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MEDICALIZATION: SCALES AND STRATEGIES OF THE PHARMACEUTICAL SECTOR

MEDICALIZACIÓN: ESCALAS Y ESTRATEGIAS DEL SECTOR FARMACÊUTICO

MEDICALIZAÇÃO: ESCALAS E ESTRATÉGIAS DO SETOR FARMACÊUTICO

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Abstract

Researchers from several fields of knowledge have dedicated themselves to the investigation of the origins, materializations, and outcomes of the "medicalization" phenomenon. Aiming to help this debate, it was conducted a broad survey and analysis of the numbers that surround the theme, especially regarding the growth of production, marketing, and consumption of medicines on a global and national scale (Brazil). The results point out that the global pharmaceutical market had revenues of $1.25 trillion. The twenty largest companies in the sector have an aggregate market value of US$ 2.87 trillion. In Brazil, there are 454 pharmaceutical industries and 116,100 pharmacies. The production of medications reaches 162 billion doses in the country and the twenty-six largest national pharmaceutical companies have combined revenues of R$ 38.7 billion. There is also an increase in the marketing investment in the sector, which has reached R$ 10.8 billion. Two pharmaceutical companies lead the ranking of the largest advertising investors in Brazil.

Keywords: Pharmaceutical sector; Medication; Production; Marketing; Prescriptions.

Resumen

Investigadores de diferentes áreas del conocimiento se han dedicado a la investigación de los orígenes, materializaciones y consecuencias del fenómeno de la "medicalización". Para ayudar a este debate, llevamos a cabo una amplia encuesta y análisis de los números que rodean el tema – especialmente en lo que respecta al crecimiento de la producción, comercialización y consumo de medicamentos a escala mundial y nacional (Brasil). Los resultados muestran que el mercado farmacéutico mundial tuvo ingresos de US$ 1,25 billones. Las veinte empresas más grandes del sector tienen un valor de mercado agregado de US$ 2,87 billones. En el territorio brasileño, hay 454 industrias farmacêuticas y 116,1 mil farmacias. La producción de medicamentos alcanza 162 mil millones de dosis en el país y las veintiséis mayores empresas farmacéuticas nacionales obtuvieron ingresos combinados de R$ 38,7 mil millones. La inversión en marketing en el sector también creció alcanzando R$ 10,8 mil millones. Dos empresas farmacéuticas lideran el ranking de los mayores inversores publicitarios de Brasil.

Palabras clave: Sector Farmacéutico; Medicamentos; Producción; Marketing; Ingresos.

Resumo

Pesquisadores de diversas áreas do conhecimento têm se dedicado à investigação das origens, materializações e decorrências do fenômeno da "medicalização". Buscando auxiliar este debate, realizamos amplo levantamento e análise dos números que cercam a temática – sobretudo no que diz respeito ao crescimento da produção, marketing e consumo de medicamentos em escala global e nacional (Brasil). Os resultados apontam que o mercado farmacêutico mundial obteve receitas na casa de US$ 1,25 trilhão. As vinte maiores companhias do setor possuem um valor de mercado agregado de US$ 2,87 trilhões. No território brasileiro, são 454 indústrias farmacêuticas e 116,1 mil farmácias. A produção de medicamentos atinge 162 bilhões de doses no país e as vinte e seis maiores empresas farmacêuticas nacionais obtiveram receitas conjuntas de R$ 38,7 bilhões. Avolumam-se também o investimento em marketing do setor, que atinge R$ 10,8 bilhões. Duas farmacêuticas lideram o ranking dos maiores investidores publicitários do Brasil.

Palavras-chave: Setor Farmacêutico; Medicamentos; Produção; Marketing; Receitas.

Introduction

In 1928, Alexander Fleming, a British military doctor on the battlefronts of World War I, discovered penicillin, the first antibiotic. Such a breakthrough earned him the Nobel Prize in Medicine (1945), with the development of scientific revolutions, anchored in the development of contemporary chemistry in conjunction with the advances in medical studies and pharmacology, science has become increasingly successful and has a prominent place in the treatment of a wide range of diseases. The primitive production of pharmaceuticals, generic drugs, of natural or handcrafted origin, with unknown chemical structures and able to cure several diseases, has been replaced by extensive technification, industrialization, and diversification of a multitude of new compounds and drugs throughout the twentieth century. As deadly epidemics, such as the Black Death, Malaria, or Smallpox, became controlled with simple prophylactic measures, administration of common medicines, and mass vaccination, individuals and society were able to significantly extend their life span.

However, if, on one hand, the possibility of treating a wide range of diseases grows, and collective well-being is enhanced, on the other hand, it is seen a society ruled by the "medicalization of life", fruit of the expressive growth and diversification of the pharmaceutical sector with jurisprudence towards multiple fields of daily life. Now, the industrial scale, technical-normative logics and expressive sums of financial capital for research, production and marketing guide this new moment in which the comprehensive manufacture and consumption of medicines seems increasingly recurrent and banalized.

The result of this movement is the solidification of the belief that the great abundance of drugs available nowadays is indispensable for daily life or that for every disease, no matter how small, there is an available drug for it (DANTAS, 2009). Faced with scientific and state legitimation, which make these available for free marketing, reflections about the need, efficacy (infallibility) or even the side effects that such products can trigger are left aside.

As a consequence, an increasing number of substances, such as stimulants (fortifiers, vitamins, supplements), stabilizers (anxiolytics and antidepressants), pain killers, licit recreational drugs (alcohol and cigarettes), and even illicit drugs (amphetamines, marijuana, cocaine) are increasingly linked to the daily life of society (STACCIARINI *et al.*, 2020).

Individuals have become real "drug" devourers. People ingest drugs to study, work, sleep, have fun, correct mood swings, stimulate feelings, exercise, lose weight, and many other purposes. Not by chance, it has become common to see people carrying their stockpiles of medicines in their purses, cars, and backpacks, or even having a small "private pharmacy" at home.

Amidst this progressive growth in the production and consumption of medicines, there has been the rise of studies involving the "concept of medicalization". Far from having a consensus, researchers from various scientific fields have pointed out and analyzed, from different points of view, the origins,

materializations, and consequences of this process (FOUCAULT, 1989; CONRAD, 1992; AGUIAR, 2004; CAPONI, 2009; DANTAS, 2009; WILLIAMS *et al.*, 2011; CAMARGO JUNIOR, 2013; LEMOS, 2014; GALINDO *et al*., 2017; AZEVEDO, 2018).

For the American sociologist Peter Conrad, one of the main references in the critical study of the theme throughout the world, medicalization is a neutral social phenomenon, that is, not necessarily good or bad. However, the use of such term in social studies is usually associated with "overmedicalization", a criticism of the process (CONRAD, 2007). The "medicalization" expands intensely towards natural processes of life, such as sexuality, childbirth, child development (attention and hyperactivity), aging, death, menstrual discomfort (PMT), menopause, sleep, or even problems strongly linked to cultural or social issues, such as "madness", alcoholism, compulsive gambling, erectile dysfunction, obesity, anorexia, among many others (CONRAD,1992; CONRAD; SCHNEIDER, 1992; CONRAD, 2007).

If, on the one hand, more and more disorders and behaviors that until then were not very significant are now being diagnosed, on the other hand, in the midst of the abundant supply of new products and services related to the medical field, and people play the role as consumers in the "supermarket of life". Healing, well-being, power, and vitality would be at our fingertips (and our purchasing power).

The fact is that this expansion of the "medicalization culture" guides the strong growth of the pharmaceutical sector in the world and in Brazil, confusing itself, sometimes as a cause, sometimes consequently. The numbers are impressive and have directed our investigation in the present work.

That said, this article has been divided into three topics. In the first - "The Pharmaceutical Sector on a Global Scale", we have presented figures that reveal trillion-dollar transactions and companies with a market value superior to most national economies.

Following that, in the section "The Pharmaceutical Sector in Brazil", we have indicated that the high rates of drug consumption, along with the high number of pharmaceutical industries, distribution companies, and commercialization establishments (pharmacies and drugstores), reveal that the Brazilian territory mirrors the global conjuncture of medicalization growth, and that this movement is further amplified by the intrinsic characteristics of our country.

Finally, in the third topic, "Marketing and Medicalization", we have exposed the "importance" of advertising for the Brazilian pharmaceutical market. Billions of dollars invested in the promotion of medical substances, which are disseminated through multiple marketing strategies, highlight a worrisome scenario for the national public health.

Methodological Procedures

In order to promote the debate over "MEDICALIZATION: scales and strategies of the pharmaceutical sector", we have undertaken a broad verification, collection, organization and analysis of data, both quantitative and qualitative, from economic reports, consulting firms specialized in the pharmaceutical industry, advertising agencies, and governmental entities, among others.

The numbers that dimension the "size and complexity" of the pharmaceutical sector on an international scale were taken from reports of the German consulting company "Statista", which is specialized in market and consumer information, and from the report "World's Largest Public Companies", organized by the American business and economics magazine "Forbes". By consulting the data repository of the "World Bank", it was possible to relate economic information about pharmaceutical companies, such as market value and profit, to indicators of national economies, like the Gross Domestic Product (GDP).

On a national scale (Brazil), we have used information collected in the "Conselho Federal de Farmácia (CFF)" (Regional Pharmacy Council), to locate the number of pharmaceutical industries, drug distribution companies (wholesalers), importers, and retail establishments in the sector (pharmacies and drugstores). Then, we resorted to the "Pharmaceutical Research Industry Association (Interfarma)" to map and measure the indexes that evidence the growth of the national production of medicines.

The market value and volume of net revenues of the largest Brazilian pharmaceutical companies and of the twelve largest retail and distribution companies of national medicines, were obtained in the "Ranking 1500", a publication that tabulates information such as revenues and assets of the largest companies in the country and is organized by the newspaper called "O Estado de S. Paulo" (Estadão) in partnership with Austin consulting and the Foundation Institute of Administration (FIA).

Lastly, we have consulted the surveys conducted by "Meio & Mensagem (M&M)" and by the multinational Kantar-Ibope - companies specialized in marketing and media analysis, to obtain the amount spent on television advertising by the pharmaceutical sector in the country.

Seeking to assist the display, illustration and understanding of the mapped information, we used the tables and graphs tool of the Microsoft Excel software and the graphic design resources of the *CorelDRAW* software.

The Pharmaceutical Sector on a Global Scale

From being a luxury item a century ago, medications are becoming progressively more popular (in quantity, value, and acceptance) and their use is increasingly being linked to the daily life of people. Once applied in circumstantial cases, such as to treat an infection or to cure a severe illness, pharmaceutical drugs are now incorporated as an unquestionable necessity, without which it is not possible to "survive until the end of the week.

The "modern pharmacology" has taken pharmaceutical drugs production to a completely new level. Now it is governed on an industrial scale. Technical-standard logics and expressive sums of financial capital for research, production, and marketing have become pillars of an increasingly complex and comprehensive sector (MELO *et al*., 2006), owner of large revenues and constant growth (Figure 1).

In the collected data from the Statista reports, which is a German company specialized in market and consumer information, it was observed that the revenue of the pharmaceutical sector has multiplied 3.2 times in less than two decades. It went from US$ 390 billion in 2001 to reach US$ 1.25 trillion in 2019.

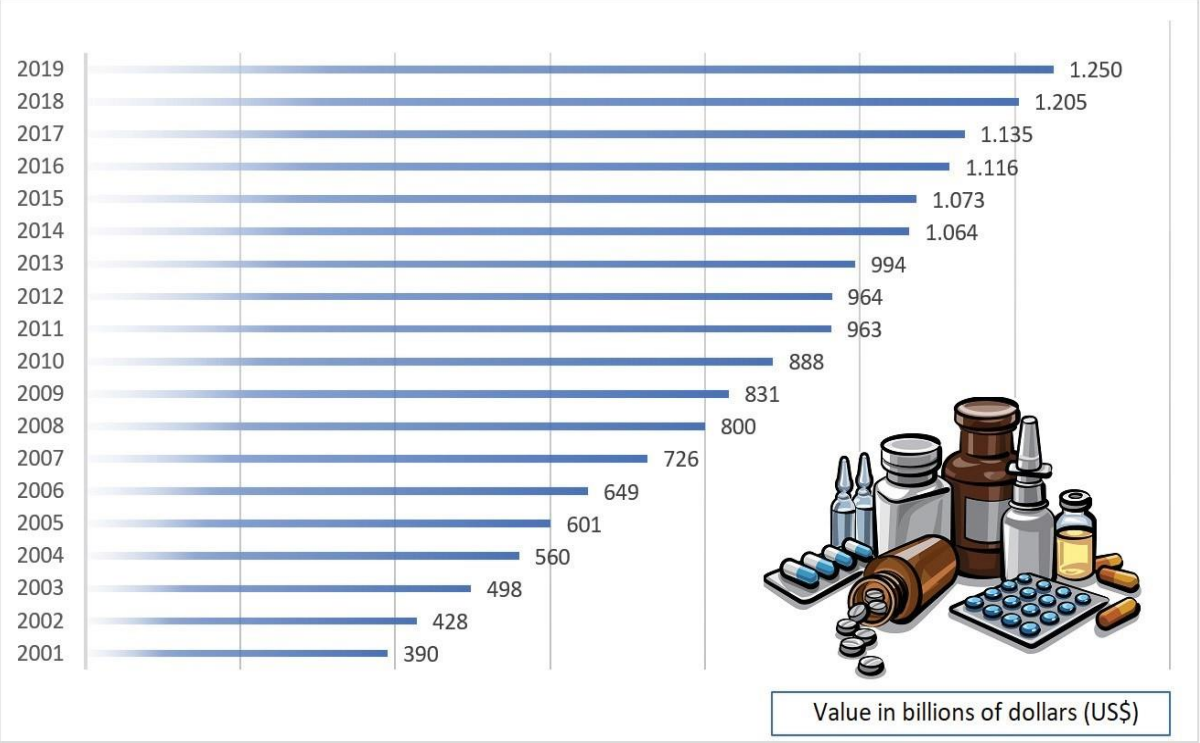

Figure 1: Revenue from the world pharmaceutical market (2001 - 2019). Source: Statista (2020). Collection, organization and data systematization: the authors.

The numbers make the pharmaceutical sector, one of the largest in the global economy. Comparatively, from the 207 nations evaluated by the World Bank in this same year (2019), only fifteen had a Gross Domestic Product (GDP), sum of all final goods and services produced by a country during the year, higher than the 1.25 trillion dollars moved by the pharmaceutical market on a planetary scale (WB, 2020).

Although many companies like to claim that the nature of the activity involves high risks due to the need for large financial sums to conduct research leading to new drug discoveries, investigations have indicated that this is one of the most lucrative economic sectors of contemporaneity (ANGELL, 2004; WILLIAMS *et al.,* 2011). In addition, they have shown that pharmaceutical conglomerates does no always use very "honorable" strategies to expand even further, their markets and profits (WAZANA, 2000; MOYNIHAN *et al.,* 2002).

Contrary to this speech of "trials," the data gathered by us through the report "World's Largest Public Companies", organized by the US business and economics magazine, "Forbes", has revealed that the twenty largest publicly traded pharmaceutical companies in the world earned $697.3 billion in revenues and $94 billion in net income during the year 2020.

Name	Country (headquarters)	Values in billions of dollars (US$)		
		Market value	Revenues	Net profit
Johnson & Johnson	United States	427,1	82,6	14,7
Roche Holding	Switzerland	287,1	62,1	15,2
Pfizer	United States	215,2	47,6	9,6
Novartis	Switzerland	198,6	48,6	8,1
Merck & Co	United States	196,0	47,8	7,1
AbbVie	United States	190,4	45,8	4,6
Eli Lilly	United States	181,4	24,5	6,2
Novo Nordisk	Denmark	167,3	19,4	6,4
Bristol Myers	United States	146,2	42,5	-9,0
Amgen	United States	147,2	25,2	7,3
AstraZeneca	United Kingdom	133,9	27,7	3,2
Sanofi	France	127,4	41,1	14,0
GlaxoSmithKline	United Kingdom	92,9	43,7	7,4
Gilead Sciences	United States	84,0	24,6	0,1
Bayer	Germany	63,6	47,2	-12,0
Regeneron	United States	53,8	8,5	3,5
Takeda	Japan	53,3	30,0	1,7
Biogen	United States	40,7	10,6	4,0
Alexion	United States	36,2	6,1	0,6
Astellas Pharma	Japan	28,1	11,7	1,3
Total	-	2.870,4	697,3	94,0

Chart 1: Market value, Revenues and Net profit of the top twenty pharmaceutical companies (2020). Source: Forbes (2021). Collection, organization and data systematization: the authors.

The investigation shows the size and complexity of this industry and its main players, the pharmaceutical industries. On a global scale, the industry is oligopolized, a small number of corporations hold substantial market share and exercise a certain amount of dominance. New acquisitions and mergers take place every year, making the big players even more capitalized and powerful.

As a reflection of contemporary capitalism, many of these companies are part of large conglomerates, groups of enterprises belonging to the same controlling center ("owner") and operating in various segments of the economy. Thus, even though all the institutions listed (in Chart 1) have as their core business, and are classified as pharmaceuticals, many also operate in similar areas. This is the case of the North American Johnson & Johnson, founded in 1886 with the purpose of producing pharmaceuticals and that today controls more than 200 subsidiaries and presents itself, through the manufacture of medicines, medical devices, and personal hygiene products, among many others, as "the largest and most extensive health care company in the world" (J&J, 2022).

Even though economists dislike the comparison between the share prices and the flow of national economies of companies, the expressiveness of the indexes points to emblematic scenarios, allowing us to dimension the greatness (and power) of the agents and of the pharmaceutical sector. The fact is that these twenty companies, when added together, have a market value of US$ 2.87 trillion. When comparing this amount with the global ranking of Gross Domestic Product (GDP), they would be surpassed only by the four largest world economies: the United States, China, Japan, and Germany. (WB, 2020).

Moreover, the aggregate market value ($1.8 trillion) of the eight largest corporations shown (in Chart 1), exceeds the combined sum ($1.7 trillion) of all final goods and services produced (GDPs) by all forty-eight countries that make up Sub-Saharan Africa (WB, 2020), nations located south of the Sahara Desert.

Thinking of an individual investigation, Johnson & Johnson, the leader of the list with a price reaching US$ 427.1 billion, boasts a market value higher than the GDP of 187 nations. The Swiss Roche Holding (US$ 287.1 billion) would be ahead of economies such as Finland and Portugal, while Pfizer, the third largest pharmaceutical company on the planet, has a market value (US$ 215.2 billion) higher than the Gross Domestic Product of New Zealand and other 164 national economies evaluated in the "List of Countries by GDP"; organized annually by the World Bank (WB, 2020).

The Pharmaceutical Sector in Brazil

The Brazilian territory reflects the global conjuncture of the growth of medicalization. The consumption of pharmacological substances grows at high rates and companies are equally powerful and active. Many of them are derived from the conglomerates, which were already presented, although local factors, such as the 6th largest population and 12th largest economy in the world (WB, 2020), together with the historical "tradition" of drug consumption in the country, have offered "fertile ground" for the consolidation of large national ventures.

According to the Federal Pharmacy Council (CFF), Brazil has currently 454 active pharmaceutical industries (CFF, 2020). In this survey, based on data made available by the Pharmaceutical Research Industry Association (Interfarma), it was revealed that in an interval of only five years, the production of medications in the country has increased by 60.4%, jumping from 101 billion doses manufactured in 2012 to 162 billion in 2017.

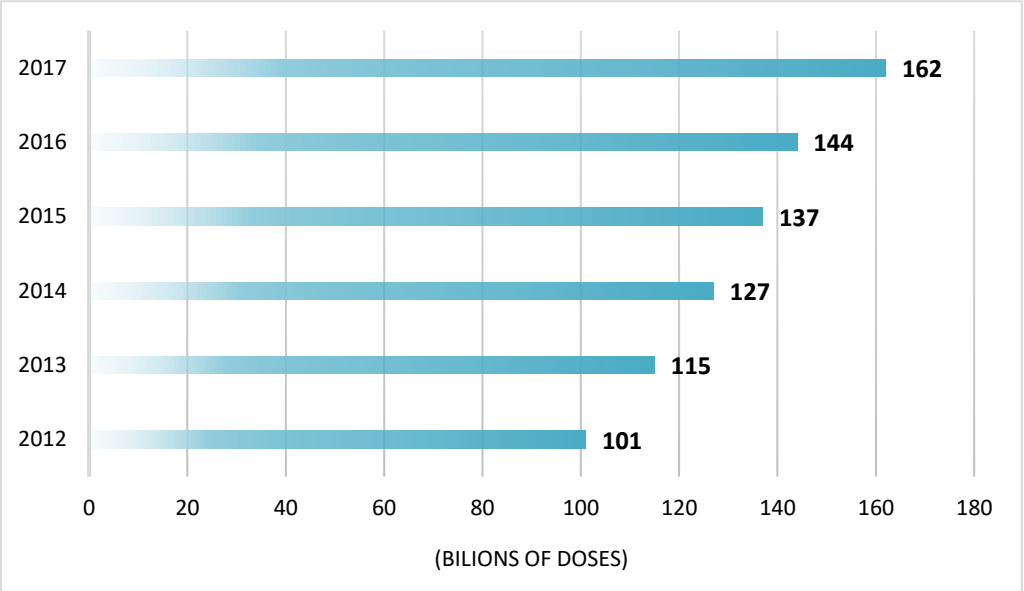

Figure 2: Growth of pharmaceutical drug production in Brazil (2012 - 2017). Source: Interfarma (2022). Collection, organization and data systematization: the authors.

This expansion in the production and consumption of medications has been accompanied by voluminous profits for their manufacturers, the pharmaceutical companies. From the "Ranking 1500" - a publication that tabulates information such as revenue and assets of the largest companies in the country and is organized by the newspaper "O Estado de S. Paulo" (Estadão) in partnership with Austin consulting and the Foundation Institute of Administration (FIA), it was observed that the twenty-six largest pharmaceutical companies in the country had aggregate net profits of around R$ 38.7 billion during the year 2021 (Chart 2).

The study also provides the earnings of some international pharmaceutical companies that have branches based in Brazil. This is the case of the Swiss Roche and Novartis, the Anglo-Swedish Astra-Zeneca, the American Bristol Myers, and the Danish Novo Nordisk. Altogether, these five companies have earned R$ 10.5 billion in revenues in Brazil during 2021. The other companies and global conglomerates initially presented in chart 1 do not appear on the list for not having headquarters in the country or for not reporting their revenues on a national scale. However, like the multinationals mentioned above, it is our understanding that they also obtain high sums from the Brazilian market.

Name of the company	Net Revenue (R$ Millions)
Sanofi Medley	4.498
Hypera Pharma	4.200
Eurofarma	4.057
EMS Sigma Pharma	3.951
Ache	3.593
Cristália	2.533
União Química	2.055
Libbs	1.852
Neo Química	1.621
Elfa Medicamentos	1.350
Blau	1.157
Laboratório Teuto	1.048
Outras (somadas)*	6.882
Total	38.797



Chart 2: Net revenue of the largest national pharmaceutical companies (2021) Source: Ranking (2021). Data collection, organization and systematization: the authors. * In "Others" it was summed the net revenues of the other fourteen Brazilian pharmaceutical companies that appear in the study.

Besides the companies that produce, there are also those that commercialize medicaments in the country. It was collected the data at the Federal Pharmacy Council, and it points out that Brazil has about 90 thousand private retail establishments, such as pharmacies and drugstores, in operation. There are also 8.5 thousand compounding and homeopathy pharmacies, 6.8 thousand hospitals, and 10.8 thousand public ones (CFF, 2020). Together, the number of pharmacies reaches 116.1 thousand, making it one for every 1.8 thousand inhabitants, on average (IBGE, 2020). Added to the Brazilian drug trade network are also 4.6 thousand companies that distribute medicines (wholesale) and 74 importers (CFF, 2020).

The numbers place us, both in absolute and proportional terms, among the countries with the highest number of establishments in this category on the planet. Not by chance, it has become common to observe avenues with several pharmacies nearby in most Brazilian cities. In particular cases, intersections "give life" to four competing establishments, while in others, the same pharmaceutical chain opens a unit on each side of the street, seeking to facilitate consumption amidst the chaotic traffic rush (and daily life).

From these observations and the analysis of collected data, it was noted that there is also a gigantic, complex, and profitable market for distribution and sale (final, to the consumer) of medicines in the country. Systematizing the numbers, it was observed that only the set of the twelve largest national companies of distribution and commercialization of pharmaceuticals (Chart 3) obtained R$53.9 billion in net revenues during 2021.

Name of the company	Area of Operation	Net revenue (R$ Millions)
Raia/Drogasil	Retail	19.068
Pague Menos	Retail	6.858
Drogaria São Paulo	Retail	6.567
Profarma	Distribution	5.242
Drogarias Pacheco	Retail	3.371
Panvel Farmácias	Retail	2.810
Drogaria Araújo	Retail	2.239
Clamed Farmácias	Retail	2.212
Imifarma	Distribution	2.004
Drogarias Nissei	Retail	1.612
Profarma Specialty	Distribution	1.199
Solfarma	Distribution	807
Total	–	53.989



Chart 3: Net revenues of the twelve largest retail and distribution companies in Brazil (2021) Source: Ranking (2021). Data collection, organization and systematization: the authors.

Confronting the information found in charts 2 and 3, it can be noticed that some companies that are engaged in the distribution and sale of medicines boast even higher revenues than the producers of pharmaceuticals themselves. This is the case of the pharmacy chain "RaiaDrogasil", a pharmaceutical retailer that is present in all states of the country and has more than 2.5 thousand stores in the national territory (RD, 2022).

In 2021, the year of the last survey, RaiaDrogasil was ranked 23rd in the national ranking of the companies with the highest net revenue (RANKING, 2021). Its earnings were around R$ 19 billion, reaching numbers better than the sum of the four largest national pharmaceutical companies, Sanofi Medley, Hypera Pharma, Eurofarma, and EMS Sigma Pharma, which together have reached R$ 16.7 billion.

Marketing e Medicalization

Making pharmaceutical products attractive, or even indispensable to our daily life is revealed as the great "mission" of contemporary pharmaceutical marketing. However, the nature of this activity in the pharmaceutical sector is crossed by a great paradox, once the medication is not considered a "consumer good" like any other. That is, it involves the traditional need for competitiveness and maintenance of corporate profits on one side, in contradiction with the ideals of health and collective welfare on the other.

Accused of anticipating medical care, the pharmaceutical companies defend themselves by claiming that advertising campaigns are necessary for the improvement of public health. They would be alerting the population of daily neglected ("underdiagnosed") dysfunctions and pathologies, or even assisting in the disclosure of new pharmacochemical discoveries. Thus, at an early stage, the receiver of such advertising, previously considered ignorant of his condition or of a certain scientific finding, could now make use of the advertised medication, establishing himself as cured as soon as he acquiredthe product.

Pharmaceutical conglomerates have long been criticized for overspending on advertising. Research around the world shows that about 25 to 35% of the industry's revenues are (re)committed to advertising their products (ANGELL, 2004; FERREIRA, 2008). A hard-hitting critical study published by Marc-André Gagnon and Joel Lexchin has pointed out that in the United States about twice as much is invested in "disclosure and marketing" as in "research and development" of new drugs and improvements (GAGNON and LEXCHIN, 2008), fostering strong indications of an excessive preoccupation with the sale and (re)production of profits.

In Brazil, the possibility of linking "pharmacological advertising" to the consumer (and the physician) is one of the important strategies to sell more (FAGUNDES *et al*., 2007; SOARES, 2008; VAZ; ARAÚJO *et al*., 2012; PORTUGAL, 2012). In a world in constant acceleration, in which the time available is increasingly smaller in relation to the demands of daily life, cutting the need to go to a hospital and the role of the physician as an "intermediary", that is, an evaluator of the need or not of a certain drug. Doing this directly to the customer, via advertising, represents a great gain (of time and money) for the pharmaceutical market.

Not by chance, the investments in the marketing of pharmaceutical substances are getting bigger and bigger in the country. In the survey, which was elaborated by consulting the latest surveys conducted by Kantar-Ibope (a company specializing in media analysis and an arm of the multinational WPP Group), the largest advertising company in the world, indicated that in just seven years, there has been a 176.9% increase in the total amount spent on advertising (KANTAR, 2018).

The figures, with a jump from R$3.9 billion (2012), to R$10.8 billion in 2018 (figure 3), allow the pharmaceutical sector to move from 12th to 5th place in the ranking of sectors that invest the most in television marketing in Brazil.

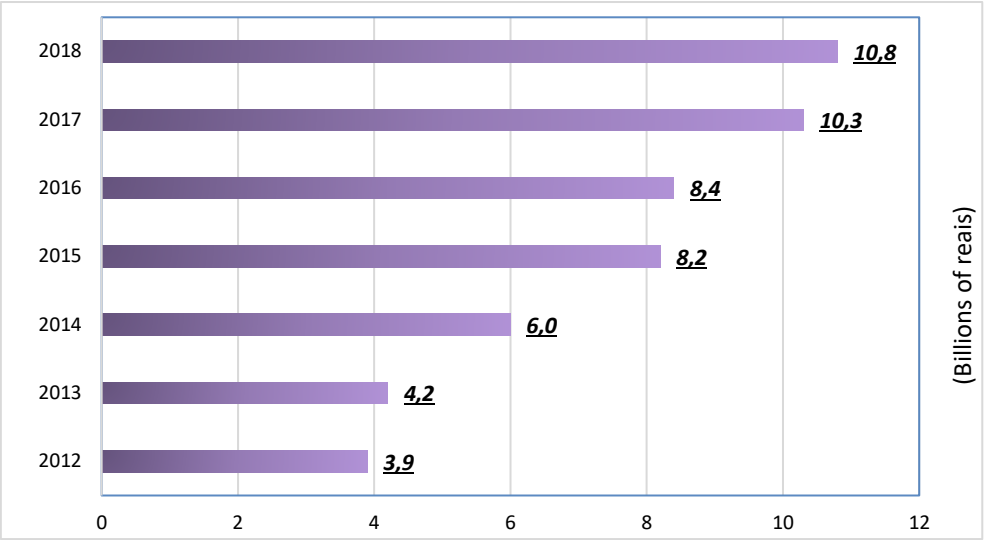

Figure 3: Growth of the amount spent on television marketing by the pharmaceutical sector in Brazil (2012 - 2018. Source: (KANTAR, 2018). Data collection, organization and systematization: the authors.

Besides this collective investment, from the pharmaceutical industry as a whole, some companies have stood out individually for their advertising spend. Chart 4, which was organized by us using data made available by the Meio & Mensagem platform, a specialist in marketing and communication market content in Brazil, reveals that four companies in the sector are present in the ranking of the ten largest advertisers in the country.

It is noticeable that pharmaceutical companies have surpassed investments even from very traditional Brazilian retail companies (beer, soft drinks, and household appliances companies), financial institutions with national presence, and also telephone companies that are present in thousands of cities in the country. It is evident, therefore, that the sector of production and trade of medicines makes advertising its greatest ally in the search for growth in sales and revenues.

Rank	Company	R$ (Millions)
1ª	Genomma Lab	1.110
2ª	Hypera Pharma	970
3ª	Unilever	506
4ª	Ultrafarma	457
5ª	Via Varejo	452
6ª	Ambev	446
7ª	Divcom Pharma	437
8ª	Claro	418
9ª	Vivo	398
10ª	Caixa	378

Caption
Companies in the pharmaceutical sector



Chart 4: Four companies from the pharmaceutical sector are present in the ranking of companies that invest the most in television marketing in Brazil (2018) Source: (M&M, 2022). Data collection, organization and systematization: the authors.

Note that the "Genomma Lab" (a pharmaceutical laboratory of Mexican origin), leads the list with an execution of more than R$ 1.1 billion in advertising. Holder of a large line of "Over the Counter (OTCs)" which are pharmaceutical drugs marketed without the need for a prescription, "over the counter", direct-to-consumer advertising becomes a great strategy for sales expansion.

Occupying second place in the ranking, the Brazilian pharmaceutical company called Hypera Pharma, a conglomerate that comprises a set of laboratories, brands, and ventures in the industry, is another example of the power and of the importance of advertising for companies in the sector. Leader in the market of non-prescription drugs in the country (HYPERA, 2022) and with an eye on the visibility provided by the most popular sport in Brazil (soccer), Hypera signed (in September 2020) the purchase of the "naming rights" of the "Arena Corinthians". From then on, the stadium has been called "Neo Química Arena", the name of one of the laboratories owned by the conglomerate. The agreement was sealed with an investment of R$ 300 million, which are been paid over twenty years, the period in which the naming rights are in effect.



Figure 4: After multi-million dollar sponsorship, pharmaceutical conglomerate is now naming a stadium and is to be advertised on the Sport Club Corinthians uniform. Source: Neo Química Arena (NQA, 2022).

Eight months later, in May 2021, Neo Química also announced the insertion of its name in the uniform of the club (figure 4). Through a contract signed until 2025, the company will disburse R$ 20 million annually to occupy the central space of the jersey (HYPERA, 2022). With the two agreements, sectors of the stadiums, previously designated with the North, South, East, and West cardinal points, are named after pharmaceutical drugs and products, being these Doril, Benegrip, Buscopan, Neosaldina, Epocler, and Engov, which are medicaments produced by the company. Home of the second most popular team in the country, the Neo Química Arena becomes a real "medicalizing billboard".

The example, in conjunction with the data, systematization and analysis presented in this article, have led us to a critical reflection on the process of "medicalization", as it has been occurring in Brazil and in the world. For us, it does not seem natural (or acceptable) that pharmaceutical companies commit such significant amounts of money, even leading the national ranking of advertising investment, to advertise their drugs as if they were any kind of merchandise. Moreover, the growth rates of consumption of these substances, together with the voluminous revenues and market values of the companies that are involved in this process, seem to expose a business model that is more concerned with the (re)production of profits than with the social and ethical role it should historically play, that is, to alleviate human suffering and contribute to the common good.

Final Considerations

Through a broad survey, based on government data, economic reports, specialized consulting firms in market and consumer information, advertising agencies, pharmaceutical conglomerates, large drugstore chains, among others, it was sought to measure, in an updated way, the size and complexity

of the universe that involves the production, marketing, and consumption of medicines on a global and national scale (Brazil).

Beyond theoretical-conceptual reflections presented initially, it has been shown that the revenue of the global pharmaceutical market has multiplied 3.2 times in less than two decades, from 390 billion dollars in 2001, to reach 1.25 trillion dollars in 2019, figures that make this one of the largest sectors of the global economy.

It has also been revealed that the twenty largest publicly traded pharmaceutical companies in the world together earned $697.3 billion in revenues and $94 billion in net income during 2020. This same set has $2.87 trillion in market value, exceeding the Gross Domestic Product (GDP), the sum of all final goods and services produced by a country during the year, of the vast majority of nations on the planet. In individual analysis, the market value of a single pharmaceutical conglomerate, such as the Americans Johnson & Johnson (US$ 427.1 billion) and Pfizer (US$ 215.2 billion) or the Swiss Roche Holding (US$ 287.1 billion), exceeds the Gross Domestic Product of more than a hundred countries.

In the national territory, it has been proposed that the global conjuncture of medicalization growth is reproduced and amplified by local factors, such as the 6th largest population and 12th largest economy in the world, which, together with the historical "tradition" of medicine consumption, offer "fertile ground" for the consolidation of large national companies in the pharmaceutical sector.

Altogether, there are in Brazil 454 pharmaceutical industries, 4.6 thousand medicine distribution companies (wholesale), and 74 importers. The medications reach the consumer through 116.1 thousand pharmacies (public and private), which represents one establishment for every 1.8 thousand inhabitants and puts us among the countries that have the most establishments in this category (both in absolute and proportional terms) on the planet.

The production of medications has also expanded significantly in Brazil. It rocketed 60.4% in a five-year interval (2012 / 2017), reaching 162 billion doses. This pace of expansion allows the twenty-six largest pharmaceutical companies in the country to have aggregate net profits of around R$38.7 billion (2021).

Pharmacies and medication distributors, which make an indispensable link between the production and consumption of these drugs, have also shown themselves to be a lucrative market. With net revenues of around R$ 53.9 billion (during the year 2021), the group of the twelve largest national companies in the distribution and commercialization of medicines has boasted revenues even higher than the producers of drugs themselves on a national scale.

Lastly, it was presented the growth of pharmaceutical marketing in Brazil, which is an important tool for expanding and reproducing the industry's profits. Altogether, it was invested the amount of R$10.8 billion only in the year of 2018. Such figure represents 176.9 % more than the amount applied in 2012 and has allowed the pharmaceutical sector to jump from the 12th to the 5th place in the list of those

who invest the most in television advertising in Brazil. Emblematically, two pharmaceutical companies lead the individual ranking of largest advertising investors. With values close to 1 billion reais, they surpass even very traditional Brazilian retail companies, financial institutions with national presence, and telephone companies that are present in thousands of municipalities in the country.

Far from being exhaustive with this discussion, we hope to contribute to future works and help researchers who, like us, seek to understand (a little more) the complex and dynamic "medicalization phenomenon".

References

AGUIAR, Adriano Amaral de. ***A psiquiatria no divã:*** *entre as ciências da vida e a medicalização da existência. Rio de Janeiro*: Relume Dumará, 2004.

ANGELL, Marcia. Excess in the pharmaceutical industry. **Canadian Medical Association Jour-nal**, [S.L.], v. 171, n. 12, p. 1451-1453, 7 dec. 2004. CMA Joule Inc.. http://dx.doi.org/10.1503/cmaj.1041594.

ARAÚJO, Carolina Pires *et al*. *Marcos legais da propaganda de medicamentos: avanços e retrocessos.* ***Physis****: Revista de Saúde Coletiva,* [S.L.], v. 22, n. 1, p. 331-346, 2012. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s0103-73312012000100018.

AZEVEDO, Luciana Jaramillo Caruso de. *Considerações sobre a medicalização: uma perspectiva cultural contemporânea.* ***Ces Psicología****,* [S.L.], v. 11, n. 2, p. 1-12, 2018. Universidad CES. http://dx.doi.org/10.21615/cesp.11.2.1.

CAMARGO JUNIOR, Kenneth Rochel de. *Medicalização, farmacologização e imperialismo sanitário.* ***Cadernos de Saúde Pública****,* [S.L.], v. 29, n. 5, p. 844-846, may 2013. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s0102-311x2013000500002.

CAPONI, Sandra. *Biopolítica e medicalização dos anormais.* ***Physis****: Revista de Saúde Coletiva, [S.L.],* v. 18, n. 2, p. 529-549, 2009. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s0103-73312009000200016.

CFF. *Conselho Federal de Farmácia. Farmácias e drogarias registradas no Brasil.* 2020. Available: https://www.cff.org.br/pagina.php?id=801&titulo=Boletins. Accessed on jul. 2022.

CONRAD, Peter. Medicalization and Social Control. **Annual Review Of Sociology**, [S.L.], v. 18, n. 1, p. 209-232, aug. 1992. Annual Reviews. http://dx.doi.org/10.1146/annurev.so.18.080192.001233.

CONRAD, Peter. **The medicalization of society:** on the transformation of human conditions into treatable disorders. Baltimore: Johns Hopkins University Press, 2007.

CONRAD, Peter; SCHNEIDER, Joseph W. **Deviance and medicalization**: from badness to sickness. Filadélfia (Eua): Temple University Press, 1992. 327 p.

DANTAS, Jurema Barros. *Tecnificação da vida: uma discussão sobre o discurso da medicalização da sociedade.* ***Fractal****: Revista de Psicologia*, [S.L.], v. 21, n. 3, p. 563-580, dec. 2009. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s1984-02922009000300011.

FAGUNDES, Maria José Delgado *et al*. *Análise bioética da propaganda e publicidade de medicamentos.* ***Ciência & Saúde Coletiva***, [S.L.], v. 12, n. 1, p. 221-229, may. 2007. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s1413-81232007000100025.

FERREIRA, Luís dos Santos. *Saúde, medicamentos, marketing e médicos.* ***Revista Portuguesa de Clínica Geral****,* [S.L.], v. 24, n. 5, p. 605-616, 1 sep. 2008. *Associacao Portuguesa de Medicina Geral e Familiar.* http://dx.doi.org/10.32385/rpmgf.v24i5.10551.

FOUCAULT, Michel. ***Microfísica do poder***. 8. ed. Rio de Janeiro: Graal, 1989.

FORBES. The List: 2021 - Global 2000. World's Largest Public Companies. 2021. Available: https://www.forbes.com/lists/global2000/. Accessed on feb. 2022.

GAGNON, Marc-André; LEXCHIN, Joel. The Cost of Pushing Pills: a new estimate of pharmaceutical promotion expenditures in the united states. **Plos Medicine**, [S.L.], v. 5, n. 1, p. 1, 3 jan. 2008. Public Library of Science (PLoS). http://dx.doi.org/10.1371/journal.pmed.0050001.

GALINDO, *Dolores Cristina Gomes et al. Medicalização e governo da vida e subjetividades: o mercado da saúde.* ***Estudos e Pesquisas em Psicologia***, [S.L.], v. 16, n. 2, p. 346-365, 30 jun. 2017. Universidade de Estado do Rio de Janeiro. http://dx.doi.org/10.12957/epp.2016.29164.

HYPERA. *Farmacêutica brasileira Hypera Pharma.* 2022. Available: https://www.hypera.com.br/a-hypera-pharma. Accessed on may. 2022.

IBGE. Instituto Brasileiro de Geografia e Estatística (IBGE). *Projeção da população do Brasil*. 2020. Available: https://www.ibge.gov.br/apps/populacao/projecao/ . Accessed on may. 2022.

INTERFARMA. *Associação da Indústria Farmacêutica de Pesquisa.* 2022. Available: https://www.interfarma.org.br/. Accessed on may. 2022.

J&J. Johnson & Johnson Pharmaceutical (J&J). 2022. Available: https://www.jnj.com/. Accessed on jun. 2022.

KANTAR. *Retrospectiva & Perspectivas 2018. Relatório de Investimento Publicitário. Kantar Ibope Media.* 2018. Available: https://www.kantaribopemedia.com/estudos-type/retrospectiva-e-perspectivas-2018/. Accessed on may. 2022.

LEMOS, Flávia Cristina Silveira. *A medicalização da educação e da resistência no presente: disciplina, biopolítica e segurança.* ***Psicologia Escolar e Educacional****,* [S.L.], v. 18, n. 3, p. 485-492, dec. 2014. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/2175-3539/2014/0183772.

MELO, Daniela Oliveira de *et al*. *A importância e a história dos estudos de utilização de medicamentos. Revista Brasileira de Ciências Farmacêuticas,* [S.L.], v. 42, n. 4, p. 475-485, dec. 2006. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s1516-93322006000400002.

M&M. Meio & Mensagem. *Plataforma de conteúdo do mercado de marketing e comunicação no Brasil*. 2022. Available: https://www.meioemensagem.com.br/. Accessed on jul. 2022.

MOYNIHAN, Ray *et al*. Selling sickness: the pharmaceutical industry and disease mongering. **Bmj**, [S.L.], v. 324, n. 7342, p. 886-891, 13 apr. 2002. http://dx.doi.org/10.1136/bmj.324.7342.886.

NQA. *Neo Química Arena. Estádio mandante do Sport Club Corinthians Paulista*. 2022. Available: https://www.neoquimicaarena.com.br/. Accessed on may. 2022.

RANKING. *Ranking das 1500. Maiores empresas do País. Jornal Estadão, Consultoria Austin e Fundação Instituto de Administração (FIA).* 2021. Available: https://publicacoes.estadao.com.br/empresas-mais/ranking-1500/. Accessed on jul. 2022.

RD. RaiaDrogasil (RD). Empresa brasileira do setor varejista farmacêutico. 2022. Available: https://rd.com.br/sobre-a-rd/quem-somos/. Accessed on jun. 2022.

STACCIARINI, João Henrique Santana *et al*. *TRABALHO, MEDICALIZAÇÃO E PILHAGEM: o negócio da vida.* ***Pegada*** *- A Revista da Geografia do Trabalho*, [S.L.], v. 21, n. 1, p. 33-51, 15 may2020. Pegada Eletrônica. http://dx.doi.org/10.33026/peg.v21i1.6919.

STATISTA. Insights and facts - across 170 industries and 150 countries. Pharmaceutical Products & Market. Hamburg, Germany. 2020. Available: https://www.statista.com/markets/. Accessed on jun. 2022.

SOARES, Jussara Calmon Reis de Souza. *Quando o anúncio é bom, todo mundo compra: o projeto monitoração e a propaganda de medicamentos no brasil.* ***Ciência & Saúde Coletiva****,* [S.L.], v. 13, n. , p. 641-649, apr. 2008. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s1413-81232008000700013.

VAZ, Paulo; PORTUGAL, Daniel Bittencourt. *A nova "boa nova": marketing de medicamentos e jornalismo científico nas páginas da revista veja.* ***Comunicação, Mídia e Consumo****, São Paulo,* v. 26, n. 9, p. 37-60, nov. 2012. Available: http://revistacmc.espm.br/index.php/revistacmc/article/view/342. Accessed on jul. 2022.

WAZANA, Ashley. Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?. **Jama**, [S.L.], v. 283, n. 3, p. 373, 19 jan. 2000. American Medical Association (AMA). http://dx.doi.org/10.1001/jama.283.3.373.

WB. World Bank. Gross Domestic Product (GDP). 2020. Available: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2019&most_recent_value_desc=true&start=2018. Accessed on jun. 2022.

WILLIAMS, Simon *et al*. The pharmaceuticalisation of society? A framework for analysis. **Sociology Of Health & Illness**, [S.L.], v. 33, n. 5, p. 710-725, 4 mar. 2011. Wiley. http://dx.doi.org/10.1111/j.1467-9566.2011.01320.x.