Social Stigma and COVID-19 Vaccine Refusal in France

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Abstract

Context: In 2021, French health authorities strongly promoted the vaccination against Covid-19. We assumed that refusing this vaccine became a 'stigma', and we investigated potential 'public stigma' toward unvaccinated people among the French population.

Methods: A representative sample of the French adult population (N=2,015) completed an online questionnaire in September 2021. We focused on participants who were already vaccinated against Covid-19, or intended to get vaccinated (N=1,742). A cluster analysis was used to obtain contrasted attitudinal profiles, and we investigated associated factors with logistic regressions.

Findings: Regarding attitudes toward unvaccinated people, several pejorative statements were supported by a majority of respondents, and a significant minority also endorsed social rejection attitudes. We found four contrasted attitudinal profiles: Moral condemnation only (32% of respondents), Full stigma (26%), No stigma (26%) and Stigma rejection (16%). Early vaccination, civic motives for it, faith in science, rejection of political extremes and being 65 or over were the main factors of stigmatizing attitudes toward unvaccinated people.

Conclusions: We found some evidence of stigmatization toward unvaccinated people, but further research is needed, especially to investigate perceived stigmatization among them. We discussed our results in reference with the concept of 'Folk Devils', and from a public health perspective.

Keywords COVID-19, vaccination, France, stigma

Since the very beginning of the Covid-19 crisis, many public health experts considered mass vaccination as one of the major ways out of the pandemic. The first vaccines were available

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by the end of 202 and during 2021 9 billion doses of anti-Covid-19 vaccine were administered worldwide. In many countries, this unprecedented mass vaccination campaign had to face lay people's as well as health care workers' hesitancy toward the new vaccines (Verger et al., 2021; Wang et al., 2021), in a global context of increased attention to public defiance toward vaccination during the last decade (Larson et al., 2016). In France, in March 2020 one out of four adults stated that they would refuse to use an upcoming vaccine against Covid-19, and this proportion reached almost 55% at the end of the year (SPF, 2022). Nevertheless, one year later, more than 90% of French adults had already received two doses of vaccine (SPF, 2023).

Each successive Covid-19 wave may have eroded people's reluctance toward this vaccination, but this high immunization coverage also resulted from heath authorities' strong measures to promote Covid vaccination, and especially the announcement and implementation of the 'health pass' (*passe sanitaire*) in July-August 2021. Indeed, the French government decided to forgo mandatory vaccination in favor of a health pass that gave people a choice and did not impose state sanctions on the unvaccinated: after August 2021, people aged 12 and over had to be fully vaccinated or test negative every 48 hours in order to enter a number of public places (including movie theatres, theatres, bars and restaurants) or to use long distance public transports. During the same period, similar measures aiming at excluding unvaccinated people from public spaces were implemented in several other European countries (including Germany, Austria, Greece, Slovakia). Alongside these measures, mainstream media, journalists and various political figures, including the President of the Republic, depicted the unvaccinated as 'egoist', 'irresponsible', 'pro-virus' or 'anti-vax' people, and the question arose in the media whether or not unvaccinated infected people should be non-priority in overcrowded hospital settings[1]. For example, on August 28th, the

[1] For the print media, for example: '"Vaccines are for other people", an extension of selfishness' (*L'Express*, 07/09/2021); 'Emmanuel Macron denounces the "irresponsibility and selfishness" of non-vaccinators' (*20 minutes*, 07/26/2021); 'Selfish people who don't care about the community' (*Ouest-France*, 08/19/2021); 'Antivax, revealing a society sick of its selfishness (and lack of culture)' (*L'Express*, 08/19/2021) ; 'Vaccine selfishness

front pager of one of the main national daily newspaper, *Libération*, showed a bearded man with a hoodie, hidden in the shadow, with the title *Repentent anti-vaxxers: "I have been selfish, getting vaccinated is civility"*. In other words, within a few months, the French population was split into two categories, the 'vaccinated' and the 'unvaccinated', and the latter category was subject both to pejorative labels and exclusion measures designed to separate the two categories, at least in the public space.

In sociology, the combination of these two aspects, moral condemnation and social rejection, usually refers to the concept of 'stigma', coined by Erving Goffman in the 1960s. A stigma, in Goffman's (1963) definition is an attribute that binds a person to a pejorative stereotype; such an attribute can be a physical handicap or deformity, a specific behaviour or condition that reveals blemishes of individual character, or membership of a particular community.

Refusing the Covid-19 vaccine corresponds to the second type of stigma, and notably during recent decades, a number of unhealthy behaviours or conditions have been also described as stigmatized (cigarette smoking, intravenous drug use, HIV infection, mental illness, obesity, epilepsy, cancer) (Alonzo & Reynolds, 1995; Peretti-Watel, 2003; Stuber et al., 2008; Knapp et al., 2014; Pescosolido & Martin, 2015).

Moreover, moral condemnation and social rejection are complementary aspects: of course, there is a public health rationale to separate vaccinated and unvaccinated people, as the latter ones are more likely to be infected and infectious, so vaccinated people may avoid the unvaccinated ones for obvious sanitary reasons. But such instrumental motives for avoidance and rejection are usually entangled with symbolic motives (for example,

kills' (*La Montagne*, 09/01/2021); 'the selfishness of the unvaccinated' (*Métro*, 09/15/2021); 'Unvaccinated French people: a bonus for selfishness' (*Le Point*, 12/17/2021); 'Irresponsible non-vaccinators: who are they? what are their reasons?' (*Calvi 3D*, 01/07/2022); 'Yes, f*** selfishness, f*** uncivism' (*Le Journal du Dimanche*, 01/08/2022), etc.

willingness to avoid stigmatized people in order to express personal values and one's disapproval toward non-conformity (see Rozin, Markwith, & McCauley, 1994; Phelan, Link, & Dovidio, 2008). More generally, historically people considered guilty of a moral transgression have been frequently perceived as both tainted and contagious (Douglas, 1966; Foucault, 1988).

In the present exploratory study, we aimed at investigating to what extent people who refused the Covid-19 vaccine may have been stigmatized, by measuring the spread of pejorative statements and social rejection toward them among the French public opinion during the Fall 2021. We also discussed the health policy implications of this issue.

From a Micro to a Macro Perspective

Goffman's perspective was focused on the micro level, on the interpersonal relationships of daily life: how people carrying a stigma deal with it when they meet other people, how they try to conceal or to stage it, and how other people react to it. Subsequent works endorsed a macro perspective, taking into account the social, cultural, political and economic forces that structure stigma. These works considered stigmatization process as a continuum (as it could be mild or harsh), and they emphasized the importance of social inequalities, as stigmatization can only occur if stigmatized people lack social, economic or political power in relation to those who stigmatize them (Link & Phelan 2001).

This change in scope also led scholars to develop related notions of 'institutional/structural stigma' and 'public stigma'. Structural stigma broadens the scope from individuals to organizations and institutions. It refers to policies of either public or private organizations that intentionally or unintentionally restrict the opportunities for people bearing a specific characteristic; it includes the health care system, but is not limited to it (Corrigan et al., 2004; Corrigan & Kleinlein, 2007). The 'health pass' described *supra* is a

good illustration of such structural stigma. 'Public stigma' refers to the levels and nature of the stigma as it can be measured by quantitative surveys in the general population (Pescosolido & Martin, 2015).

'Public stigma' is a multidimensional concept, including distinct dimensions such as social rejection (reluctance to interact with people bearing a specific characteristic), traditional prejudice (considering them as inferiors: less intelligent, less productive, less trustworthy), exclusionary sentiments (denying them the right to engage in some activities and roles which are open to others: being a parent, a teacher, a health care professional) or perceived dangerousness (they may represent a threat during interactions, or more generally to be considered a public nuisance, Pescosolido et al., 2010, Pescosolido & Martin, 2015). Regarding adults who refuse to be vaccinated against Covid-19, the labels used in the media ('egoist', 'irresponsible', 'anti-vax') are good examples of traditional prejudice.

Investigating Public Stigma toward Unvaccinated People and its Correlates

In the present paper, our first goal was to investigate potential public stigma toward unvaccinated people among vaccinated French adults during the Fall of 2021. Such stigma has distinct attributes. Firstly, it is not based on visible physical traits that the 'stigmatizers' could easily identify on the 'stigmatized' ones. It is therefore likely to occur, in ordinary interactions (i.e. outside of situations involving verification of a sanitary pass), through a set of specific or unspecific clues intuitively associated with non-vaccination, including presence or absence at certain events and in certain places, young age, but also expressed distrust toward mainstream media, science or the health authority.

Secondly, this stigma does not affect sick individuals but individuals who refuse to take prophylactic treatment that was provided free of charge. It is a matter of choice that directly involves the health of others. Thus, from a moral perspective, contrary to more

traditional forms of stigmatization studied in medical sociology (mental illness, epilepsy, obesity), the usual underlying assumption that stigmatization is unfair and unjustified may not be met in this case. Some readers may even struggle to identify why stigmatizing those who refuse vaccination in pandemic times is an issue. Nevertheless, in his seminal study Goffman referred to a much wider spectrum of 'discreditable' people: in *Stigma*, the reader crosses paths with disabled people, members of ethnic minorities, homosexuals, prostitutes, drug users, beggars, as well as former convicts, thieves and other established criminals, a sex offender and even a professionalised hangman. His main concern was how stigma affect people, and how they deal with it, not whether this stigma is 'deserved' or not.

For these two reasons, we postulate that the process of stigmatization toward unvaccinated people may take a different form than that observed for other health stigmas, and that studying it may broaden our comprehension of such stigmas in contemporary societies. In what follows, we address the following questions: to what extent did the vaccinated French endorse various stigmatizing assertions toward the unvaccinated ones? Moreover, did their opinions combine into meaningful patterns? And can we identify factors associated with these patterns?

To do so, we investigated the factors usually linked to stigmatization, including sociodemographic background (and especially socioeconomic status and education), instrumental and symbolic motives, and proximity to people bearing the stigma. We also added others factors that could be linked to stigmatization, namely faith in science and rejection of political extremes (see below).

While the social attributes of those most likely to be stigmatized are now well known (indeed, previous French studies found that refusal of the Covid-19 vaccination was correlated with a low socioeconomic status and to indicators of social deprivation, Coconel, 2020; Bajos et al., 2022), the factors determining stigmatizers' attitudes have not been studied. Beyond

sociodemographic indicators, in order to disentangle instrumental and symbolic motives, we also took into account the personal fear of being infected by the Covid-19 as an instrumental motive for stigmatisation, as well as 'civic' vaccination (deciding to get vaccinated for protecting fragile people), as a symbolic motive for stigmatisation (in contrast to unvaccinated adults portrayed in the media as egoistic and lacking civility).

Moreover, unvaccinated people have been described by the French media as science skeptics and conspiracy theorists, and in the political arena their champions came from either Far-Left or (more frequently) Far-Right parties. Beyond this media description, in France hostility toward this vaccine was indeed much more prevalent among people who feel close to Far-Left or Far-Right parties, as well as among those who distrust science (Ward et al., 2020; Ward, 2022), and people may have noticed that during their daily interactions with unvaccinated people. Thus we also considered in our analyses faith in science and rejection of political extremes.

Finally, a number of previous studies suggested that greater proximity and familiarity with people bearing a stigma leads to less public stigma, for example for mental illness (Corrigan & Nieweglowski, 2019) or diabetes (Subramaniam et al., 2021). In our case, a central element in the construction of an in-group/out-group boundary separating vaccinated and unvaccinated people consisted in considering the moment of vaccination. In France, during the fall of 2021, some of the vaccinated people took the shot quite lately, thus they belonged to the "unvaccinated" category until recently, and they may remain close to them in various ways. Thus we also took into account the timing of vaccination.

Material and Methods

Survey Design

We used an online research panel of more than 750,000 people. Participants were randomly drawn and contacted to reach a sample size of N=2,015 within 10 days (from September 22th to October 1st 2021). To avoid possible selection bias, the invitation email did not mention the theme of the survey. Representativeness of the French mainland population was reached through quota sampling on age, gender, profession, region and size of the town of residence. Collected data were weighted to further match French official census statistics for these characteristics. The study design was approved by the ethical committee of the French National Institute for Health and Medical Research (INSERM #21-770).

Data Collected and Indicators

Participants were asked whether or not they had planned to get vaccinated against Covid-19, with the following response items: 'already vaccinated (at least one shot)', '*yes certainly*', '*yes probably*', '*probably not*', '*certainly not*'. Questions intending to investigate public stigma toward unvaccinated persons were asked only to participants who reported either they had already received at least one shot, or they 'certainly' or 'probably' would get vaccinated. We labelled them the 'compliant' people.

Public stigma was measured with 10 assertions (proposed in a randomized order) which were based either on the depiction of unvaccinated people in the French media or on previous items used to measure the stigmatization of smokers and heroin users (Stuber et al., 2008; Peretti-Watel, 2003; Peretti-Watel et al., 2014). Seven items described "adult people who refuse to get vaccinated with no valid contra-indication' in a pejorative way: *they lack civility; they are selfish; they are ill-informed; they are 'conspiracy theorists'; they don't care enough about their relatives' health; they set a bad example for youth; they hinder economic recovery.* One item referred to participants' perception of the social rejection of these people (*they are less accepted by society*) and 2 items investigated their personal attitude toward such

rejection: *I could date one of them; I avoid contact with them*. For each of these 10 statements, the response items were the following ones: *strongly agree, agree, neither agree nor disagree, disagree, strongly disagree, don't know or don't want to answer*.

In order to build a synthetic indicator of public stigma toward unvaccinated people, we first computed Cronbach's alpha statistic to assess the reliability of these items as a scale. As the alpha was high (0.82), we recoded answers (+1 for *strongly agree/agree*, -1 for *disagree/strongly disagree*, and 0 for other responses, with the reverse for the statement *I could date one of them*) and we summed them up, resulting in a score ranging from -10 to +10.

Regarding potential determinants of public stigma toward unvaccinated people, collected sociodemographic characteristics included age, gender, educational attainment and household monthly income. Regarding fear of infection, participants were also asked to rate to what extent they worried about being (re)infected by the Covid-19 (from 0 '*not at all*' to 10 '*tremendously*').

Attitudes toward science were investigated with a standard question (Bauer et al., 2021): *Generally speaking, do you think that science does humanity more good than harm, more harm than good, or as much good as harm?* We built a binary indicator to identify those who answered '*more good than harm*'. Regarding rejection of political extremes, participants were asked from which French political party they felt the farthest (among a list of 17 parties), and responses were encoded into a three-item outcome: away from far left, away from far right, other.

Regarding the vaccination timing, we distinguished three categories: participants who received their first dose before July 2021, those who received it in July or later, and those who were not vaccinated yet but reported they intended to do so. Finally, regarding civic vaccination, participants were also asked to rank their motives for deciding to get vaccinated,

and we built two binary indicators to identify those who ranked 'protecting fragile people' or 'protecting their relatives' as one of their three main motives.

Statistical Analyses

We first used bivariate analyses (with χ^2 independence tests for categorical variables and F statistic for continuous ones) to describe the subsample of 'compliant' participants.
Then we performed a cluster analysis on the 10 statements related to adults rejecting vaccination without valid contraindication, in order to summarize the variety of respondents' answers in a few contrasted profiles, and to detect meaningful patterns of attitudes expressed toward unvaccinated people. Items measuring agreement were encoded from 1 to 5 (*strongly agree*=1, *agree*=2*, neither agree nor disagree, don't know or don't want to answer* =3*, disagree*=4*, strongly disagree*=5). These scores were transformed into Z-score form prior to clustering with the usual agglomerative hierarchical procedure (Anderberg, 1973). We opted for the four-cluster solution, and to describe the distribution of participants' answers to the 10 items according to the clusters, as well as their sociodemographic profile, we used a ternary recoding (agree/no firm opinion/disagree). We also computed the mean synthetic score of public stigma for each cluster.

Finally, we used multiple logistic regressions to investigate factors associated with clusters corresponding to stigmatizing attitudes toward unvaccinated people. We used a stepwise selection procedure in order to exclude from the models non-significant covariates. Then, in order to rank these factors by their relative importance, we used a multimodel averaging approach based on the Akaike information criteria. This approach estimates all possible models, given the explanatory variables introduced, and computes the final model as the weighted average of all parameters and standard errors from all possible models (Turkheimer et al., 2003). We used partial Nagelkerke's R squares to quantify the partial

contributions of each explanatory variable to the dependent variable and relative importance weights (values between 0 and 1) to classify the explanatory factors according to the weight of the evidence of an actual relation with the dependent variable (Posada & Buckley, 2004).

Results

Data Collected

Among the 2015 participants, 1,619 reported that they had already received at least one shot, 63 reported that they would '*certainly*' take the shot, 59 '*probably*', while 95 stated that they would '*probably not*', and 179 '*certainly*' not; in all, 1,742 (86% of participants) were labelled 'compliant'.

Regarding sociodemographic characteristics, 'compliant' participants were older than those who refused the vaccine (mean age 55 years old, *vs* 46, 29% were ≥65, *vs* 10%, $p<0.001$), more educated (23% had a bachelor or higher degree *vs* 12%, $p<0.001$) and wealthier (33% reported a household monthly income <2000€ *vs* 51%, $p<0.001$) (Table 1). Compliant participants were also more afraid of being infected by the Covid-19, and more likely to consider that science does humanity more good than harm. Regarding political partisanship they were more prone to feel the farthest from either far left or far right parties. Finally, among compliant participants, 70% had their first shot before July, 23% in July or after, and 7% not yet; 60% (resp. 28%) ranked '*protecting their relatives*' (resp. '*protecting fragile people*') as one of their three main motive to get the shot.

[Table 1 about here]

Attitudes toward Unvaccinated People

Among compliant participants, a majority (from 59% to 65%) agreed that adult people who refuse to get vaccinated with no valid contra-indication do not care enough of their relatives'

health, lack civility, set a bad example for youth, are less accepted by society and are selfish (see Figure 1). Half of them considered they are ill-informed and preclude economic recovery, and one third labelled them as 'conspiracy theorists'. Regarding their personal attitude toward unvaccinated people, 49% responded they could date one of them, and 27% indicated that they avoided contact with them.

[Figure 1 about here]

Table 2 sums up the results of the cluster analysis. The largest group gathered 32% of 'compliant' participants. Most of them (from 87% to 94%) considered unvaccinated people do not care enough of their relatives' health, set a bad example for youth, lack civility and are selfish. A majority also endorsed other pejorative statements toward unvaccinated people, except that almost half of them had no firm opinion regarding the 'conspiracy theorists' label (37% agreed, 17% disagreed). Moreover, 58% stated that they could date one of them (only 11% disagreed), and 46% disagreed that they avoided contact with them (only 20% agreed). Their average score of public stigma was positive (+4.6). As they endorsed most pejorative statements but not the two related to social rejection, we labelled them *moral condemnation only*.

[Table 2 about here]

Endorsement of pejorative statements was even higher among respondents gathered in the following cluster (26% of compliant participants): between 77% and 100%, including 80% agreeing that unvaccinated people are conspiracy theorists. These respondents were also prone to avoid the unvaccinated ones: 67% stated that they avoided contact with them, and 59% that they could not date one of them, with a very high average score of public stigma (+8.1). We labelled this cluster *full stigma* as it combined moral condemnation and social rejection.

The third cluster also gathered 26% of 'compliant' participants. For every pejorative statement proposed, a majority of them had no firm opinion (from 58% to 72% neither agreed nor disagreed, didn't know or didn't want to answer). Regarding social rejection, 55% agreed they could date an unvaccinated person (8% disagreed) and 51% disagreed that they avoided such people (8% agreed). In this cluster the average score of public stigma was near to zero, thus we labelled it *No stigma*.

Finally, we labelled the last cluster (16%) *Stigma rejection*. Indeed, a majority of those respondents (from 62% to 94%) disagreed with the pejorative statements proposed in the questionnaire, except that 63% agreed that unvaccinated people are less accepted by society. Moreover, 86% responded they could date a non-vaccinated person, and 88% would not avoid them, with an average score of public stigma largely negative (-6.9).

Factors Associated with Stigmatisation of Unvaccinated People

Bivariate analyses showed that the four clusters did not differ according to sex ratio (see Table 3). 'Compliant' participants in the *moral condemnation only* and *full stigma* clusters were older (resp. 53.7 and 60.3 years-old on average, *vs* 47.4 for the *no stigma* and 45.8 for the *stigma rejection* clusters) and wealthier (they reported more frequently a household monthly income >4000€). Educational level was lower in the *no stigma* cluster (43% did not complete a High School degree, *vs* 33% to 38% in other clusters), while the fear of infection was lower for the *stigma rejection* cluster.

Regarding attitudes toward science, participants endorsing a *full stigma* attitude were the most prone to consider science does humanity more good than harm (63%), followed by the *moral condemnation* only cluster (54%). The same gradient occurred for political orientation: participants gathered in the *full stigma* cluster and, to a lesser extent, those from the *moral condemnation only* cluster, were more likely to feel the farthest from far left parties, and conversely less likely to feel the farthest from far right parties.

Finally, most of participants in the *moral condemnation only* and *full stigma* clusters received their first shot before July 2021 (80% and 88%, *vs* 56% and 40% for the *No stigma* and *Stigma rejection* clusters respectively), and they were also more likely to report civic motives for vaccination (protecting either relatives or fragile people).

[Table 3 about here]

Of course, these bivariate statistical relationships have to be disentangled, as the factors considered are not independent: for example, older people are on average less educated, wealthier, and express more fear of infection than their younger counterparts. In order to obtain adjusted effects, and to rank them, we performed multiple logistic regressions with a multimodel averaging approach. We first merged the four clusters into a binary outcome: *moral condemnation only* & *full stigma* (=stigmatisation) *vs. no stigma* & *stigma rejection* (no stigmatisation), and then we focused on the first two clusters and compared one to the other (*full stigma vs. moral condemnation only*). Adjusted (and ranked) effects from the multimodel averaging approach are displayed in Table 4.

[Table 4 about here]

Once adjusted for other factors' effects, the strongest factor of a stigmatizing attitude toward unvaccinated people (either *moral condemnation only* or *full stigma*) was the timing of vaccination: respondents who got their first shot in July or later, or still haven't but intended to, were much less likely to endorse such attitudes. We found very strong evidence of association for several other covariates: people who reported civic motives for vaccination (protecting either relatives or fragile people) were more prone to stigmatize unvaccinated people, as well as those who believed that science does humanity more good than harm, those who felt the farthest from far left or far right parties, and those aged 65 or over. Finally, the evidence was positive but weaker for household income and fear of infection, and there was no evidence of association for gender and educational level.

When comparing the *full stigma* and *moral condemnation only* clusters, the results were quite different: timing of vaccination and civic motivations had no longer statistically significant effects, just as gender, educational level and household income. In this second model, very strong evidence of association was only found for age: among people who stigmatized unvaccinated people, those aged 65 or over were more likely than their younger counterparts to endorse a *full stigma* attitude. The evidence was strong for attitude toward science: those who believed science does humanity more good than harm were also more likely to endorse the *full stigma* attitude. Finally, the association was weaker but positive for fear of infection (the more people feared it, the more likely they were to endorse *full stigma*) and political orientation, but with a different pattern compared to the first model: among people stigmatizing the unvaccinated ones, those who felt the farthest from far left parties specifically were more prone to full stigmatization.

Discussion

Main Results

Among a representative sample of French adults surveyed in Fall 2021, we focused on those who got already at least one shot of vaccine against Covid-19, or intended to get it, and in this subsample (86% of initial sample) we investigated public stigma toward the unvaccinated ones. Several pejorative statements were supported by a majority of respondents, and a significant minority (26%) also endorsed social rejection attitudes. We found four contrasted attitudinal profiles: *moral condemnation only*, *full stigma* (combining strong moral condemnation and social rejection), *no stigma* and *stigma rejection*. Early vaccination, civic motives for it, faith in science, rejection of political extremes and being 65 or over were the main factors of stigmatizing attitudes, either *moral condemnation only* or *full stigma*. Among those who shared such attitudes, being 65 or over and faith in science were the main factors of *Full stigma* attitudes.

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Limitations of the Study

Online data collection involves a non-coverage bias, despite the fact that the Internet coverage is quite high among French households (about 89% in 2018, (Statistica, 2020). Nevertheless, we quota sampled and weighted our data to match French official census statistics for gender, age, occupation and population in the area of residence and region. Regarding declarative bias, online surveys are less subject to social desirability bias than interviewer-administered questionnaires (Kreuter et al., 2008). More specifically, we only addressed one aspect of the potential stigmatization of unvaccinated people, as we investigated public stigma among 'compliant' people, but not perceived stigma by those who bear the potential stigma. This limitation is a major one, and we discuss it more extensively in the following section.

Comparing COVID-19 Vaccine Refusal Stigma to Smoking Stigma

In order to appreciate the magnitude of the public stigma on unvaccinated people, our results can be compared with those obtained with identical or very similar formulations, but targeting the way non-smokers represented smokers, in France in 2010 (Peretti-Watel et al., 2013). At the time, 60% of non-smokers agreed that smokers set a bad example for youth (*vs* 62% of vaccinated people who agreed that the unvaccinated set a bad example for youth); 48% stated that smokers are less accepted by others (*vs* 60% stating that unvaccinated people are less accepted by society); 77% of non-smokers considered smokers don't care enough about the health of people who breath their smoke (*vs* 65% of vaccinated people considering that unvaccinated people don't care enough of their relatives' health). Finally, 46% of non-smokers reported they could date a smoker, while in our study 49% of vaccinated people answered they could date someone unvaccinated (and, still in 2010, but this time in the United Kingdom (NSMC, 2012), 43% of people would date someone with a mental illness). Thus, in

terms of prevalence of agreement with pejorative statement, at least in France, the public stigma on unvaccinated people in 2021 is very similar to the stigma on smokers measured in 2010. Of course, as stated above, the lack of data on self-perceived stigma among unvaccinated people is a critical limitation. However, a recent study pointed out how non-vaccinating Australian parents experienced stigmatization for refusing Covid-19 vaccination for their child, including labelling, stereotyping (being considered as "anti-vaxxers") and social "othering", and being "brushed off" as incompetent parents and discriminated against by medical professionals and other parents (Wiley et al., 2021). Moreover, regarding the French context, in a subsequent survey conducted among French adults, based on the same methodology (Ward et al., 2021), 36% of non-vaccinated people reported that their opinion on vaccination had been the source of tension with their family and friends, and among those who were currently employed 22% reported that they experienced such tensions in their workplace and feared losing their job.

Implications for Health Policy

Stigma is an issue for health policy for at least two reasons. Firstly, the deleterious consequences, and in particular the health impact, of stigmatization have been widely documented, particularly for people suffering from mental illness, HIV-positive people, obese people, cancer sufferers, but also smokers (Chapple et al., 2004 ; Stuber et al., 2008 ; Sikorski et al., 2011; Chambers et al., 2015; Pescosolido & Martins, 2015). For example, stigmatized people may see their well-being and mental health affected (especially if they internalize the stigma), or show less use of the healthcare system, in particular forgoing care to avoid stigmatizing reactions (and it is not uncommon for public authorities to launch campaigns to combat the stigmatization associated with a particular disability or pathology). Regarding non-vaccinated people, foregoing health care may have been fuelled by media statements by

health professionals calling for access to critical care for non-vaccinated people to be restricted (COSV, 2022).

In the case of people who refused the Covid-19 vaccine, on the other hand, these findings have not yet been established. However, in the Australian study quoted previously, non-vaccinating parents reported experiences of stigmatization leading to relationship loss, social isolation, status loss, as well as psychological effects, which come on top of financial effects from policies which disadvantaged their children and diminished early childhood educational opportunities (Wiley et al., 2021). Of course, refusing Covid vaccination is quite different from the conditions we typically associate with stigma, including smoking, especially since this stigmatization only lasted a few months, thus its consequences in terms of well-being loss or self-stigma should not be overestimated.

Secondly, the stigmatization of a category of people can be a preventive tool, in the same way as information and awareness campaigns. Such use of stigma has already taken place, particularly in the case of smoking. In the 2000s, the World Health Organization promoted a strategy of 'denormalisation' of smoking, aiming at changing norms toward it in order to make it less acceptable (Bell et al., 2010), and it fuelled a debate among public health experts and social scientists about whether or not stigma could be an acceptable instrument of public health policy, especially concerning tobacco control policies (Bayer & Stuber, 2006; Bayer, 2008; Burris, 2008; Bell et al., 2010). While raising the price of cigarettes increases the financial cost of smoking for the smoker, a stigmatization strategy is more broadly aimed at increasing the "social cost" of smoking, as smokers may, for example, have difficulty finding a job, housing or an affective partner (Stuber et al., 2008). For the proponents of this policy, this stigmatization was acceptable, as smoking is a "reversible" stigma, since the aim was precisely to encourage smokers to quit, and thus "stop being social pariahs", to quote the explicit slogan of an Australian preventive message.

The same argument may apply to vaccination refusal. This political use of stigma has been criticized, not only because of the deleterious consequences already mentioned, but also because it can prove counter-productive, particularly if the stigma becomes a claimed identity resource for some of those targeted. Indeed, any deviant group facing a strongly negative social reaction may resist the stigma by becoming more deviant, therefore entering a process of 'deviance amplification' (Wilkins, 1964). For example, perceived moral reproach may fuel vaccine hesitancy among unvaccinated people (Rosenfeld & Tomiyama, 2022). Psychologists have described a similar process, when coercive measures induce 'reactance', a feeling of anger that elicits the motivation to reassert the constricted freedom (Brehm, 1966). For example, recent findings suggest that making a COVID-19 vaccine mandatory can induce detrimental effects, such as decreasing the intention to vaccinate against influenza and adhere to COVID-19 related protective measures (Sprengholz et al., 2022). Similarly, stigmatization experienced by Australian non-vaccinating parents often increased their steadfastness in refusing vaccination (Wiley et al., 2021).

Regarding the French Covid-19 vaccination campaign, the government didn't explicitly call for the use of stigma, but in addition to the health pass, which, as we have seen, constitutes a form of structural stigma, the media abundantly relayed statements by members of the government and the President of the Republic, which were highly pejorative towards non-vaccinators[2]. This raises the question of how effective this policy has been, without of course being able to distinguish between the impact of the health pass and the possible contribution of the stigmatization of non-vaccinated people. Already in the autumn of 2021, the French had divided opinions on the health pass, with a majority of favourable opinions:

[2] For example: the government spokesman talked about the "social fracture" between vaccinated and unvaccinated people (7/2/2021); the Minister of Youth stated that people who refused the vaccine were "pro-virus" (12/18/2021); the Minister of Health described unvaccinated people as suffering from a kind of paranoid delirium (12/29/2021); while the President Macron condemned the "irresponsibility" and "selfishness" of those who refuse the vaccine (7/25/2021), and declared latter that his Covid strategy was to "piss off the unvaccinated, to the bitter end", and that "an irresponsible person is no longer a citizen" (1/4/2022).

58% of French people were in favour of the health pass, and 37% unfavourable (and incidentally at the time 61% were in favour of mandatory vaccination for adults) (Ward et al., 2021). In the months following the announcement of the health pass (months during which the non-vaccinated were portrayed pejoratively in the media) Covid-19 vaccination coverage improved significantly (the share of the eligible population vaccinated with two doses increased from 49% on 12 July to 89% by mid-December 2021), but vaccine hesitancy persisted: In fall 2021, 42% of vaccinated people still had doubts about the vaccine at the time of their first dose, and the share of vaccinated people with doubts about the vaccine increased from 44% to 61% after the health pass was implemented (Ward et al., 2022). And two years later, in summer 2023, among adults who have been vaccinated against Covid-19, 46% still have doubts about the vaccine they received (Peretti-Watel et al., 2023).

Sociodemographics and Stigma

In bivariate analysis participants gathered in the 'No stigma' cluster were the least educated, while the more educated ones were slightly overrepresented among those who endorsed stigmatizing attitudes, and it was not a significant covariate in both logistic regressions. Such results contrast with several previous studies which found that more educated people were less prone to stigmatisation, for various contexts and sources of stigma (HIV-AIDS in China (Chen et al., 2005), dementia in Australia (Philipson et al., 2012), cigarette smoking in France (Peretti-Watel et al., 2014), or diabetes in Singapore (Subramaniam et al., 2021). These results echo the interpretation of stigmatization as rooted in ignorance (Pescosolido & Martin, 2015), and the traditional view is that education changes people and makes them more tolerant (Adorno et al., 1950, and for recent evidence from France see Mayer et al., 2020). We will re-discuss this result later, but first it is noteworthy that both a higher educational level and a higher household income were associated with stigmatizing attitudes toward unvaccinated

people. In other words, not only participants who refused the vaccine had a lower socioeconomic status (SES) than 'compliant' ones (in terms of household income and educational level), but among the latter ones a high SES was associated with stigmatizing attitudes toward unvaccinated people: thus in this case potential 'stigmatizers' had a much higher SES than the potentially 'stigmatized' ones. Notably, SES is a good proxy for power: in Goffman's perspective, stigmatization still remains an uncertain outcome each time potential stigmatizers and stigmatized interact with each other, but according to Link & Phelan (2001) stigmatization is more likely to occur if the latter has more power than the former. How non-vaccinated people actually manage their 'spoiled identity' during concrete interactions with vaccinated people was a topic beyond the scope of the present paper, but it certainly deserves some investigation using qualitative methods.

Regarding age, older people to be more prone to stigmatizing non-vaccinated people. Our results support this assumption: being aged 65 and over was a very strong factor of endorsing stigmatizing attitudes, and it was the strongest factor of *full stigma* vs *moral condemnation only*. Older people may have both symbolic motives (they are usually more conservative, see Peretti-Watel et al., 2014) and instrumental motives (they are more exposed to severe forms of Covid-19 infection) to do so. Moreover, this relationship remained significant in multivariable analyses, even after adjustments on indicators designed to measure these motives, namely fear of infection and civic motives for vaccination. Fear of infection probably captures only partially instrumental motives for stigmatization (older people may more specifically feared hospitalization, especially in a care intensive unit, or they may fear infection for their own parents), as well as civic motives for vaccination may not properly address older people's propensity to condemn deviant behaviours.

Instrumental and Symbolic Motives

As one could have expected, fear of infection and civic vaccination were positively correlated to stigmatization of unvaccinated people, but only fear of infection was associated with the profile characterized by avoidance of unvaccinated people (when comparing *full stigma* and *moral condemnation only*). Similarly, Bor et al. (2023) found that exclusionary attitudes towards unvaccinated people were intertwined with a fear of infection.

'Compliant' people who have faith in science and those who reject political extremes were also more likely to stigmatize the unvaccinated ones: these indicators were very strong factors in the first model (*moral condemnation only & full stigma vs no stigma & stigma rejection*), and either positive or strong factors in the second one. More precisely, feeling far away from either far right or far left was associated with endorsing stigmatizing attitudes, but only rejecting the far left was associated to *full stigma* in the second logistic model. One plausible interpretation is that people who have faith in science and reject political extremism may condemn and avoid unvaccinated people because they view them as political extremists and 'anti-science'. In this case, faith in science and rejection of political extremes could be considered as symbolic motives for stigmatizing unvaccinated people. Such interpretation suggests another aspect of the current politicization of public health issues: just as political attitudes affect perceptions of Covid-19 vaccination (Ward et al., 2020), they may also affect the perceptions of people who refused the shot.

Moreover, a closer look at the selection process of significant covariates within the first logistic model showed that the strength of the positive relationship between a high educational level and stigmatizing attitudes toward unvaccinated people decreased after adjustments on other selected factors, and especially attitudes toward science and politics, and additional bivariate analyses found that more educated people were more likely to express faith in science and to reject political extremes. Against the traditional view that education makes people more tolerant, an alternative view argues that education socializes people to the

'official culture' (Phelan et al., 1995). The latter view provides an interpretation for our results: as an educated person usually endorses more strongly the current 'mainstream culture', including some key aspects such as faith in science and rejection of political extremes, she/he would also be more likely to blame unvaccinated people, because she/he may view them as anti-science and politically extreme.

The Unvaccinated Ones: New Folk Devils?

In epidemic times, human societies have displayed a strong tendency to look for scapegoats, usually marginal groups or outsiders (Rosenberg, 1988; Douglas, 1992; Evans, 1992). The Covid-19 pandemic is no exception. At the early stage of the pandemic, Wuhan and Hubei residents were ostracized by non-Hubei Chinese, then mainland Chinese were ostracized by some Hong Kong and Taiwan residents, before overseas Chinese were ostracized by Westerners (Xu et al., 2021). In France, in 2020, before the first lockdown Chinese migrants and their descendants were briefly confronted tby stigmatizing attitudes because the virus came from China (Wang et al., 2021). During the first lockdown the working-class in France was blamed for its alleged lack of compliance to preventive measures (Noûs, 2019), then in the summer the mainstream media and some public health experts blamed young adults for the second wave of Covid-19 (Knight et al., 2020), before those who refused the vaccine were targeted in 2021. The way they have been described in the media and public discourses strongly echoed the famous sentence written by Stanley Cohen to introduce the notion of "folk devils": "*A* (…) *group of persons emerges to become defined as a threat to societal values and interests; its nature is presented in a stylized and stereotypical fashion by the mass media; the moral barricades are manned by editors, bishops, politicians and other right-thinking people; socially accredited experts pronounce their diagnoses and solutions* (…)." (Cohen, 1972, p 9).

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According to Cohen, during troubled, difficult and threatening times, designating and scapegoating "folk devils" help clarifying the moral boundaries of the society and strengthening its cohesion, by making a clear division between "Us", descent and respectable folks, and stereotyped "Them", imparted with exclusively negative characteristics, and seen as harmful or even responsible for a major threat to the whole society (Cohen, 1972; Goode & Ben-Yehuda, 1994). In pandemic times, those who do not comply with preventive measures are likely to be considered as a threat to both public health and moral order: in Canadian newspaper they have been shamed and stigmatized as "covidiots" (Capurro et al., 2022). But obviously this is also true for people who refuse the shot. One could argue that they undermine the management of the pandemic and delay its end, and could claim they are defectors, or even traitors, in the war against the virus. Beyond the immediate health threat, vaccination can be considered as a moral obligation which is part of the social contract that binds us together, and from such perspective unvaccinated people are "free riders" who are either unable or unwilling to live in society. Previous experimental studies found that vaccinated individuals were prone to react negatively against the unvaccinated ones, especially if they embrace this perspective (Korn et al., 2020; Weisel, 2021; Bor et al., 2023).

But the French society was already navigating through troubled times and major threats before the pandemic, as illustrated by the 'Yellow Jackets' protests in 2018-2019. For the dominant culture, these threats included economic recession, the rejection of mainstream science, the ubiquity of so-called "fake news" and the rise of extreme political parties, illustrated by frequent violent demonstrations involving what the media called "ultra-left" activists, and these threats did not vanish with the pandemic, on the contrary. Our results echoed these perceived threats, as the typical stigmatizers of unvaccinated people were well-educated and wealthy people wo have faith in science, who reject political extremism and especially the Far Left, and who saw unvaccinated people as selfish, uncivil, ill-informed

'conspiracy theorists' that preclude economic recovery. Thus the magnitude of public stigma toward unvaccinated people may be at least partially explained by the way these new 'folk devils' have been framed by the media and public discourses, that touched something of a responsive chord in the general public. For instance, antivaxxers had already largely been presented in the French mainstream media as the epitome of postmodern threats against science and reason in the age of the internet (Ward et al., 2019).

Stigma and Proximity to Unvaccinated People

Finally, in the first logistic model the main determinant of endorsing stigmatizing attitudes toward unvaccinated people was the timing of vaccination: among 'compliant' people, those who were 'closer' to unvaccinated people, because they were still unvaccinated at the time of the survey or a few months before, were much less likely to endorse stigmatizing attitudes toward adults who refused the Covid-19 vaccine. It is not very surprising, despite the old adage "There is no pious like the new converted". But, precisely, late vaccination was not a conversion, and the label 'compliant' may be less suitable for people who were not yet vaccinated at the time of the survey but proclaimed their intention to do it, or even for people who took their first dose in July or after. Not only these people were more prone to either ignore or reject pejorative statements toward unvaccinated people, but many of them did finally agree to get vaccinated because they needed the 'health pass', and they had still mixed or negative feelings toward Covid-19 vaccination, including doubts, regrets or even anger (Ward et al., 2022).

Conclusion

In this exploratory study conducted among French adults in Fall 2021, we found some evidence of stigmatization toward people who refused the vaccine against COVID-19, as

several pejorative statements were supported by a majority of respondents, and a significant minority also endorsed social rejection attitudes. Such public stigma was fueled by both instrumental and symbolic motives, portraying unvaccinated people as egoistic free riders, ill-informed or, even worse, conspiracy theorists. Thus unvaccinated people may appear as a new kind of "folk devils," imparted with exclusively negative characteristics that also refer to perceived societal threats pre-existing to the pandemic, such as distrust in science and political extremism.

Moreover, such public stigma was positively correlated to SES, which means that, in this case, stigmatization was more likely to occur each time potential stigmatizers and stigmatized interact with each other. Nevertheless, stigmatizing politics, aiming at enrolling the population to exert social pressure on the unvaccinated ones in order to make them change their mind, may not be so efficient, as a strong minority may refuse to exert such pressure (in our study, the *No stigma* and *stigma rejection* gathered 42% of participants). It may even backfire by reinforcing discontent and distrust toward the authorities, as well as hesitancy toward the Covid-19 vaccine and subsequent injections. In the long term, it may also increase divisions and tensions within our societies (Bor et al., 2023).

■■■

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Table 1 Characteristics of Participants According to Their Attitude toward Covid-19 Vaccination (France, SLAVACO 2021, N=1,742).

	'Compliant'	Vaccine refusal
	column %	
Gender:		
men	48%	46%
women	52%	54% ns
Age:		
18-34	23%	37%
35-49	23%	31%
50-64	25%	22%
≥65	29%	10% ***
Mean age	55 years old	46 y.o. ***

Educational attainment:		
<High School	37%	48%
High School / undergraduate	40%	40%
≥ bachelor degree	23%	12% ***
Household monthly income:		
<2000€	33%	51%
2000-4000	53%	45%
>4000	12%	4% ***
Fear of infection [0-10]:		
Mean score	4.4	3.0 ***
Attitude toward science:		
science does humanity more good than harm	49%	26% ***
Political orientation:		
away from far right	29%	18%
away from far left	33%	21%
other	38%	61% ***
Timing of vaccination:		
-first dose before July	70%	—
-first dose in July or after	23%	
-not yet vaccinated	7%	
Civic motives for vaccination:		
-mainly for protecting fragile people	28%	—
-mainly for protecting relatives	60%	

***, ns: respectively statistically significant at $p<0.001$, χ^2 independence test (F statistic for age and fear of infection).

Table 2 Attitudes of 'Compliant' people toward the Unvaccinated, Cluster Analysis (France, SLAVACO 2021, N=1,742).

	Moral condemnation only: 32%	Full stigma: 26%	No stigma: 26%	Stigma rejection: 16%
	% agree [a]	% agree [a]	% no firm opinion [b]	% disagree [c]
they don't care enough of their relatives' health	94%	100%	62%	85%
they set a bad example for youth	88%	98%	62%	84%
they lack civility	93%	99%	72%	91%
they are less accepted by society	57%	85%	58%	agree: 63%
they are selfish	87%	99%	70%	92%
they are ill-informed	68%	77%	58%	62%
I could date one of them	58%	disagree: 59%	agree: 55%	agree: 86%
they preclude economic recovery	60%	91%	65%	85%
they are 'conspiracy theorists'	no firm opinion: 46%	80%	61%	94%
I avoid contact with them	disagree: 46%	67%	disagree: 51%	88%
Mean score of public stigma [-10;+10]	+4.6	+8.1	-0.6	-6.9

a: % displayed in this column are column % aggregating "strongly agree" and "agree" responses, except if specified otherwise in a given box.
b: idem for "neither agree nor disagree", "don't know" and "don't want to answer" responses.
c: idem for "strongly disagree" and "disagree" responses.
For each row variable, the ternary distribution (agree/no firm opinion/disagree) significantly differed at $p<0.001$ across the four clusters (χ^2 independence test), as well as the mean for the score of public stigma (F statistic).

Table 3 Factors associated with the clusters describing attitudes of 'compliant' people toward the unvaccinated ones (France, SLAVACO 2021, N=1,742).

	Moral condemnation only: 32%	Full stigma 26%	No stigma 26%	Stigma rejection 16%
		Column %		
Gender:				
Men	46%	52%	48%	44%
Women	54%	48%	52%	56% ns
Age:				
18-34	21%	12%	28%	37%
35-49	22%	17%	31%	23%
50-64	28%	22%	24%	23%
≥65	29%	49%	17%	17%***
Average age	53.7	60.3	47.4	45.8***
Educational attainment:				
<High School	34%	38%	43%	33%
High School / undergraduate	41%	35%	43%	44%
≥ bachelor degree	25%	27%	14%	23%***
Household monthly income:				
<2000€	30%	24%	41%	40%
2000-4000	56%	55%	51%	51%
>4000	14%	21%	8%	9%***
Fear of infection [0-10]:				
Mean score	4.4	4.7	4.7	3.6***
Attitude toward science:				
science does humanity more good than harm	54%	63%	30%	46%***
Political orientation:				
away from far right	41%	32%	56%	52%
away from far left	36%	39%	26%	26%
other	23%	29%	18%	22%***
Timing of vaccination:				
-first dose before July	80%	88%	56%	40%
-first dose in July or after	16%	9%	32%	47%
-not yet vaccinated	4%	3%	12%	13% ***
Motives for vaccination:				
-mainly for protecting fragile people	31%	37%	26%	13% ***
-mainly for protecting relatives	68%	75%	52%	30% ***

***, ns: respectively statistically significant at $p<0.001$, χ^2 independence test (F statistic for fear of infection).

Table 4 Factors associated with the clusters describing attitudes of 'compliant' people toward the unvaccinated ones, logistic regressions (France, SLAVACO 2021, N=1,742).

	Moral condemnation only & Full stigma vs No stigma & Stigma rejection					*Full stigma vs Moral condemnation only*				
	OR adj. [95% CI]	Partial R^2	Importance weights*	Evidence	Rank	OR adj. [95% CI]	Partial R^2	Importance weights*	Evidence	Rank
Age: (ref. 18-34)										
35-49	0.85 [0.61;1.17]	0.01	0.99	Very strong	6	1.38 [0.89;2.14]	0.05	1	Very strong	1
50-64	1.00 [0.72;1.38]					1.47 [0.97;2.21]				
≥65	1.58 [1.12;2.21]					2.91 [1.98;4.27]				
Household monthly income: (ref. <2000€)										
2000-4000	1.20 [0.94;1.53]	0.01	0.77	Positive	8	NS	—	—	—	—
>4000	1.61 [1.10;2.36]									
Fear of infection [0-10]: Mean score	1.05 [1.01;1.09]	0.00	0.85	Positive	7	1.05 [1.00;1.10]	0.01	0.78	Positive	4
Attitude toward science: (ref. other response)										
Science does humanity more good than harm	1.99 [1.59;2.49]	0.03	1	Very strong	3	1.46 [1.12;1.90]	0.01	0.95	Strong	2
Political orientation: (ref. other)										
away from far right	1.99 [1.55;2.57]	0.03	0.99	Very strong	4	1.27 [0.94;1.71]	0.01	0.81	Positive	3
away from far left	1.53 [1.15;2.02]					1.55 [1.11;2.15]				
Timing of vaccination: (ref. first dose before July)										
-first dose in July or after	0.34 [0.24;0.55]	0.06	1	Very strong	1	NS	—	—	—	—
-not yet vaccinated	0.27 [0.17;0.44]									
Motives for vaccination:										
-mainly for protecting fragile people **	1.62 [1.26;2.08]	0.01	0.99	Very strong	5	NS	—	—	—	—
-mainly for protecting relatives **	2.52 [2.01;3.16]	0.05	1	Very strong	2	NS	—	—	—	—

OR adj. [95% CI]: adjusted odds ratio with 95% confidence interval.
NS: variable not selected in the model. Gender and educational level were not selected in both models.
*: According to Viallefont's classification [0–0.5]: no evidence; [0.5–0.75]: weak evidence; [0.75–0.90]: positive evidence; [0.95–0.99]: strong evidence; [0.99–1]: very strong evidence.
**: ref. not ranking this motive among the main three.

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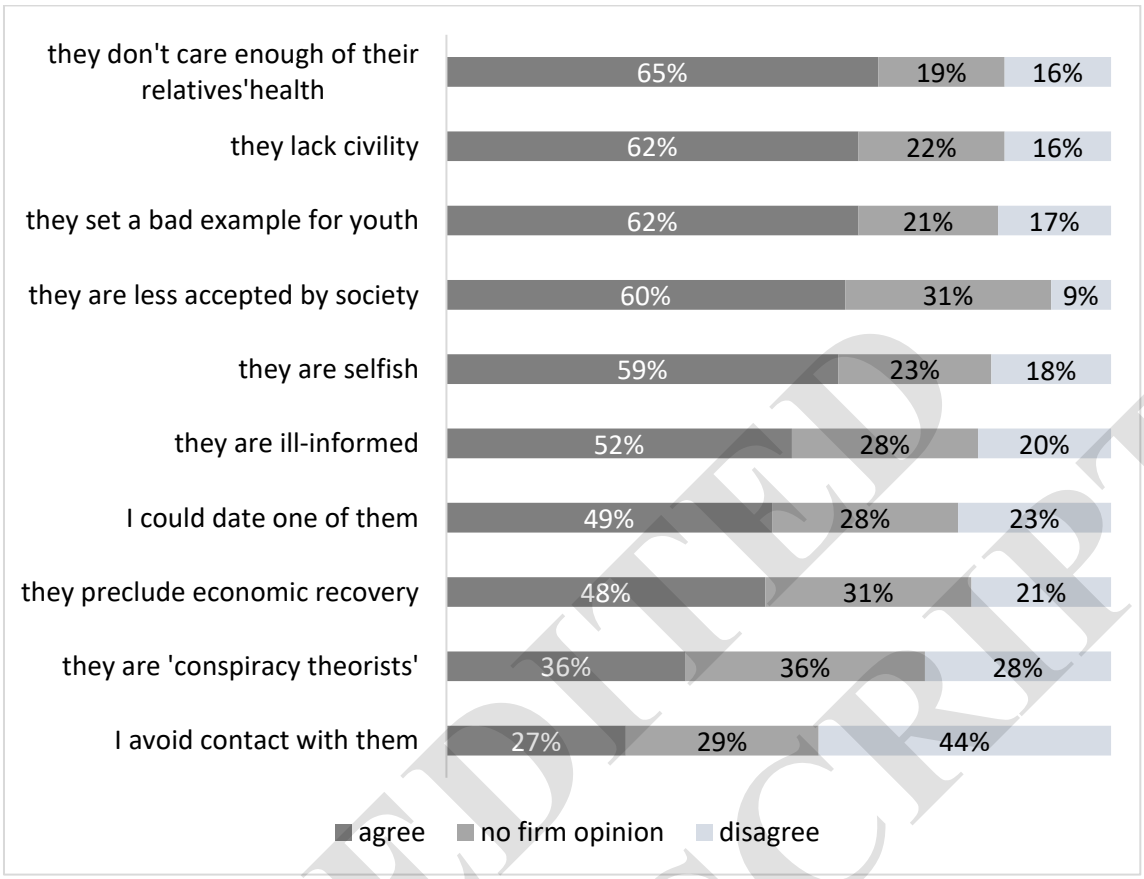
Figure 1 Attitudes of 'compliant' people toward the unvaccinated ones (France, SLAVACO 2021, N=1,742).



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