Vaccination in Brazil: bioethical reflection on accessibility

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Abstract

Vaccines have a strong influence on public health because of their effectiveness and favorable cost-benefit ratio. However, with new vaccines unavailable in the public system, the access by society in general must be discussed. This study aimed to identify the meaning of vaccination for the population and physicians, and address the issue of access to vaccines outside the public health system, emphasizing social vulnerability. Physicians and members of society were interviewed, and the data was analyzed using an exploratory qualitative methodology and the collective subject speech. The Brazilian immunization system was seen by respondents as good in general, with the main criticisms directed at information and the lack of vaccines. As for accessibility, data suggests a correlation with economic factors, generating bioethical discussions about the social vulnerability of most of society that cannot afford vaccination.

Keywords: Bioethics. Vaccines. Social vulnerability.

Resumo

Vacinação no Brasil: reflexão bioética sobre acessibilidade

As vacinas têm grande influência na saúde pública por sua efetividade e relação custo-benefício favorável. Entretanto, com o surgimento de novos imunizantes indisponíveis na rede pública, torna-se necessário discutir o acesso da sociedade em geral. O objetivo deste trabalho foi identificar o significado da vacinação para profissionais e população, assim como abordar a questão do acesso à imunização fora da rede pública de saúde, enfatizando a vulnerabilidade social. Foram entrevistados médicos e cidadãos leigos, e os dados foram analisados a partir de metodologia qualitativa exploratória e do discurso do sujeito coletivo. O sistema vacinal brasileiro foi entendido pelos entrevistados como bom de maneira geral, sendo as principais críticas voltadas à falta de informações e insumos. Quanto ao acesso, os dados sugerem correlação com fatores econômicos, abrindo espaço para discussões bioéticas sobre a vulnerabilidade social da maior parte da população, que não tem condições de pagar por essas imunizações.

Palavras-chave: Bioética. Vacinas. Vulnerabilidade social.

Resumen

Vacunación en Brasil: una reflexión bioética sobre la accesibilidad

Las vacunas ejercen una gran influencia sobre la salud pública debido a su efectividad y a una relación costo-beneficio favorable. Sin embargo, con el surgimiento de nuevas vacunas indisponibles en la red pública, se hace necesario discutir el acceso de la sociedad a este servicio. El objetivo de este trabajo fue identificar el significado de la vacunación para la población y los médicos, y abordar la cuestión del acceso a la inmunización fuera de la red pública de salud, haciendo hincapié en la vulnerabilidad social. Con base en una metodología cualitativa exploratoria y en el discurso del sujeto colectivo, se entrevistó a médicos y a ciudadanos legos. El sistema brasileño de vacunas fue considerado por los entrevistados como bueno de manera general. Las principales críticas se refieren a la información y a la falta de insumos. Respecto al acceso, los datos sugieren que existe una correlación con factores económicos, lo que crea un espacio para discusiones bioéticas sobre la vulnerabilidad social de la mayor parte de la sociedad, que no tiene condiciones de pagar por estas inmunizaciones.

Palabras clave: Bioética. Vacunas. Vulnerabilidad social.

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Research

Vaccination is an old technique improved in 1796 by Edward Jenner, who inoculated humans with the cowpox virus, a disease that affect cattle and is transferrable to humans, to immunize people against smallpox, one of the most devastating diseases of the time [1]. Technological and scientific advancements enabled the production of more effective and comprehensive immunizers, thus today vaccines are essential for both children and adults. Incentive programs and mandatory vaccination have increased protection in Brazil and worldwide, reducing or eradicating the incidence of many vaccine-preventable diseases, such as poliomyelitis [2]. Currently, the National Immunization Program coordinates these actions and controls these diseases in Brazil [3].

Despite its importance and contributions, vaccination has assumed several facets throughout its history, involving hope, success and fear. Vaccines have geographical, moral, social, cultural and economic implications and can cause tensions between the individual and the collective – for example, anti-vaccine groups [4], which are against child vaccination based on the idea that healthy individuals would not need inoculation, as natural immunization would be sufficient and vaccines would cause side effects.

Lessa and Dórea [5], when mentioning the bioethical principles introduced by Beauchamp and Childress [6], point to a dilemma related to autonomy and beneficence, since, when part of society willingly refuses to get vaccinated, eradicated diseases may return and become a risk for the community. In other words, one of the limits of the exercise of autonomy is the non-maleficence towards the collective [5,6].

Regarding post-vaccination adverse effects, Brazil has no initiative to address them or provide proper care, so the legal system is the only solution [5]. Then, vaccines, which by nature value the collective good, force a few persons to assume the costs, either through physical and mental health or financial resources.

Showing positive results, vaccines attracted the attention of the pharmaceutical industry for being potentially profitable. New vaccines are being created and improved for new diseases, but in Brazil they are available only in the private system, limiting the access to only those with better purchasing power. With this new market, large vulnerable masses only observe this trend, often without understanding why these vaccines are not provided by the public health system. The population has many questions regarding issues like the mechanism of action of vaccines, fear of adverse effects, influence of vaccination campaigns disseminated by the media, and information on the internet that is often misleading [5,7]. Justice and equity, foundations of the Unified Health System (SUS), question such lack of access.

Method

This is a qualitative cross-sectional exploratory descriptive study conducted at Hospital das Clínicas Samuel Libânio (HCSL) and at Universidade do Vale do Sapucaí (Univás), in the city of Pouso Alegre, Minas Gerais, Brazil, between January 2018 and February 2019. Participated in the study 20 physicians of different specialties from the HCSL and 20 volunteers from the community, aged between 18 and 65 years and presenting gender parity. The selection criteria of specialists included physicians with more than five years after graduation, of any specialty, from the HCSL clinical staff or Univás medical course faculty.

In total, 20 men and 20 women were interviewed. The mean age of the group of citizens was 36.2 years (median of 36.5 years), and 50.4 years (median of 51.5 years) for the group of physicians, with mean time after graduation of 25.5 years (median of 27.5 years). This study used an instrument for sample characterization and a semi-structured interview script with two open questions about the Brazilian vaccination system and access to new vaccines. For the group of physicians, sample characterization considered data such as age, gender and time after graduation; and for the group of citizens, age, gender and individual income. The interview took place in a reserved place, and the answers to the two questions were recorded, transcribed, and then deleted to ensure interviewee confidentiality.

Data was analyzed separately for each of the two questions, using the collective subject speech (CSS), written in the first person singular pronoun. After the speeches were transcribed, key expressions were extracted from each response and the central ideas were defined, which generated the Speech Analysis Instrument 1. Then, the Speech Analysis Instrument 2 was developed by grouping each central idea with its respective key expressions. Finally, a CSS was assigned to

each central idea representing the participant's positioning, and its frequency was determined. The participant's autonomy was respected by the free decision to contribute to this study, after providing guidance for making conscious decisions.

Results

We present here the CSS of the interviews, with the central ideas according to each of the two themes. Regarding the Brazilian vaccination system, in the first question, when asked "If someone asked you what you think about the Brazilian vaccination system, what would you say?" the most frequent ideas were "good" and "good, but it has flaws" (Table 1).

Regarding the second theme, when asked "If someone asked you what you think about the population access to these new vaccines, what would you say?" the idea of "poor access" was predominant, with variations such as "access is not universal, it depends on the economic power" and "poor access and insufficient information about how vaccination works" (Table 2).

Table 1. Central ideas, key expressions and frequency regarding Theme 1: "If someone asked you what you think about the Brazilian vaccination system, what would you say?"

First central idea (n=13) "Good, efficient, but it has flaws"
Key expressions
"*Efficient, but poorly advertised. It should be better disseminated*" (Physician 2)
"*Well formulated, very comprehensive, but sometimes there is no vaccine*" (Physician 3)
"*Good, well formulated, but it is not applied. In theory, it regulates all necessary situations*" (Physician 4)
"*It offers some types of vaccine, but it is not well advertised as I would like it to be*" (Physician 8)
"*In some aspects, it is very well formulated, very organized, but it has some flaws due to the lack of cooperation from the population that avoids vaccines; it is poorly advertised and its importance is not well recognized"* (Physician 9)
"*It has flaws, because it does not cover all population*" (Physician 6)
"*Good, but with poor inspection. It would need more supervision, because when you request* [a vaccine] *to an elderly, young or adult patient, unlike children who have better control, you don't have that control, you can't find the card*" (Physician 10)
"*It offers basic coverage, but access is deficient. It is restricted and needs to be improved*" (Physician 11)
"*It is adequate, but the population must be aware and informed about its importance*" (Physician 15)
"*It has flaws, it is not well advertised to the population*" (Physician 16)
"*Very good and effective, but information for the population about this subject and its coverage not including everyone are still big problems*" (Physician 17)
"*There is a restriction in distribution based on the population's age group; but everyone should be vaccinated*" (Physician 18)
"*It has become more complete, but there is a gap when comparing vaccines that are available in public and private systems*" (Physician 19)
Second central idea (n=7) "Good, very good and efficient"
Key expressions
"*It works very well, it's one of the most successful public health programs in Brazil*" (Physician 1)
"*Excellent*" (Physician 5)
"*Accessible to low-income people, it has reduced child mortality and infectious-parasitic diseases in the country in recent years; it is cheap, easy and available in most public health centers*" (Physician 7)
"*Very good. It covers a large part of the diseases; it's a great solution*" (Physician 12)
"*Very good. It serves well the population that can't afford to buy mainly basic vaccines*" (Physician 13)
"*Good. It showed improvement in disease prevention coverage*" (Physician 14)
"*Very interesting, it has a better coverage when compared to the past*" (Physician 20)

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Table 1. Continuation

Third central idea (n=8) "Good"
Key expressions
"*I think it's good*" (Citizen 2)
"*About vaccines, the system is good, there's nothing to be improved*" (Citizen 3)
"*Very good, it is usually well explained"* (Citizen 4)
"*Vaccines are studied, they are good and prevent diseases and deaths*" (Citizen 5)
"*Good, vaccines prevent many diseases, but they change according to the age table*" (Citizen 6)
"*Very good, because I have small children, and all vaccines I needed I got from the State*" (Citizen 8)
"*Well advertised. The problem is a possible fear of people regarding side effects*" (Citizen 13)
"*Complete, with good coverage, it serves the population very well*" (Citizen 15)
Fourth central idea (n=2) "Good, but it has flaws"
Key expressions
"*Comprehensive and accessible, but the immunization for some diseases, like chickenpox, needs improvements*" (Citizen 14)
"*It has evolved, but there is no control over information about vaccines already taken or not by the population. It needs improvements*" (Citizen 16)
Fifth central idea (n=5) "Good, but has a shortage of vaccines
Key expressions
"The system is good, the vaccine itself is a good thing, but there is no vaccine for everyone, many people have to pay for it, not everyone can get it" (Citizen 1)
"*It's so-so, because vaccination is complete in some places, while in others some vaccines are in shortage, you have to go back another day, wait for new batches to arrive. It's not so simple, it's complicated*" (Citizen 7)
"*It has flaws, some places don't have vaccines. I also can't speak on this issue of splitting the vaccine to produce more. Sometimes, many people have access, but for those who don't, it's difficult to get it*" (Citizen 9)
"*The system is good, but it is not satisfactory because it should provide all vaccines children have the right to receive, including those available on the private system"* (Citizen 10)
"*It is good and has good intentions, but it is necessary to raise awareness and make vaccines available to a larger number of people*" (Citizen 11)
Sixth central idea (n=5) "Deficient"
Key expressions
"*It is deficient, with poor provision of information and not well advertised* (Citizen 12)
"*Restricted and deficient; information is missing. It is not widely disseminated to the population*" (Citizen 17)
"*Deficient dissemination and awareness; inefficient*" (Citizen 18)
"*Deficient. Brazilians still die from diseases that have been prevented for some time*" (Citizen 19)
"*Terrible*" (Citizen 20)

Table 2. Central ideas, key expressions and frequency regarding Theme 2: "If someone asked you what you think about the population access to these new vaccines, what would you say?"

First central idea (n=11) "Few people have access"
Key expressions
"*You have to pay, it is difficult, not everyone has this access*" (Citizen 4)
"*Vaccines are expensive, it is not possible to have access if it is not through SUS*" (Citizen 6)
"*If there's no vaccine in the public system, you can find it in the private system, but people don't have money*" (Citizen 7)
"*It's more difficult for those who can't afford it*" (Citizen 8)
"*Those who have economic power can buy it, but those who don't have it – most population – won't buy it*" (Citizen 19)
"*Not accessible due to the price, many people are not vaccinated because of that"* (Citizen 10)
"*Access is important for prevention, but the population has not taken some precautions. The more research in this area, the better our prevention*" (Citizen 11)
"*The access is difficult, information is missing*" (Citizen 12)
"*It needs to evolve more, there is still a wide range of vaccines available in the private system, which the government doesn't provide for people"* (Citizen 16)
"*It is restricted and with flaws. The access via private system is expensive*" (Citizen 17)
"*Few people have access*" (Citizen 20)
Second central idea (n=10) **"The access is not for everyone, it depends on the economic power"**
Key expressions
"*The access is not universal, people have to pay, and Brazil is a poor country; the population will never have access if they have to pay for the vaccine. And these vaccines are not cheap*" (Physician 1)
"*It is not for everyone, it is different for social classes with higher purchasing power. Vaccines are not cheap and seem to be a good deal, many clinics are emerging*" (Physician 3)
"*Those who have purchasing power will find it easy to buy it. It is difficult to reach patients who need it, especially underserved patients who live, for example, in a rural area*" (Physician 4)
"*Restricted, as it depends on the economic power*" (Physician 5)
"*It is a minority, a small percentage of the population has access*" (Physician 6)
"*The private system always works as a company and will sell the vaccine to people with higher purchasing power, this is an individual decision*" (Physician 9)
"*It is easier, but vaccines are expensive, then it depends on socioeconomic conditions*" (Physician 10)
"*It is still far from fulfilling the needs. The availability in most cases only in the private system generates a high cost for many people*" (Physician 11)
"*Few vaccines have been included in the Brazilian vaccination calendar and they are very important. So the access is impossible for the needy population; access is expected to be facilitated in the future. Besides, part of the population doesn't want to be vaccinated today, which is a disaster*" (Physician 12)
"*It has to be expanded. The access will be better when new vaccines are incorporated into SUS*" (Physician 19)
Third central idea (n=6) **"Poor access and lack of information about the purpose of vaccines"**
Key expressions
"*The access is restricted, there are more vaccines than people aware of them*" (Citizen 1)
"*No, of course there is no access, I think* (...) *I don't understand much about these vaccine things*" (Citizen 2)
"*It can improve, not only risk groups should be immunized*" (Citizen 14)
"*The public system offer is large, good, but not enough. The population shows no interest*" (Citizen 15)
"[The access is] *reduced due to the fact that vaccines are given only at health centers and the lack of adherence by the population, people are not aware*" (Citizen 18)
"*Difficult, but effective within its limitations*" (Citizen 19)

continues...

Table 2. Continuation

Fourth central idea (n=4) "There is no difference in the supply of vaccines when comparing the public and private sectors"
Key expressions
"*The private system advertises it way before the public system, and many people who sometimes would not have financial conditions to buy it end up buying because they think the public system would not be efficient. On the contrary, it would be as efficient, but it is not advertised*" (Physician 2)
"*I think both the private and public sectors are about the same in terms of supply of vaccines, I think there isn't a big difference"* (Physician 7)
"*Good, regarding epidemic diseases. But for diseases that are not reported, vaccines are available in the private system, and people should not get vaccines just because they exist*" (Physician 13)
"*Usually, vaccines that reach the private system have already been in the public system before. Sometimes there is a shortage in the public system, and the private system takes advantage of it*" (Physician 17)
Fifth central idea (n=3) "There is low population adherence"
Key expressions
"*We could have more adherence in the public health system, in fact*" (Physician 8)
"*Few vaccines have been included in the Brazilian vaccination calendar and they are very important. So the access is impossible for the needy population; access is expected to be facilitated in the future. Besides, part of the population doesn't want to be vaccinated today, which is a disaster*" (Physician 12)
"*Really bad. There is resistance from the population to vaccines worldwide; the vaccination program is inadequate*" (Physician 20)
Sixth central idea (n=3) "There is a good supply, but people need to be better informed"
Key expressions
"*There is a big access, but there is a lack of information about the need for vaccination and explanations about side effects*" (Physician 14)
"*Everyone has access in the public sector, but building awareness is necessary"* (Physician 15)
"*It has improved, but information is still missing about distribution, need and functionality*" (Physician 16)
Seventh central idea (n=2) "The supply is poor and needs improvement"
Key expressions
"*Poor. Vaccines are only available in the public system during times of outbreak. The new ones also need to be made available to all population"* (Physician 18)
"*Really bad. There is resistance from the population to vaccines worldwide; the vaccination program is inadequate*" (Physician 20)
Eighth central idea (n=2) "Vaccines will cause disadvantages"
Key expressions
"*Some have no interest, others think it's bad, that they can die"* (Citizen 3)
"*Some people don't trust; some say they get sick, others say that* [many people] *have already died"* (Citizen 5)
Ninth central idea (n=1) "Lack of knowledge about the subject"
Key expressions
"*I can't give an opinion, because I don't know anything about it*" (Citizen 13)

Research

Discussion

The first theme of this study addressed the opinions of volunteers about the Brazilian vaccination system. Results show that most interviewees believe the vaccination program to be good. This opinion includes the idea that it satisfactorily covers the population, is accessible, avoids diseases and deaths and provides explanations. On the other hand, the negative aspects mentioned were the lack of control over people's vaccination history, insufficient information and dissemination, uncertainties of the population regarding the vaccine application method – such as fractional doses –, fear of side effects, lack of vaccines in some places, the fact that certain vaccines are available only in the private system, and inefficient coverage in some cases. The issue of vaccination history was highlighted by Zorzetto [8] in *Pesquisa Fapesp* journal, issue 270, as one of the nine probable reasons for reduced reach of vaccination in Brazil.

Also regarding the first theme, when observing more frequent ideas among physicians, they were similar to the ideas presented by citizens. Most physicians considered the Brazilian vaccination system as good and efficient, well planned and regulated, and one of the most successful health programs in Brazil. In addition, it was highlighted as a solution to prevent diseases, having reduced child mortality and the incidence of infectious and parasitic diseases in recent years, with excellent cost and easy availability for most public health centers.

This information agrees with data found in the literature about the topic, since for more than two centuries vaccines have eradicated several epidemics and controlled vaccine-preventable diseases, such as poliomyelitis, diphtheria, and neonatal tetanus [9]. The importance of the vaccination for the low-income population was also emphasized, especially because it provides basic vaccines. However, it involves inefficient dissemination, lack of inspection, unequal supply of vaccines between the public and private systems, and finally, lack of popular cooperation due to insufficient dissemination of information.

Regarding the second theme of this study, when asked about access to immunizations, the idea that few people get new vaccines was prevalent among citizens, who claimed very high costs and lack of information about the vaccine. For Zorzetto [8], besides the issue of vaccination history, the lack of knowledge about the national vaccination calendar and the misleading perception that vaccination is no longer needed with the eradication of some diseases are among the probable reasons for reduced reach of vaccination in Brazil.

For the participants of this study, the public system needs to receive all new vaccines, so that more people are vaccinated. Half of all physicians interviewed said that economic power has a strong influence on the access to new vaccines, also mentioning the restriction for low-income population. However, other physicians identified no discrepancy between the supply of vaccines in the public and private systems.

Universality, equity and comprehensiveness are the pillars of public health in Brazil. Therefore, healthcare guarantee is based not only on the provision of services, but also on equal access to developed products. In addition, the development of a private market in this sector raises questions about the guarantee and quality of access to health. Despite the State power over the production and supply of vaccines, the impact of the private sector is undeniable in this area, being a bioethical issue to be discussed. This sector grows because it offers vaccines that are not found in the public system and supports technological advances. This inequality, combined with a restricted access of the population, further increases the social vulnerability of the population [7].

The results of this study agree with the idea that the private market grows by offering vaccines that are not found in the public system. For instance, citizens who purchased the influenza vaccine – the most frequent in the private network – were, on average, 32.4 years old, which, according to the Sociedade Brasileira de Imunizações [10], corresponds to the age group not covered by the government calendar. Despite the lower volume of vaccines in the private sector when compared to the State's inventory, the amount charged for these products maintains the viability of this market [7]. In our study, 60% of citizens did not take vaccines in the private system, and their income was up to 2.12 minimum wages per person. The income of the 40% who paid for vaccines was up to 6.53 minimum wages per person. The difference in income is noticeable, showing unequal access.

Final considerations

Based on data of this study, we concluded that the Brazilian vaccination program was seen

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by the studied population as good, with the main complaints regarding poor information about vaccines, retrieval of personal vaccine history, and the lack of vaccines in some places. Regarding the new vaccine market, it showed that economic factors restrict access to these products. These results agree with the literature and create opportunities for bioethical discussions on the situation of social vulnerability of most people in the country.

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Participation of authors

Elisa Coutinho Moura, Adriana Rodrigues dos Anjos Mendonça, and Camila Rezende dos Santos designed the project, analyzed the literature on the subject, and performed data collection and analysis. Elisa Coutinho Moura and Adriana Rodrigues dos Anjos Mendonça wrote the article and, with Dênia Amélia Novato Castelli von Atzingen, made the final revision.

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