

Social Causes of Vaccine Rejection-Vaccine Indecision Attitudes in the Context of Criticisms of Modernity

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ABSTRACT

As most of the diseases that ravaged human collectivities through millennia have been cured by scientific tools offered to the use of medicine particularly from the Industrial Revolution onwards, vaccination played a crucial role in it. Once conceived as a significant public function, vaccination has been one of the most salient signs of regulatory and social reformist state power. However, together with the rise of globalization and the general state of fluidity stemming from it, on the one hand, communication technology has diffused diverse information around the world, particularly the false ones, and on the other hand, a widespread critical climate against modern conceptions has been formed. In this context of complex reality, vaccination has lost its undoubted public function and meaning. Since 1990s in the world and 2000s in Turkey, we observe a significant, though proportionally still meagre, tendency of refusal or hesitation concerning vaccines, mostly among parents. We analyze this tendency as complex assemblage of causes, both in economic and philosophical dimensions, a multiplex phenomenon which should be understood essentially in a general framework of critique against modernity.

Keywords: Criticisms of modernity, fake health news, public health policies, vaccination refusal, vaccination hesitation

Introduction

Vaccination was invented in the 19th century, just like many other innovations in the field of medicine. In the pre-modern periods, doctors developed some kind of proto-vaccine by contaminating healthy people with a transfer from lesions or wounds of sick ones in a controlled manner. This was especially used for smallpox, and was observed in different societies over different periods [1]. The development of vaccines in a scientific sense was a product of the 19th century when the consequences of the Industrial Revolution were seen. Industrialization brought about production of scientific knowledge, which in turn enabled a technology-oriented economy of progress [2]. Scientific knowledge means a regime of empirical findings, based on comparison, distancing itself from all subjective values such as prejudices, dogmas, and emotional responses, and has *falsifiability* despite all its inherent consistency [3]. This meant that any kind of information filtered through scientific processes can also be easily refuted if it is proven otherwise. The progress motto of the industrial society has been fundamentally shaped around this techno-scientific approach and ideological axis. During the 19th century, when many scientific breakthroughs took place, numerous inventions and countless innovations were implemented, incomparable to older times, in terms of both quality and quantity.

Medicinal technology and knowledge took a central part in this progress. Surgeons and physicians who performed distinct specializations for centuries came together in this scientific process under the same approach to medicine. Scientific and technological developments offered the chance to become a medical discipline through revolutionary innovations to surgery in *localization* (focus on certain parts of the body), *anesthesia* and *asepsis* [4]. Thus, they transformed the profession of physicians from a cognitive activity to an applied field. In the same context, hospitals were transformed from a house of invalids into a medical institution [5]. For millennia, epidemics that rendered communities destitute and hopeless, caused mass casualties, even toppled states sometimes or brought about civil unrest, and most importantly, increased infant mortality rates,

started to be fought against only during the 19th century. Numerous diagnosis and treatment tools of modern medicine were invented during this period as well [6]. One of these revolutionary innovations was, of course, *vaccines*. Thanks to vaccination techniques and policies developed throughout the 20th century, it became possible to fight many contagious diseases that affected children adversely, primarily smallpox [7]. Mass application of vaccines became one of the most fundamental functions of the modern state apparatus. It became possible to wage a total war on diseases, to bring them under control, and even to eradicate some of them. By looking at it from this perspective, it can be claimed that vaccination played a central role in the establishment and maintenance of modern states because the modern state is a rationalized apparatus that protects its citizens, and while doing that, controls them through its bio-policies [8].

It would not be wrong to consider vaccines as one of the symbols and trademarks of the modern state. However, since the 1990s around the world and since the 2000s in Turkey, we observe a hesitation, resistance, or altogether rejection of vaccines from parents. Especially in 2015, after an injunction for parental approval, cases of hesitation or rejection increased significantly [9]. As in all phenomena, undoubtedly there is more than one reason for vaccine rejection. However, it is vital to assess these sociologically in order to diagnose problems correctly. Accordingly, this matter has local, cultural, and technical reasons as much as a connection with a deeper social transformation. As of the 1980s, criticism of modernity gained momentum; therefore, subjective values occupied a wider social sphere of action, and cultural relativism became more dominant. All these can be considered as the macro factors that affected the background of vaccine rejection.

Escape from rational thought in the context of criticisms of modernity

World War II was the beginning of a period when modernity and enlightenment philosophy were brought into question and when the devastating consequences of *practical reason* brought on by capitalism faced a fundamental criticism. As a matter of fact, rational thought ended up in a system where people ruthlessly exploited each other; shortsightedly destroyed the environment, massacred people in wars, and designated profit-making the only rule of thumb at all costs. This was criticized severely by many thinkers. In the following decades, criticisms of rationality smashed the intellectual basis of the modern world to a great extent. However,

especially from the 1980s onwards, this kind of criticism of modernity turned into fundamentalist reactionary movements and a total rejection of reason against the profit-seeking capitalist system that negates the individual. All kinds of rational thought were accused of being a universally oppressive tool of profit, and what is irrational was welcomed. Generally speaking, this kind of criticisms could be described as postmodernist, and they constituted a reactionary stance against all things rational. However, the sole target of such approaches is not philosophical ideas; actually, differentiation in social logic due to a change in the mode of production is one of the most fundamental causes of departing from reason [10].

During the 20th century, capitalism underwent the growing pains of transitioning into a new mode of production. *Industrial capitalism* based on concrete commodities started to be replaced by *finance capitalism* based on the hypothetical circulation of abstract values. Unlike industrialization, which is based on rigid categories and certainties, finance capitalism is based on the determinism of soft and volatile situations. Therefore, modern cultural claims such as stability, coherence, consistency, continuity, and certainty are incrementally replaced by concepts such as irregularities, inconsistencies, unwholesomeness, and discontinuity in this new regime because finance moves are not possible through certain or predictable situations, but rather through indefinite, momentary ones. Hence, the status of *flux*, which is one of the most fundamental characteristics of the world we live in, became a general principle dominant in the society from personal emotions to state policies on different scales. The government style has become more autonomous, decentralized, and target-oriented [11]. On the other hand, this economy of fluidity is shaped by the *globalization* process, which includes the whole world as an integrated market, thanks to capitalism. However, globalization means inter-cultural communication as much as standardized dominance of capital. Therefore, today, information is disseminated fast and influences the whole wide world [12]. However, this democratization in the dissemination of information also means an unchecked flow. Fake, biased, slanted, subjective, and emotional information can spread even faster than accurate information on a global scale. Different attitudes toward vaccine rejection usually feed off of such an intellectual, economic, and social atmosphere.

Another phenomenon accompanying criticisms of modernity and globalization stems from socialization based mostly on *consumption* rather

than production. In other words, consumption is an instrument of individual identity or even strategy in today's finance capitalism conditions. Objects, ideas, situations, relations, meanings, and discourses get consumed fast, becoming a form of *socialization*. As a result, it does not matter whether a piece of information is correct, genuine, consistent, or functional. The discourse about it overshadows its substance. Complex networks of information facilitate this dissemination. Thus, the form and discourse of information, as well as the images coded in it, become the sole measure of its persuasiveness instead of its essence. Generally speaking, we can say we live in an economy of representation, rhetoric, and phenomena.

Reductionist information, pseudo-science, and conspiracy theories in the face of complexity

The phase of finance capitalism the world is experiencing right now is a serious source of *anxiety* for individuals due to the endless interactions and grand uncertainties accompanying it. On the one hand, individuals experience a kind of liberation because of the information technology; on the other hand, they feel deep *desperation* or *negation* in the face of such a complex and uncertain world. We can describe the situation we find ourselves in as some kind of *anomie* that renders social norms uncertain and ineffective for individuals. Individuals cannot differentiate between pieces of fake information and accurate ones. Then, they adopt irrational attitudes that are ideologically legitimized in the face of such a *crisis of explanations*. On the one hand, they consume the constant flow of information, and on the other hand, they try to decide which piece of information is correct by inclining to agree with the rhetorically more powerful ones. Today, most physicians waste time trying to convince their patients from different walks of life, who self-diagnose by compiling information on the internet, that these pieces of information can be misleading. The increase in the accessibility of information led to widespread pseudo-scientific claims. The complex reality (availability of multiple sources, specializations requiring a wide range of knowledge, a general state of uncertainty, etc.) leads to individuals flocking to reductionist, template-like, stylized information instead of expert opinions. Therefore, the problem with most parents who experience hesitation over vaccination is not only the inability to access accurate information, but also to access it through the proper channels. Fake, inaccurate, and incomplete information leading to anti-vaccination attitudes or hesitation concerning it is mostly compiled over the internet rather than consulting a specialist [13]. However, surf-

ing the net for information means susceptibility to the manipulations of focused communication groups rather than being random acts. In other words, anti-vaccination attitudes do not happen by chance when parents (especially mothers) find such information online. According to a study, the deeper the fear a parent feels about vaccination, the more committed he or she will be to the pseudo-scientific communication channels where such attitudes will be supported and confirmed [14]. People like to be able to explain their reality, but this basic desire becomes more and more difficult in a society where a general complexity prevails. Therefore, for many people, *stereotypical and simplified explanations* seem more appealing. The level of education does not have much impact on the subject. On the contrary, sometimes, being educated may even enable unscientific, unwarranted explanations to be accepted more easily. Parents try to make the optimum decision for their children in this multi-sourced, complex environment where there is too much information flow; however, in many cases, they are just stuck between scientific data and non-scientific claims. Even the pro-vaccine parents may support non-scientific claims in case of hesitation [15]. As a result of concerns about the side effects of vaccines, the need to explain away such a complexity mostly leads to support of non-scientific, or even worse, pseudo-scientific claims. Furthermore, when children are concerned, people are observed to behave more sensitively about the side effects of vaccines and possible health issues [16]. The type of vaccine may also play a part in the decision. Especially the debates around the HPV vaccine involves the desire of adolescents (girls in particular), who are the target group of the vaccine, in becoming part of the decision-making process as much as their parents [17].

Conspiracy theories are undoubtedly the most popular discourse in explaining away the complexity of today's world because they offer a package deal in explaining inexplicably complex reality in simple schematics. This way, people become committed to coherent, wide-spectrum narratives that explain uncertainties and paradoxical phenomena [18]. Moreover, conspiracy theories offer explanations as to the malevolent intentions of sinister powers way beyond their comprehension. Such a feeling of incapacitation also saves the individual from all kinds of responsibility. Moreover, as scary as it may be, it also brings about a coherent explanation in a holistic scenario. The parallelism between the anti-vaccine attitudes and the tendency to believe in conspiracy theories has been observed. Rejection of vaccines is an

attitude that comes about under the influence of subjective emotions rather than a general pessimism [19]. Even if they present a bleak picture, conspiracy theories offer some type of explanation after all, so it brings comfort to the individual. Thus, a new *regime of truth* emerges: *The truth of faith in fake information*. Information networks, mass media tools, and social media platforms offer all kinds of support in production, dissemination, sharing, and adoption of this sort of fake information as a form of social reality. The idea that vaccines are tools developed by the modern state to oppress the people and by the big pharma to keep the population under check may sound appealing to many people at first because it offers a wholesome and comprehensive narrative package to a complex and difficult problem. Moreover, the anger generated by the feeling of helplessness is directed to a certain focal point. Irrational thought creates its own rationalization. The problem in this debate is that some of the claims in these conspiracy theories are valid, albeit partially. It is a fact that big pharma manipulates research, publications, and information for profit. However, this cannot annul scientific information altogether. Nor can it prove that the pharmaceutical industry manipulates all activities. It cannot determine that the social sphere is completely run by a superior power. Nevertheless, we have to emphasize that anti-vaccine attitudes usually prefer simple claims [20]. Therefore, non-scientific allegations and conspiracy theories become popular.

On the other hand, global cultural interaction has also initiated a trend in individuation and democratization. Social relations are reconsidered at all levels in terms of relative equality and democracy. *The fights for rights* to overcome current inequalities become stronger by the day [21]. Subjective values highlighted by criticisms of modern rationality also transform individual preferences into social yardsticks. Thus, a self-centered way of acting becomes widespread. Information is not obtained as a standard product of a scientific process but rather turns into something individuals elaborate with all kinds of irrational interpretations. Therefore, pseudo-scientific allegations and conspiracy theories are fast disseminated, especially over the mass media, and people are convinced of the accuracy of subjective viewpoints so much that sometimes, they cannot even grasp scientifically proven facts, and they twist them into pseudo-scientific discourses. In addition, some media figures who state their opinions with their identity as a 'scientist' and support these pseudo-scientific claims mislead people ready to believe in such ideas with their reductionist information formulas. Additionally, criticisms of information

regimes based on reason and science also lead to practices such as *alternative medicine* in the unregulated public sphere. Because most of these involve folk wisdom inherited from pre-modern eras in the public memory, or because they are repackaged in pseudo-scientific forms, large masses with little education find them appealing. Faith in pseudo-scientific claims is built upon the acceptance of subjectivity as a unit of absolute meaning. This merges with fights for rights as another consequence of globalization and becomes a kind of *paradox of democracy*.

Sanctifying irrational thoughts in fights for rights

The globalization process enabled cultural interaction and gave masses wide access to information that used to be so hard to get in the past. This way, all kinds of information is easily disseminated in an unfiltered and unchecked form to be adopted by people. This is a prerequisite for freedom of speech and expression; however, unwarranted, unproven claims passing off as facts may lead to social unrest or even upheavals. Rejection of or hesitation toward vaccination may also emerge as part of a general fight for rights by individuals. Since the sources of authorities are questioned more vigorously, imposing practices of the state or big pharma can be more and more debated and questioned. Anti-vaccine attitudes also feed off of different interpretations of democracy [22]. We observe that stating and emphasizing individual preferences and demanding that they be implemented started to weigh more than the need to maintain social order. This is very congruous with the ideological context of the reductionist neo-liberal approach to healthcare as a private sector. Therefore, on the one hand, citizens fight for more rights as a natural part of the democratization process, and on the other hand, this demanding position is covered by a privatized public service in many situations. Hence, individuals find themselves behaving like a *consumer*. Consumerism ruled by subjective values inevitably exalts irrational thought as well as escapism from reason and science. Moreover, this demand for rights mostly turns into many easy-to-reach pseudo-scientific claims and reductionist bits of information based on conspiracy theories. It is possible to observe all these characteristics in the rejection of vaccination. The hegemony of subjectivity, the critique of reason, turf loss of modern thought, and privatization of the public sphere had another consequence: Traditional or religion-oriented activities get legitimized for people without any need for scientific evidence. Indeed, in the rejection of vaccination, especially in cases in Turkey, traditional or religious pretexts merge with

irrational discourses (rumors, urban legends, unwarranted beliefs, subjective conceptions) and become popular. However, Turkey is not among the lowest income countries where people flock to dominantly religious reasons rather than just lack of information in recent years (2014-2016) in anti-vaccine attitudes. In countries similar to Turkey, anti-vaccine behavior depends more on a lack of information and profit-and-loss considerations; however, religious motives seem to be on the increase [23].

Vaccine rejection as a protest against modern thought

Anti-vaccine attitudes never stem from just one cause. Different types of causes that interact with each other may lead to attitudes of hesitation, abstinence, or rejection of vaccination. These causes can be grouped as (1) contextual, (2) individual and group influences, and (3) related to the vaccination itself [24]. When we examine anti-vaccine attitudes or hesitation regarding it, we see four types of basic attitudes: (1) rejection for traditional reasons; (2) rejection based on individual/philosophical reasons; (3) rejection based on a need for more information; (4) rejection based on concerns about vaccine safety [25]. All four attitudes flourish on different impulses, but they all result from the same anti-modern intellectual and socio-economic environment. However, it has also been demonstrated that values such as conformity, safety, disease control, and universalism feed contradictory attitudes and can pave the way for pro-vaccine attitudes as well as anti-vaccine ones [26]. The most common type of reason for rejection seen in Turkey is the one related to traditional attitudes. Because these are related to religious beliefs, it can be said that this group of people are the least likely to change their minds. However, rejection based on internet-compiled pseudo-science, reductionist information, and conspiracy theories is markedly increasing. Moreover, this type of rejection is not only seen in people with good education; people from all walks of life can adopt pseudo-scientific claims that are easily accessible, with a strong faith. It is also possible to reduce the four groups above roughly into two: Those who reject vaccination on the basis of religious and traditional motives, and those who reject complex scientific claims as a result of unchecked information flow. The latter attitude may turn into a philosophical outlook with personal reasons and concerns over vaccine safety. Philosophical pretexts appear as the rationalization of certain consistent but still, in essence, personal and subjective preferences. What is essentially *reactionary activism* becomes concretized as an anti-modern holistic attitude and

ideological and political preferences in the same direction. Just like religious reasons, philosophical attitudes are also hard to change. Moreover, they are the intellectual products of people who can mobilize scientific theses to build themselves an alternative reality. In addition, the way to access, classify, and use information is influenced by the norms of the environment individuals socialize in [27]. This kind of activism or intellectual resistance results in individuals reshaping some information compounds that they extract from an insurmountable amount of information which becomes ever so difficult on a daily basis, around their rationalities.

When subjective values and consumerist individualism prevail, it also means a *crisis of confidence* about the shrinking public power. Indeed, since the state withdrew from the public sphere as a service provider, with the privatization of public functions, it also lost its equidistant status of the objective rule of law. Thus, the *system of trust* indispensable for social order *became relative and uncertain*. Individuals try to build the system of trust they need for their social existence by themselves. Thus, everyone looks for their own truth and doubts the standard information of the objective, scientific method. Rejection of vaccination is related to this kind of information relativism, loss of trust in public functions, and the spread of faith that subjective truth is more valuable than public truth. Moreover, some personal tactics like shot-limiting can be created by people who pose as alternatives to the standard vaccination programs. It is possible to gradually spread the effect of vaccines believed to be negative, as well as avoidance of some vaccines while hesitantly accepting others. In some cases, it is observed that because of social pressure or repeating the vaccination decision made for an older offspring, vaccination is approved in what is termed *vaccine inertia* [28]. It should be underscored that a hesitant attitude toward vaccines demonstrates more heterogeneity than other attitudes toward vaccination. Although hesitancy toward vaccination generally demonstrates a lack of judgment in the face of the concept and application of vaccination, it can also appear as acceptance of some vaccines while rejecting some others. For example, the HPV vaccine can be said to face such a generalized hesitancy toward vaccination. In addition, here, conspiracy theories can prevail together with psychological reasons such as a fear of the injection (parents with such a fear expressing the same concern for their children) and moral purity (the belief that because of religious, cultural, and personal reasons, any intrusion can breach the body's purity) [29].

Although the rejection of a vaccine based on religious/traditional motives may seem contradictory with other reasons (like a lack of information and education, the dominance of dogmatic thought) at first glance, they stem from the same crisis of trust. Reasons such as criticisms of modernity, the ruthless competitive edge of the neo-liberal economy, loss of territory for the production of scientific knowledge, increasing cultural relativism due to globalization, and introverted community life cause religious people to see vaccination as illegitimate. Often, it is observed that they believe the vaccines include *haram* components (e.g., pork products) or unwarranted rumors (e.g., vaccines causing sterility or disabilities). However, it cannot be claimed that religious beliefs are the principal cause of anti-vaccine attitudes. Around the world and in Turkey, incomplete information or misinformation seem to prevail over religious motives. Accordingly, hesitation over the possible negative side effects of vaccines sometimes involve religious reasons as well and become distinctly dominant [30].

Today, many diseases that wreaked havoc on humanity throughout the ages can be cured. The plague, which had an increasingly devastating effect along with the development of city life and commerce routes and decimated the world population many times in history, along with many other contagious diseases has been effectively controlled, and some have been eradicated. In the struggle against the plague, we can claim that a mental transformation toward the scientific approach could be observed as early as the 18th century. The plague was perceived the result of an unclean lifestyle rather than a punishment of sins or wrath of the evil spirits [31]. In two centuries, the world became much safer than the previous periods in terms of hygiene and disease control. Epidemics, which were a natural part of the daily life up until the 19th century, were prevented to a great extent. The invention of vaccines played an important role in all these achievements. Today, we mostly live in antiseptic, hygienic conditions, and especially in developed countries and among educated segments of the society, the threat of contagious diseases is almost non-existent. This virtual non-existence of contagious diseases in the public sphere may be perceived by particularly educated parents as the absence of danger [32]. Epidemics are now conceived as distant from the collective memory and individual experiences and as a phenomenon of the distant past [33]. Such a conceptual distancing causes semi-scientific deductions in terms of individual right seeking movements, the spread of reductionist information, and subjectively

oriented lifestyles. Furthermore, people who are hesitant toward vaccines are observed to believe that diseases can be overcome without the help of vaccines [34]. For example, educated parents with New Age beliefs think that immunization should happen through natural processes and that vaccination is an intervention to this spontaneous mechanism. Therefore, they do not want their kids to be vaccinated. However, especially in Turkey, vaccine rejection by such educated parents is a relatively marginal phenomenon. Over the years, the number of parents who are hesitant or have an outright anti-vaccine attitude has increased. According to the results of many studies, their education level is inadequate, they have multiple children, and they have a low socio-economic profile. The correlation between the socio-economic status (SES) and knowledge-attitudes-beliefs (KAB) is mostly determined by education and partly the level of income [35]. According to a study done in Turkey, in a hospital servicing a population of relatively low socio-economic level, in the 6% group who did not get their kids vaccinated, 2% stated that they did not need it, and another 2% said they avoided vaccines because they believed they were harmful [36]. As can be seen, regardless of whether anti-vaccine attitudes depend on religious/traditional reasons, or just the opposite, on philosophical/personal preferences, at the end of the day, they all originate from the same anti-modern and irrational critical environment and the policies of the neo-liberal economy, which turn the citizens into consumers.

Predictions and solutions

First of all, we should keep in mind that ways of resistance such as anti-vaccine behavior, rejection of vaccination, or hesitancy toward vaccination are not only limited to vaccination but in general, emerge as part of an escape process from science and rationality. Otherwise, this problem will only be assessed symptomatically, and palliative solutions will be offered. There are similarities as well as differences between anti-vaccine attitudes in the world and Turkey. Therefore, the solution should be partly general and partly particular. Vaccines are one of the important social organizational tools of the modern state. The regression and shrinking of public service in the last three decades atrophied the quality of the state as an objective service provider to a great extent. Underlying the resistance toward vaccination, there is this loss of significance on the part of public service. Hence, an effective and comprehensive solution to the problem of vaccine resistance can only be possible by involving the public power in the process. Right now, it does not seem easy, under

the current political climate in Turkey, for the political will with various ideological, economic, clientelist concerns to adopt a definitive stance against anti-vaccine attitudes or policies that would get results as well as sanctions. However, democracy is not an ideal but rather the process of the struggle itself. It is imperative that the actors in a primary position take a stance against anti-vaccine attitudes and get involved in the fight. These actors are of course primarily doctors' vocational organizations and healthcare unions.

Whereas individual fights bring in local and short-term consequences, organized fights produce more effective and long-term achievements. The reservations within the political will may become an attribute that discourages parents to partake in the campaign against resistance to vaccination. This situation may make it more difficult to fight against the aforementioned resistance. However, the importance of the fight put forward by vocational organizations becomes more visible at this stage. These organizations would need to have a dialog with the political decision-makers with persistent assertiveness to collaborate toward aligning the interests of both sides. Health unions' systematic and determined campaigns against the resistance to vaccination shall bring about significant results. Without any government funding or with a limited amount of funding, success would be limited. However, continuing a fight with an agenda will eventually ring a bell with the people. The individual fights put forward by health personnel should not be overlooked. To reach the main goal, we propose utilizing a campaign policy that is standardized concerning certain criteria instead of utilizing sporadic and individual endeavors closely tied to personal inclinations. This choice would make it easier for the practitioners at the very end of the system to convey the information to parents. Consequently, health practitioners would need not only to be informed about scientific facts by health unions but also to be trained by them regularly in the area of communication skills. Indeed, the most effective communication strategy would be to explain the profit/loss balance to hesitant parents [37]. If coordination could be achieved with non-health disciplines within the fight against the resistance to vaccination so that macro-plans could be put together, all endeavors would be more focused and meaningful. Among other solutions, determining the geographical distribution of parents against vaccination would probably make it possible to analyze these parents' socio-cultural characteristics that are tied to the geography they live in [38]. Indeed, this geographical clustering,

most of the time, points to a socio-economic clustering. Whereas low-income families with low level of education tend to resist vaccination, high-income and well-educated families also show resistance to vaccination, sometimes at a higher rate than their low-income counterparts. In high-income neighborhoods, there have been kindergartens spotted that would only accept children who are not vaccinated [39].

Parents against vaccination and parents that are hesitant toward vaccination share a common inclination. Both groups think that they need to receive more information on the topic. There is indeed a lack of guidance for parents against vaccination. However, especially with the *vaccination-hesitant group*, correct information needs to be conveyed accurately, using correct communication skills (e.g., in a nontechnical and understandable fashion) because surveys show that *parents against vaccination* do not usually change their stance after they have been given guidance by health personnel. However, parents in the *vaccination-hesitant group* do tend to be persuaded to get their children vaccinated after being briefed by the health personnel. Therefore, vaccination hesitation may be defined as a temporary conviction [40].

The temporary convictions of vaccination-hesitant parents may be reversed not by authoritarian sounding experts but by health personnel who convey the necessary information using the correct communication skills. The bottom line is that the campaign against the resistance to vaccination needs to be run in a persistent but not an authoritarian manner.

Conclusion

The resistance against vaccination, with its many forms, is a contemporary problem. Multiple attitudes cause this resistance. These attitudes could stem from religious/traditional beliefs, individual/philosophical convictions, having concerns about the safety of vaccines in general, and the need for more precise guidance on the topic. Although these attitudes are rooted in individual and social origins, they are closely related to a worldwide transformation of the mode of production. Since the 1980s, the criticisms of modernity became widespread, and while making criticisms of instrumental rationality, total rejection of reason came into being. In addition, a process began within which global neo-liberal policies were put into effect. The power of the public sphere has been weakened, and the state has moved away from being an instrument of social service. The privatization of public service functions has become natural. On a global scale, the integration of financial capital

caused fluidity, uncertainty, and discontinuity to become the new social logic. At the same time, because of globalization, information networks started, in a fast and effective way, which paved the way to quick and easy dissemination of dubious and/or pseudo-scientific information. In the fight against fake information, the positivist approach of presenting concrete facts, which is a frequently applied method, may not always be successful. This is not only because these baseless beliefs are attractive for intellectual comfort, but also because even when countered by the aforementioned positivist approach, they get continuously repeated [41]. Therefore, fake information should not be re-stated even for the purpose of disproving them. The best approach would be to state just how safe vaccines are, in a persuasive language.

The movements of fighting for rights and democratization have convinced the individuals about the prioritization of objective values. The rejection of or the resistance to vaccination is not just a problem of lack of education or not being able to access correct information. It is a complex situation that flourished because of all the aforementioned socio-economic factors. Hesitation toward vaccination and especially the rejection of it also serve as a social identity. Vaccine rejecting parents do not just make a statement and defend it as a product of individual will, but they also form a circle of cultural belonging with each other. It can be argued that the social identity issue is the most difficult aspect to overcome in the fight against the vaccine resistance [42].

The fight against vaccine resistance may be successful if political decision-makers adopt an explicit attitude and make arrangements in line with this explicit attitude. However, in countries like Turkey, where the political will cannot take a determined stance, it is vital that health unions enter the fight in a determined and systematic way.

It is the responsibility of health personnel to dispel the hesitations about vaccines by disseminating the correct information through appropriate approaches and communication skills. However, educating the health personnel is the duty of the state first and then the vocational unions. The strategy of persuading vaccination-hesitant parents may succeed if the current social values and norms are referred to instead of imposing scientific facts on them [43].

Healthcare personnel are one of the major sources of information on vaccination for parents, even the hesitant ones [44]. Therefore, when creating vaccination policies, it should be

considered that healthcare personnel, especially pediatricians, are responsible to the public at large, and not just to parents [45].

With the right kind of dialog, it is possible to overcome the resistance against vaccination. The success of such a persuasion policy depends on whether it involves stability, determination, and standard and correct forms of communication.

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