encouraging men to aspire to a “better quality of life” so that they can be “happier” and “more joyful”, and of getting them to seek out the proposed means to obtain such goals, including HRT for age-related decline in testosterone.

In Figure 3, for instance, we see a mature man depicted out of doors with a contented expression on his face, apparently in the middle of some kind of physical activity. The text draws the viewer’s attention to the hormone issue with a question: “‘Male Menopause’ Does it exist?”.



Figure 3

Goffman²⁹ sheds light on how men and women are portrayed in advertisements where their social relationships are represented. He presents the idea of a “ritual”, referring to behaviours, actions or gestures attributed to both men and women that can be seen in such adverts.

Such “ritualized” behaviour is meant to represent what is taken as acceptable for each gender in the social context. These “rituals of interaction” are codified forms of behaviour, where the conduct itself does not have any inherent meaning, but is imbued with meaning by the codes of the culture in which it is displayed²⁹.

The author uses the notion of “gender displays”, which serve as ritual markers that designate belonging to gender groups and are tacitly “taught” and “assumed”, exerting the role of “social controllers of performance”²⁹.

In advertising images, the actions and behaviours expressed are “hyper-ritualized”, meaning they are rehearsed, produced and repeated until they encapsulate the advertising goal as closely as possible²⁹. As Penn²⁸ argues (p.325) “[...] the signs in publicity are intentional and, for this reason, are clearly defined, or ‘understood’. We also know that the intention is to promote the notoriety and the sales of the product.”

Men and women are both portrayed in an idealized, stereotypical way. Also, the practices, ideals and concepts that exist with regard to the differences between men and women expressed in the social context are often reinforced, maintained or reformulated through advertising.

The images analysed display some of the dimensions discussed by Goffman²⁹ with regard to how men and women are presented in advertising:

- relative size →men tend to be taller or appear higher than women;
- feminine touch →women are often portrayed touching objects (delicately tracing their outlines or surfaces) or themselves more often than men.

Interestingly, in the pictures that show two moments in a man’s life commented on above, the woman’s hand is shown touching the man’s hand. In this picture the man is also touching the woman’s face, but there is a clear difference between the two types of touch. The man seems to be holding his companion’s face, suggesting he is taking the initiative to draw her closer. In other words, a man’s touch seems to be depicted as part of action, while the woman’s touch seems to be more reactive.

- Ritualization of subordination →tendency for women to be portrayed in subordinate poses in relation to men (e.g. lying or sitting down while men are standing up). This dimension also covers the way women can be made to appear childlike in such representations (childish gestures and positions) in relation to men. Figure 4 could be considered an illustration of this trend.



Figure 4

In this picture, the woman has one of her feet in the air, a pose often adopted by children that conveys relaxed pleasure. The woman is also smiling, while the man, although he is shown in profile, seems only to reveal the shadow of a smile, which might suggest he is more serious than his companion.

- Function ranking → tendency for women to appear in supporting roles in a cooperative activity. If we turn back to the picture that shows the couple jogging on the beach (Figure 1), it would seem to buck the trend here. Rather than appearing in a supporting role, the woman is taking the lead, taking “command” of their physical activity. Alternatively, the man could be interpreted as pursuing the woman, expressing his desire to have her by running after her.

Concluding Remarks

In this study we have drawn attention to the existence of the co-promotion of diseases and medicines, meaning that at the same time that a disease is promoted and communicated in the scientific/medical community and amongst laypersons, a pharmacological treatment is promoted to “resolve” this medical issue.

Terms like happiness, wellbeing and quality of life are increasingly being attached to messages designed to “sell” a given disease and/or treatment. It is therefore not just a matter of disease mongering, but also of “health mongering”.

“Health mongering” can be understood as coming from the idea of making health a life plan³⁰, with people being increasingly “duty-bound” to be always hale and hearty and to take every precaution to prevent any ailment³¹. Allied with the idea of health as a life plan is the conception that one way to “achieve” it is to consume health technologies, including medicines.

In the pictures we analysed, not only is there a clear depiction of health and happiness (smiling faces, open air, physical activity), but there is also a tacit message that men have a responsibility to seek help not only to “cure” them of their health problems, but also to recapture this lost happiness.

This responsibility men are supposed to have can be extended at least in part to their partners’ happiness and wellbeing: if a man is negligent towards his health, this will erode not only his own health and wellbeing, but also that of his partner. The presence of heterosexual couples and texts

highlighting the word “relationship” is a clear marker of this idea.

We can see, then, that health mongering is related to disease mongering insofar as the broadened conception of health risks and problems has started to drive a growing demand for preventative methods and treatments through the consumption of health technologies.

In the specific case of age-related decline in testosterone, something else is worth stressing. Rohden³² has discussed the role of hormones in the contemporary world, which, she argues, are directly linked to the definition of individual behaviours and characteristics, mainly in the sphere of sexual differentiation and sexuality. Hormones are also increasingly being seen as important in people’s wellbeing and quality of life.

Testosterone, for instance, is portrayed as “the hormone of men” in both medical and lay discourses, even though it is also produced by the female body. Presented as an effective treatment for the “disease” (the “health problem”) that is age-related decline in testosterone in the form of hormone replacement therapy, it is linked to various aspects of manhood and gender relations.

This is evident in the images analysed, which transmit the message that men should be strong, virile and manly, with an associated subtext that they should aim to “satisfy their partner”, and by making her happy will thereby attain happiness. The image sold is that men are straight, and if they are unable to satisfy their female partners, they will be unhappy and ill, and this will make the women in their lives unhappy, too. In order to address this undesirable state of affairs, HRT is the obvious solution to treat cases of age-related decline in testosterone.

We would add here another point raised by Loe³³, who has found that certain medicines have been turned into “lifestyle drugs”, taken with the aim of “managing” behaviours and also for enhancement purposes. We believe that testosterone is increasingly being used as a lifestyle drug, in that it is represented as a means of obtaining a better quality of life and performance not just in relation to sex, the main focus of the websites researched, but also in other areas, including professional, mental and emotional spheres.

Men are under fire from all sides with the requirement to have bodies that not only work, but work optimally; they should not just be healthy, but must always be “on the lookout” to prevent future health issues; they must be happy, productive, youthful, sexually active and in good physical shape, using the available technologies to attain these goals.

Consumer relations, technological progress and the speed at which information is spread are issues that should be taken into account in any analysis of the medicalization of the times we are living in. Health-related ideas and conceptions linked to the consumption of technologies are constructed and fostered in a context of multiple concomitant historical and socio-economic factors.

This context is characterized by the constant negotiation of interests between different stakeholders (industry, health professionals, media, laypersons, etc.). Studies that take these issues into

consideration are important because they can contribute towards a better understanding of how these conceptions of health are influencing professional practices, and to propose ways to ensure the more rational use of the technologies available.

Collaborators

Cristiane da Costa Thiago has participated in the discussion, writing and manuscript review. Jane Araujo Russo has participated in the discussion and review and Kenneth Rochel Camargo Júnior in the manuscript discussion.

References

1. Conrad P. The medicalization of society: on the transformation of human conditions into treatable disorders. Baltimore: John Hopkins Press; 2007.
2. Bonaccorsi AC. Andropausa: insuficiência androgênica parcial do homem idoso: uma revisão. Arq Bras Endocrinol Metab. 2001; 45(2):123-33.
3. Vargas EP. Saúde, razão prática e dimensão simbólica dos usos da internet: notas etnográficas sobre os sentidos da reprodução. Saúde Soc. 2010; 19(1):135-46.
4. Rohden F. "O homem é mesmo a sua testosterona": promoção da andropausa e representações sobre sexualidade e envelhecimento no cenário brasileiro. Horiz Antropol. 2011; 17(35):161-96.
5. Morales A, Schulman CC, Tostain J, Wu FCW. Testosterone deficiency syndrome (TDS) needs to be named appropriately – the importance of accurate terminology. Eur Urol. 2006; 50(3):407-9.
6. Marshall B. Climateric redux?: (re)medicalizing the male menopause. Men Masc. 2007; 9(4):509-29.
7. Marshall B. Science, medicine and virility surveillance: "sexy seniors" in the pharmaceutical imagination. Sociol Health Illn. 2010; 32(2):211-24.
8. Fernández AB, Acosta LE. Documento básico de consenso sobre el síndrome de hipogonadismo de inicio tardío. Endocrinol Nutr. 2008; 55(1):5-28.
9. Watkins ES. Medicine, masculinity, and the disappearance of male menopause in the 1950s. Soc Hist Med. 2008; 21(2):329-44.
10. Marshall B, Katz S. Forever functional: sexual fitness and the ageing male body. Body Soc. 2002; 8(43):43-70.
11. Molle ACM. Fatores psicofisiológicos na terapia de reposição hormonal em homens. Cienc Cogn. 2004; 3(1):4-9.
12. Hepworth M, Featherstone M. The male menopause: lay accounts and the cultural reconstruction of

- midlife. In: Nettleton S, Watson J, editors. *The body in everyday life*. London: Routledge; 1999. p. 275-300.
13. Morley JE, Perry HM. Androgen deficiency in aging men. *Med Clin North Am*. 1999; 83(5):1279-89.
 14. Faro L, Chazan LK, Rohden F, Russo J. Homem com h: a saúde do homem nos discursos de marketing da indústria farmacêutica. In: *Anais do 9º Congresso Fazendo Gênero: diásporas, diversidades, deslocamentos*; 2010; Florianópolis, Brasil. Florianópolis: Universidade Federal de Santa Catarina; 2010. p. 1-5.
 15. Giami A. Da impotência à disfunção erétil: destinos da medicalização da sexualidade. *Physis*. 2009; 19(3):637-58.
 16. Angell M. *A verdade sobre os laboratórios farmacêuticos*. 5a ed. Rio de Janeiro: Record; 2010.
 17. Angell M. A epidemia da doença mental [Internet]. *Rev Piauí*. 2011 [acesso 2011 Nov 15]; (59):1-14. Disponível em: <http://revistapiaui.estadao.com.br/edicao-59>.
 18. Healy D. The new medical oikumene. In: Petryna A, Lakoff A, Kleinman A, editors. *Global pharmaceuticals: ethics, markets, practices*. Durham: Duke University Press; 2006. p. 61-84.
 19. Fishman JR. Manufacturing desire: the commodification of female sexual dysfunction. *Soc Stud Sci*. 2004; 34(2):187-218.
 20. Oldani M. Tales from the "script": an insider/outsider view of pharmaceutical sales practices. *Pap Kroeber Anthropol Soc*. 2002; 92(87):147-76.
 21. Oldani M. Thick prescriptions: towards an interpretation of pharmaceutical sales. *Med Anthropol Q*. 2004; 18(3):325-56.
 22. Applbaum K. Pharmaceutical marketing and the invention of the medical consumer. *Plos Med*. 2006; 3(4):445-7.
 23. Mintzes B. Disease mongering in drug promotion: do governments have a regulatory role? *Plos Med*. 2006; 3(4):461-5.
 24. Barros JAC. *Políticas farmacêuticas: a serviço dos interesses da saúde?* Brasília: Unesco; 2004.
 25. Russo JA, Rodhen F, Torres I, Faro L, Nucci MF, Giami A. *Sexualidade, ciência e profissão no Brasil*. Rio de Janeiro: CEPESC; 2011.
 26. França IL. *Cercas e pontes: o movimento GLBT e o mercado GLS na cidade de São Paulo [dissertação]*. São Paulo (SP): Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo; 2006.
 27. Oliven GO, Pinheiro-Machado R. Apresentação. *Horiz Antropol*. 2007; 13(28):7-13.
 28. Penn G. Análise semiótica de imagens paradas. In: Bauer MW, Gaskell G, organizadores. *Pesquisa*

qualitativa com texto, imagem e som: um manual prático. Petrópolis: Vozes; 2003. p. 319-42.

29. Goffman E. Gender advertisements. Cambridge: Harvard U.P.; 1979.
30. Rosenfeld D, Faircloth CA. Introduction medicalized masculinities: the missing link? In: Rosenfeld D, Faircloth CA, editors. Medicalized masculinities. Philadelphia: Temple University Press; 2006. p. 1-20.
31. Clarke AE, Mano L, Fishman JR, Shim JK, Fosket JR. Biomedicalization: technoscientific transformations of health, illness and U.S. biomedicine. *Am Sociol Rev.* 2003; 68(2):161-94.
32. Rohden F. O império dos hormônios e a construção da diferença entre os sexos. *Hist Cienc Saúde-Manguinhos.* 2008; 15 Supl:133-52.
33. Loe M. Fixing broken masculinity: viagra as a technology for the production of gender and sexuality. *Sex Cult.* 2001; 5(3):97-125.

Translated by Rebecca Atkinson