Prioritization of the COVID-19 Health Care

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Abstract

The current COVID-19 situation has caused a lot of public unrest. There are many questions and discussions about the distribution of COVID-19 care. Governments, supported by health experts and ethicists, have released protocols on the prioritization of ICU beds and COVID-19 vaccines, but public support on this is still relatively unknown. Various studies have already shown what kind of people are considered more deserving with regard to regular health (Jensen & Petersen, 2017; Kloosterman, 2011; van der Aa et al., 2017). Still, to this day, there is no information on the deservingness of COVID-19-related health care. This study used a conjoint analysis to diversify four theoretically relevant attributes of hypothetical healthcare seekers and compares the explanatory power of the different attributes. Age shows some mixed results, while younger people are prioritized over older people for the ICU bed, the middle generation is given some priority for the vaccines. Being of an unhealthy weight or disobeying social distance measures reduces the chance of being prioritized for health care. On the other hand, having a critical job increases the chances of being supported in receiving the ICU bed or vaccine. These results indicate that control and reciprocity are important deservingness criteria influencing public opinion. The influence of respondent characteristics is also measured. A person's self-assessed health exhibits some interesting self-interest effects. The influence of ideology is only visible when the respondents compare the different professions and the obedience of the social measures of distance. In these cases, the less educated and right-wing voters are more strict on those with unfavorable traits.

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1. Introduction

On March 11, 2020, the World Health Organization (WHO) officially declared COVID-19 to be a pandemic, leading to many sick and dead. Since its initial detection in January 2020, vaccines and medication against COVID-19 have been sought after worldwide; yet, up to this moment, none are available. Studies so far suggest that in the absence of vaccines or medication, 2.3 percent of infected people die from the virus (Vital Surveillances, 2020). This percentage led to overcrowded hospitals, which was too difficult for some countries to keep up with. In the Netherlands, in order to relieve hospital capacity, patients were transferred, if possible, to nursing wards that were set up outside the hospital, in nursing homes, hotels, and primary care facilities (Gerling, 2020). Agreements were made with Germany about the use of ICU beds for Dutch patients (Dumke, 2020). In other European countries like Italy, the hospitals became so overcrowded that the doctors even had to choose who to give the treatment to (Zoia et al., 2020). In the Netherlands, the situation was less severe, but the hospitals did postpone regular treatment and politicians and their supporting health experts were concerned that intensive care units would be overcrowded, as well (Nederlandse Vereniging voor Intensive Care, 2020; Nederlandse Zorgautoriteit, 2020). The Federation of Medical Specialists (FMS) and the Federation of Physicians (KNMG) proposed protocols in case intensive care units (ICU) would be flooded during a possible second wave (FMS & KNMG, 2020). The protocol describes how doctors should decide who will be and who will not be given access to an ICU if the pressure on ICUs increases to such an extent that shortages would arise in a possible next wave of the COVID-19 pandemic.

Parallel to considerations made over who should be prioritized for ICU beds, a protocol for the distribution of a COVID-19 vaccine is also needed. If all goes well, the distribution of a safe and effective vaccine against COVID-19 will start in the beginning of 2021 in the Netherlands (Rijksoverheid, 2020b). In the United Kingdom, they have already started with vaccinations in the beginning of December 2020 (Chappell, 2020). Unfortunately, new insights already reveal that with a limited initial availability of a COVID-19 vaccine, there will not be enough doses to vaccinate everyone right away. Therefore, choices need to be made about which groups will receive early access to the vaccination (World Health Organization, 2020). Among civilians, the question arises who should be on the front line once the first batch of vaccines arrives (Subbaraman, 2020).

To answer the questions about the priority of the COVID-19 health care, the FMS and KNMG and the government made triage criteria for health care access (FMS & KNMG, 2020;

Rijksoverheid, 2020b). These criteria are based on medical ethical perspectives and therefore look at the risk or probability of someone getting the disease and on the expectation of someone recovering from the disease. To legitimize these ethical standards, it is important to consider public opinion, too. The experiences and values of civilians are of importance to make policies that enjoy the support of the public. Establishing a successful allocation program requires trust and collaboration from the public, both of which are more likely if the development of the protocol has been inclusive and transparent (Biddison et al., 2019; Silva et al., 2012). This could reduce the severity of the crisis situation. In fact, the protocol of the FMS and KNMG has sparked a huge debate among the citizens about access to health care and whether the criteria of the FMS and KNMG are fair. Newspapers in the Netherlands gathered opinions and showed that, for example, many people think that it is unfair to refuse someone based on their age (Nu.nl, 2020; Versteeg, 2020). The same discussion occurs around the distribution of the potential vaccines. An article of a Belgian newspaper noted that in case a vaccine is found, priority groups should be ranked in order of who should get the vaccine first (De Standaard, 2020). People make a distinction in this discussion between those that are more at risk when getting infected, chiefly the elderly, and those that have more social contacts and thus a higher chance of spreading the disease, generally the young (De Standaard, 2020; Visser, 2020).

This study focuses on the Netherlands, not only because of the differing opinions, but also as a result of the exclusive Dutch COVID-19 measures. While almost all European countries were in a lockdown, the Dutch government chose to implement a self-proclaimed "intelligent lockdown", whereby the individual responsibility of the citizens is determined (de Haas et al., 2020; Reeskens et al., 2020). In addition, the Dutch culture is also characterized by their vision of illness and the end of life (Cohen et al., 2014) expressing their western individualistic thinking (Buiting et al., 2008).

To estimate the opinion of the public, this study will look at deservingness criteria of applied to COVID-19 ICU treatment and/or vaccination. The question of who should receive the health care, and why that person should receive it, is examined by measuring relevant characteristics of the person in need of health care. Since the discussion among the public does not only concern the medical considerations used by the FMS and KNMG, but this study also addresses the factors that can influence a person's received solidarity, namely age, weight, occupation, and obedience of the social distance measures. These factors are operationalized to measure public opinion of deservingness and not the medical viewpoint.

Certainly, there have been previous studies with information on who should be supported in receiving health care in a normal situation (Jensen & Petersen, 2017; Kloosterman, 2011, 2015; van der Aa et al., 2017). These studies have shown that there are some differences in who is considered as more deserving of health care. An important measuring instrument of this deservingness is the CARIN template by van Oorschot (2000), which links the deservingness of someone to their control, attitude, reciprocity, identity and/or need. Using this template, research shows that people mainly show solidarity with groups with which they can identify themselves. They for example are more solidary with people who smoke if they smoke themselves (Kloosterman, 2011). Another important finding is that in health care, the need criteria seems quite important. In crisis situations such as COVID-19, however, all those requests for help have the same need because they have the same care demand. However, to date there is no information about these questions in a crisis situation.

To address this limitation, this research introduces an experimental design that identifies characteristics associated with those seeking health care that can elicit negative or positive responses. This experiment asks a population-based sample of Dutch citizens to choose between pairs of COVID-19 patients who need a bed in the ICU and to decide between pairs of persons requesting a COVID-19 vaccination. In each case a respondent receives personal details of two fictive persons. Rather than limiting this study to just one or two factors, this experiment makes it possible to diversify attributes at once and evaluate which attributes make a person more likely to receive treatment or vaccination.

2. Theoretical Background

This study uses the ethical considerations of the WHO as a basis to present the current allocation protocols of the FMS and KNMG (2020) FMS and KNMG (2020). Both the protocols regarding the distribution of the ICU beds and the COVID-19 vaccines are explained. The deservingness heuristic is explained to elaborate how public opinion on such priorities can be shaped. These public opinions are underpinned by characteristics of respondents.

2.1 WHO Ethics

In the Netherlands, everyone is obliged to have health insurance, with a few special exceptions. In addition, the Dutch government has many health care welfare policies to provide this health insurance for those who cannot afford it, for example by subsidizing them (Rijksoverheid, 2020a; Wammes et al., 2019). Healthcare in the Netherlands is therefore

provided thanks to both reciprocity and solidarity (Ministry of Health Welfare and Sport, 2018). As a result of this insurance system, everyone is entitled to receive health care. There is therefore no distinction as to who could receive the necessary care. In case of life-threatening situations, everyone had the same access to an ICU bed and the government is obliged to provide adequate care.

During a pandemic, however, there are situations in which adequate health care is at risk (World Health Organization, 2020). In times of crisis like these, there is triage and the "first come, first served" principle is no longer appropriate or fair. Health resources are likely to be limited and priorities need to be set in those cases. The government must decide which persons deserve the care the most and which care is most important at that time (FMS & KNMG, 2020). These choices can be very difficult and must therefore be based on ethics to ensure that governments can fulfill their duty to provide the best possible health care for everyone. In addition to the idea of equal access to health care, the WHO has established a framework that provides guidelines for setting priorities for resource allocation in the event of scarcity. The ethical considerations in deciding who to prioritize are based on four principles: equality, best outcomes (utility), prioritize the worst off, prioritize those tasked with helping others (World Health Organization, 2020).

The principle of equality is already explained by the fact that everyone in the Netherlands should have equal access to health care. It emphasizes the idea that the interests of each person should count equally unless there are good reasons to justify the different prioritization of resources. Within a country, there should be no distinction between irrelevant characteristics of individuals, such as race, ethnicity, gender, or relegation when it comes to differential allocation of resources (Rijksoverheid, 2020c). It makes it appropriate to guide the allocation of scarce resources when the care seekers have similar clinical indicators and are expected to derive the same benefits (World Health Organization, 2020).

On the other hand, the best outcomes/utility principle justifies the allocation of resources based on the ability to do the best or minimize the most damage. E.g., by using available resources to save as many lives as possible (Ayer, 1972). It may be most appropriate to guide the allocation of scarce resources that provide significantly different benefits to different individuals (World Health Organization, 2020).

When the worst off are given priority, resources are allocated to those who have the greatest medical need or are most at risk. This principle is suitable for the allocation of

resources intended to protect people at risk, for example the elderly or people with serious illnesses (World Health Organization, 2020).

The last principle, giving priority to those who are tasked with helping others, justifies the prioritization of people who are able to save many other people, or who are at risk of getting sick through their participation in helping others (World Health Organization, 2020).

The ethical allocation principles are relevant at different stages of resource scarcity. For example, the principle of first come, first served (ethical value of equality) is more applicable in low scarcity than in greater scarcity. Therefore, an allocation scheme can be justified by a combination of several principles. Based on the principles, the World Health Organization (2020) gives primary priority to the following groups; those most at risk of becoming infected and seriously ill; those who, if vaccinated, would prevent the widest spread of the virus; those who have volunteered to participate in research aimed at developing the vaccine.

2.2 ICU beds

The allocation of ICU beds is based on this prioritization advice. In preparation for the possibility of a shortage of ICU beds, the FMS and KNMG (2020) have drawn up a protocol including prioritization advice. The protocol, based on the ethics of the World Health Organization (2020), describes how doctors should decide who should and who should not get an ICU bed when the pressure on the ICU increases to such an extent that shortages arise due to the COVID-19 pandemic. The protocol focuses on the question of how health care professionals can make responsible choices for patients requiring ICU admission when clinical parameters are no longer useful. In close consultation with medical ethicists and professors of (medical) ethics and philosophy, an ethical framework has been outlined with considerations for the almost impossible choices that would have to be made in the event of an absolute scarcity of ICU beds. The criteria of the FMS and KNMG are, summarized:

a) Applying (medical) exclusion criteria.
b) Priority for patients expected to require a relatively short ICU admission.
c) Priority for healthcare workers who have had frequent and risky contact with different patients and a national or regional scarcity of personal protective equipment has been identified.

d) Priority for younger generation patients: 0-20 years; 20-40 years; 40-60 years; 60-80 years and 80+ years.
e) If a) to d) are inconclusive: a random procedure (lottery or “first come, first served”).

If triage occurs during a pandemic, the criteria in the triage protocol should be applied equally to all patients, based on the principle of equality. This means that every patient who meets the criteria for admission to the ICU will be treated under the same conditions, regardless of whether the admission is the result of the pandemic or some other cause (such as a high-energy trauma). This means that the same criteria are used for COVID-19 patients as for patients with a different cause of the illness (non-COVID-19 patients) (FMS & KNMG, 2020).

In the first criterion, medical exclusion, there is no comparison between patients and each patient is assessed individually. The protocol uses different measures of a person's medical condition, such as life expectancy and the clinical frailty scale. The latter looks at the vulnerability of the patient, i.e., it measures whether the patient is able to perform daily activities. During triage, attention is paid to optimal use of ICU capacity and, in addition to survival, to the quality of life. When, despite this criterion, there is a shortage of ICU beds, a comparison between patients is made for the first time. In this phase, the comparison is still useful on medical grounds and based on the ethical principle. When it has been determined based on clinical expertise that patients differ by more than 20% from each other in survival rates with ICU treatment, the patient most likely to survive with ICU treatment has priority. This comparison only takes place between patients who register at the same time. Patients already in ICU are therefore not compared with other patients who have not yet been admitted in this triage and treatment should never be discontinued on this basis. In addition to the medical exclusion criteria, again on the basis of the utility principle, it is decided to give priority to patients for whom, as far as possible, it can be estimated that they need less long-term ICU care to survive. This means that patients who need a longer ICU admission receive a lower priority because they make relatively more use of the limited capacity (FMS & KNMG, 2020).

If no distinction can be made between patients in the comparison on medical grounds, triage takes place on the basis of non-medical considerations. Health workers are given priority, but only under two conditions. The employee must have had frequent and high-risk professional contact with various patients where they have been exposed to COVID-19; and at

the same time, there must be a national or regional scarcity of personal protective equipment[1]. Certainly, when there is a shortage of protective equipment, healthcare employees do have a greater chance of becoming infected in the current crisis situation through frequent and risky contact with different patients (Gezondheidsraad, 2009). They have had less or no chance of withdrawing from it. In addition, it is conceivable that it is important for health care workers to know that they will be treated if they meet the above conditions. This maintains the willingness of healthcare workers to accept unavoidable risk (FMS & KNMG, 2020).

In the context of intergenerational solidarity and survival, age is a relevant criterion on ethical grounds (Biddison et al., 2019). In this protocol, a person is classified into a generation based on age. This means that age is used relatively and that no absolute age limit applies as an exclusion criterion. The generations are classified as follows: 0-20 years, 20-40 years, 40-60 years, 60-80 years, and 80+ years. Since this criterion gives priority to the youngest generations, it represents the utility principle; the goal is to cause as little damage as possible. On the other hand, conditions for young people would have to be quite harsh for them to end up in ICU. The fair collection argument emphasizes this principle. This argument says that younger generations have a stronger moral claim to life-saving care than older generations, who have had many more years of life. In other words, it is fair to prioritize younger generations over older generations, because younger generations still have a long life ahead of them, while this holds true to a lesser degree for older generations (Biddison et al., 2019; Rivlin, 2000). Furthermore, it is not convincing that triage based on age would be discrimination, because in principle everyone goes through each of the different ages during their life. And so, everyone in their life has belonged to the younger generations. This distinguishes age from modifiable attributes, such as gender or religion. The principle of equality has therefore not been neglected. Generation as a criterion can be difficult for some people to accept, but alternatives such as direct lottery tickets or "first come, first served" are often more undesirable. The use of such random decisions may lead to the fact that, although relevant distinction could have been made between patients, there would, for example, be no room in the ICU if a child or young person is involved in a traffic accident and therefore needs ICU care (FMS & KNMG, 2020).

[1] The argument that health workers should be given priority because they must be deployed again as soon as possible does not hold up in the COVID-19 crisis. Care providers will have to convalesce for a long time after an ICU admission and will no longer be able to directly return to work.

However, if the previous criteria are inconclusive, a random procedure will be followed. In the event that patients apply sequentially, the procedure will be based on a "first come, first served" basis. If patients report at the same time, the procedure will be based on drawing lots. Letting chance strike is extremely painful, but it is justified when there is no longer a good argument for discrimination. In that case, all healthcare seekers will be treated equally. Everyone realizes that they are dealing with tragedy: not everyone can have a chance, and however the choice is made, people are left out. A coincidental procedure is only defensible if no other relevant distinction can be made between people and should therefore be postponed for as long as possible, making it the last step in this triage model (FMS & KNMG, 2020).

2.3 Vaccines

In addition to the discussion about ICU beds, there will also be a shortage of COVID-19 vaccines (Rijksoverheid, 2020b). At the end of 2020, several health councils issued guidelines regarding whom should receive the vaccine in the first instance. They indicated who would be part of the priority group. They are, unranked: persons whose state of health puts them at particular risk; health and long-term care workers; essential employees; persons over 60 years old (European Commission, 2020; Gezondheidsraad, 2020; National Academies, 2020; Persad et al., 2020). These guidelines are again based on the ethical principles of the WHO. They mainly focus on the principle of those who are more at risk and the highest utility principle for example, it has been decided to give preference to people over 60, as they are normally more at risk of becoming more severely sick in the COVID-19 context. Younger members of the population have a lower risk and therefore have a lower vaccine priority.

The prioritization of health care and essential workers is related to the principle of giving priority to those who have the task of helping others. Prioritizing the health worker would minimize the burden on the health system by minimizing workforce disruption, influenza-related absenteeism, the spread of disease from health workers to (vulnerable) patients and the broader health system (National Academies, 2020). Based on the available research data, the Health Council expects that vaccination of health care personnel will lead to less disease burden for patients (Gezondheidsraad, 2020). The experts also see a specific, professional responsibility of health workers in a pandemic to combat the risks of transmission of infection. An additional important consideration is guaranteeing the continuity of adequate care. After all, vaccination of health care personnel can also lead to a reduction in absenteeism (Gezondheidsraad, 2009). If there are enough vaccines, all health professionals

should receive them. If the provision of vaccines does not permit all-encompassing distribution, only those health care workers who are at risk of contamination or at risk of infecting those they care for should be vaccinated (National Academies, 2020).

In addition to these guidelines, it is recommended that if available vaccines are outnumbered by the amount of infections, there should be a lottery-based allocation among those who are most at risk. The WHO also recommends that in case of low scarcity, priority should be given to those conducting research to develop vaccines, therapies, or other critical resources, as they have also helped saving others through their participation. In those cases, it is not based on the ethical principle, but more on the idea of reciprocity. It is therefore not an absolute priority; it should not take precedence over someone who would be at risk if they would not receive the vaccine (National Academies, 2020; Persad et al., 2020).

Despite clear guidelines, there is still a huge debate as to whether these guidelines deliver the best results. There is a distinction between the strategy of flattening the curve and crushing the curve. The former avoids the worst consequences with many COVID-19 deaths, related to the ethical principle of prioritizing the worst. If the first doses of vaccine go to people over the age of sixty, more COVID-19 deaths are prevented than when the younger population receives those vaccines, because that age group is most at risk for a serious course of the disease. With the crushing of the curve, the number of infections is reduced as quickly as possible, in terms of the utility principle. In this case, priority should be given to people 20-49 years old. In those age groups, people come into contact with others more often (Gezondheidsraad, 2020). It is no coincidence that the virus also circulates most virulently among people in their twenties (De Smet, 2020). Vaccinating them would cut off the problem at the source. Finding the right order for vaccination will be a balancing act between medical and mental health. The psychological costs are greatest for young people. With the COVID-19 measures, they now feel less connected to others than the seniors. Older people are relatively less affected by the measures than young people. That does not mean that young people should receive the vaccines first, because measures may be more flexible for the population as a whole once the most vulnerable people are protected by vaccines (Eckert, 2020).

2.4 Public Opinions on ICU bed and Vaccines

These policies on the distribution of the ICU beds and vaccines have led to many debates and discussions among the public. During a pandemic it is important to make policies that are

responsive to the experiences and values of civilians and to take note of their opinions (Silva et al., 2012). Commonly, there are multiple reasons why the government should consult the public concerning the allocation of health care in a pandemic. Firstly, COVID-19 is an infection that transmits through the community, which makes it a disease involving the whole of society. Effective public health response thus depends on an engaged and informed public. Having transparent communication also makes it easier for the public to accept the situation (van der Zee, 2012). Secondly, given the effects of a pandemic on the health care systems and economy, the input of the public on the allocation of health care is needed to ensure the democratic accountability of the policy-makers (Frankish et al., 2002; Maloff et al., 2000). Furthermore, research showed that involvement of the public might improve the quality of decisions in health policy (Cox et al., 2009; Secko et al., 2009). At last, during a pandemic there might be a scarcity of resources which leads to the possibility of not everyone receiving the necessary treatment. In this case, the trust and support of civilians is integral to the decisions that have to be made and will make the response of the public timelier and more effective. Thus, policy-making that capitalizes on the experience and values of the public can be essential to build public confidence in political and social institutions in the face of a pandemic (Robert et al., 2020; Silva et al., 2012). Clear communication to the population based on the latest developments of the pandemic and risk communication is necessary to avoid panic (van der Zee, 2012).

This research analyzes the public opinion on the distribution of COVID-19 health care in the Netherlands. This results in two main research questions. Taking into consideration the information about the shortage of ICU beds, the first question in this research is: In case of a shortage of Intensive Care Unit (ICU) beds, which relevant social groups should be prioritized in getting access to an ICU bed according to public opinion? In addition, to contribute to the discussion about the vaccine distribution, the second central question is: In case of a new developed vaccination for COVID-19 with limited availability, which relevant social groups should have priority in getting vaccinated according to public opinion?

2.5 Deservingness Heuristics

While the protocols of health organizations and governments are focused on the risks and medical choices, this study goes beyond only medical vulnerability. It also focuses on personal characteristics of the respondents that could influence the public opinion of the deservingness of the care recipients.

To measure the deservingness of a social group, van Oorschot (2000) developed a framework with a series of deservingness criteria to give an insight of who should be entitled to support, and why. When someone scores high on a criterion - control, attitude, reciprocity, identity and need- that person is perceived as more deserving. The criterion control is about whether a person is considered personally responsible for their need (Jeene et al., 2014). Earlier research showed that people with an unhealthy lifestyle can count on less solidarity, they are perceived as less deserving. The opinion of the public was that their premium should be more than half higher (Kloosterman, 2011). Next, attitude is based on the idea of gratefulness and pleasantness (Cook, 1979). People who are compliant, likeable and conform to our standards are perceived as more deserving. The third criterion, reciprocity, says that those who are expected to contribute or who already have contributed are considered more deserving. The identity criterion assumes that people that we see as 'closer to us' are considered more deserving. People mainly show solidarity with groups to which they themselves belong. For example, non-smokers in particular believe that people who smoke should pay more premium (Kloosterman, 2011). Finally, the need criterion says that someone with a greater need for help is seen as more deserving. Scoring high on all the criteria leads to being considered more deserving, leading to a universal dimension of support (Coughlin, 1980; Laenen & Meuleman, 2017; van Oorschot & Roosma, 2017). This universal dimension of support supposes that the same deservingness ranking can be found in different countries, in which the elderly are seen as the most deserving social group, followed by respectively the sick, the poor, the unemployed and social assistance clients (Coughlin, 1980).

2.5.1. Relative Importance of the Criteria

Although this universal dimension of support has been suggested (Coughlin, 1980), it remains to be seen whether the same ranking regarding COVID-19 health care is applicable here. Reeskens and van der Meer (2017) already have shown that the idea of a universal rank order of deservingness no longer holds. They thereby suggest that the CARIN criteria are all expected to have different relative importance, as in some circumstances one criterion will outweigh the other. I.e., the question raises what criterion matters the most. The control and need criteria are expected to have the strongest impact, not only as they are most common in public debates (Versteeg, 2020), but also because of social shifts in the degree of individualization. In the Netherlands, the idea has become more prevalent that the individual is responsible for his or her own actions and should therefore also be willing to take more responsibility (Van Elteren, 1998).

This research uses these CARIN criteria as a basis for the attributes of the vignette experiment. However, it is difficult to link an attribute to each CARIN criterion. Interesting attributes relevant to COVID-19 are often related to more than one criterion. As a result, the need criterion, which has led to some strong results in other research (Jensen & Petersen, 2017; van der Aa et al., 2017), shows some discrepancy. In this experiment, it is assumed that everyone has the same care demand, that is, they ask for the same treatment. However, the need for help varies from person to person. For example, someone who works in health care would benefit more from receiving the COVID-19 vaccine (Gezondheidsraad, 2009). However, this has nothing to do with that person's deservingness. This study therefore opts to use the CARIN framework as a basis, but to also include the criteria of the medical professionals. Several attributes of people will be used to measure if they influence the deservingness of COVID-19 health care, namely: age, weight, obedience of the social distance measures and occupation. They will be elaborated upon later in the methods section.

2.5.2. Background characteristics

In addition to analyzing general public opinion, it is also interesting to investigate whether these opinions differ between different social groups. In social science research, two main forces are thought to influence these opinions, namely self-interest and ideology. Based on the identity principle, the public can feel connected to those relatively closely resembling themselves (De Coninck & Matthijs, 2020). The identity principle assumes that people we see as “closer to us” are considered to be more deserving (van Oorschot, 2000). Additionally, when someone prioritizes a person they are close to for COVID-19 health care, they indirectly prioritize themselves. In this study, a respondent's age, their health, and whether the respondent obeys the social measures of distance themselves could indicate this idea of self-interest, as these attributes also appear in the experiment [2]. For example, related to the case of this article, elderly people who choose to provide COVID-19-related health care to the elderly are implicitly choosing for themselves. So they choose out of self-interest when they prioritize someone their own age (Stephan & Stephan, 2017). The same idea of self-interest could appear in a person's health; giving priority to a person with the same level of health and with obedience to the measures of social distance; prioritize those who behave the same way (Jensen & Petersen, 2017; Lund et al., 2015).

[2] These attributes will be clarified in the methods section

A person's ideology influences the way they perceive situations and other persons (Arts & Gelissen, 2001; Gelissen, 2000; Stjernø, 2011), and therefore it is expected to influence the prioritization of the COVID-19 care seekers. The two personal characteristics that are relevant to this study and that bear a resemblance to ideology are a person's level of education and political preference (Stjernø, 2011). Research has shown that the higher educated often show more solidarity with other citizens (Gelissen, 2000). They tend to give more to the less well-endowed because they believe everyone should have the same opportunities. On the contrary, the less educated are often convinced that access to social services is related to a person's responsibility and past contribution (Meuleman et al., 2020). Because there are many differences in the education level of the Dutch (Centraal Bureau voor de Statistiek, 2018), a lot of variation is expected among the public. The same effect occurs with a person's political affiliation. If someone is more of a left-wing voter, he generally has more solidarity with the less fortunate and vice versa (Arts & Gelissen, 2001; Gelissen, 2000). A right-wing voter generally expects citizens to take their own responsibility for their actions and consequences. They will therefore be stricter with someone who does not adhere to social distance standards or has an unhealthy lifestyle. On the other hand, no specific effect is expected for left-wing voters. In general, they aim to ensure that every citizen receives the same support and do not normally consider someone's responsibility (Gelissen, 2000). A low-educated right-wing voter often shows less solidarity towards people with unfavorable characteristics. This research measures whether someone's opinion is influenced by ideology.

3. Experimental Design, Data Measurement, and Analysis

3.1 Experimental Design

A choice-based conjoint design is used to study the comprehensive view of citizens to whom they can prioritize the COVID-19 health care. Today in political science, cyclic analysis is not commonly used, but they are more common in marketing (Hainmueller et al., 2014; Raghavarao et al., 2010). In this experiment, respondents are asked to make decisions between pairs of care seekers for admission to an ICU bed or for a COVID-19 vaccination. The decision-making tasks are each introduced with a small introduction, in which the current COVID-19 situation and the associated question are explained.

The introductory text for the ICU beds question is as follows:

Early in the corona crisis, the government and experts were concerned that the intensive care unit would be inundated with COVID-19 patients. Although it has not yet been seen that the Intensive Care Unit would no longer be able to cope with the influx of COVID-19 patients, situations have nevertheless been considered about which patients should be given priority over ICU beds. Below are two descriptions of COVID-19 patients whose doctors estimate the probability of survival equally. Which of the two do you think should be given priority?

The vaccination question is introduced with the following text:

Currently, the pharmaceutical industry is hard at work developing a vaccine against COVID-19. Because the production of the vaccine is time-crusty on a large scale, it most likely will not be readily available to everyone. Below you will find two descriptions of persons who wish to be vaccinated. If the scenario is not publicly available, who do you think should be given priority in vaccination?

After these short introductions explaining the exercise, the respondents are presented with a screen with profiles of two care seekers with the attributes as shown in table 1. Each respondent evaluates per question (ICU / vaccination) one comparison between pairs of care seekers, both displayed on a new screen. The profiles randomly vary on four characteristics that are considered potentially influential. These attributes have been chosen to approximate the information available to WHO, KNMG and FMS, but also take into account the characteristics that may influence the opinion of the public.

3.1.1 Attributes

Age is related to the principle of reciprocity, those who are expected to contribute or who have already contributed are considered to be more deserved (van Oorschot, 2000). The older a person is, the more he has contributed to society. So, they have “earned” healthcare. It is therefore expected that someone of an older age would be given priority in the COVID-19 vaccination.

The first attribute, age, overlaps with the criteria of the medical protocols. As mentioned before, people of older age are in the risk group of COVID-19, so they are more in need of a vaccine against the disease. They therefore seem to benefit more from receiving the vaccine. Age is also related to the reciprocity principle, those who are expected to contribute or who have already contributed are considered to be more deserved (van Oorschot, 2000). The older a person is, the more he has contributed to society. So, they have “earned”

healthcare. For these reasons It is therefore expected that someone of an older age would be given priority in the COVID-19 vaccination.

However, considering the ICU beds, it is expected that in this crisis situation the younger people are perceived as more deserving for a bed. It is a common view that it is fairer to give priority to younger generation as they have a longer life ahead of them. A related impartiality argument is that if a person does not know which generation he would fall into, he would reasonably prefer relatively younger generations. Behind this "veil of ignorance" someone will attach the greatest importance to the greatest possible chance of a normal life length, and less importance to a slightly increased chance of a longer than normal life length (Biddison et al., 2019; Rawls, 1971; Rivlin, 2000). For the ICU beds, therefore, it is expected that the younger people are given priority.

Research has shown that someone who is overweight is more susceptible to COVID-19. That person has more chance of being hospitalized for being infected with the COVID-19 virus (Hamer et al., 2020; Magdy Beshbishy et al., 2020). Although unhealthy behavior is not always a conscious choice, people can often see obesity as someone's own fault. It could be attributed to an unhealthy lifestyle (Sanderson et al., 2009). Thus, an overweight person may have some control over the likelihood of getting sick. In times or scarcity this control can be seen as an unfavorable aspect of a person. But again, it also has to do with recovery from the disease. An overweight person normally takes longer to heal. Multiple elements may overlap, but all are expected to result in respondents rating overweight people as less deserving for COVID-19 health care.

The next personal characteristic that will be measured is whether someone has adhered to social distance measures. Someone who does not follow the measures has a lot of control over the risk of getting the disease. Discussion among the public has already shown that there is a lot of irritation towards people who do not follow the rules. Not only do they think it is someone's fault for getting sick, but they also blame the individuals for posing a risk to other people. Choosing your own pleasure and endangering others can be seen as a bad attitude (Nu.nl, 2020; Versteeg, 2020). This leads to the expectation that people who do not adhere to social distance measures will be considered less deserving of COVID-19 health care. This characteristic is expected to have the greatest impact on a person's earnings.

The occupation someone has says a lot about their reciprocity. There is a big difference between someone who helped manage the pandemic and someone in a regular job.

It has therefore been decided to use this as an indicator of the deservingness of COVID-19 health care. As the World Health Organization (2020) states, someone who contributed to the cure of the pandemic and thus scores higher on reciprocity, has earned their ICU bed or vaccination. The World Health Organization therefore considers them to be more deserving to health care. It is also related to the ethical principle that some medical professionals should be given priority. They are more at risk of getting infected and therefore need to be protected from this risk. In addition, health workers are needed during the pandemic to care for others. They cannot be missed and the absenteeism among them should therefore be as small as possible. These arguments are therefore expected to be prioritized by the public as well.

The attributes can each take multiple values. For example, age has three values ranging from 27 to 77 years old. For each profile, the values of each attributes are randomly assigned such that the profiles vary within and across the binary comparisons. In case both randomly assigned profiles were identical, the activity attribute was adjusted. Table 1 contains the full list of the values of the attributes. In total, there are forty-eight unique profiles.

This design has several advantages over prior experimental and observational approaches. As all the attributes are randomized, it is possible to identify the effect of each attribute on the probability of being prioritized in the health care. In addition, since all attributes are varied and their effects are measured on the same scale, the design is able to examine the relative importance of the attributes. For example, the effect of the age can be compared with the occupational activity. Finally, as there is also information about the lifestyle characteristics of the respondents, it can be measured whether the choices of the respondents are influenced by their age, self-assessed health, their behavior towards the COVID-19 social distance measurements, political preference, and educational attainment. These interactions provide opportunities to evaluate additional hypotheses.

3.3.2 Personal Characteristics

This research measures whether the effects of a person's weight, occupation or obedience of the social distance measures are influenced by the respondent's ideology. In order to adapt the age of the respondents to the distribution of the vignettes, this analysis considers three age levels. A distinction is made between the age of forty, between the ages of 40 and 60 and people aged 60 or older. These subgroups are the same as the generations used in the vignette experiment.

The health of the respondents is measured by a self-assessed health question. The respondents indicated how they perceive their health on a Likert scale of 1-5. In this analysis, a distinction is made between the respondents who consider themselves healthy and those who perceive their health as moderate or poor.

In the survey, respondents answered whether they adhered fully, partially or not to the social distance measures set at the time. In this analysis, a distinction is made between the respondents who comply fully with the rules and those who only partially or not at all.

Political preference and education level are interaction effects that are thought to indicate the influence of a person's ideology. In the survey, respondents rated their political preference on a Likert scale of 1 to 10. This analysis divided these scores into left-wing and right-wing voters.

The educational attainment of the respondents is specified by their highest level of education. A difference is made between higher and lower educated. The descriptive information about these respondents' characteristics is shown in appendix Table 1.

Table 1 Attributes for Health Care Seeker Profiles in Conjoint Experiment

Criterion	**Attribute**			
	Theoretically most favorable		**Theoretically least favorable**	
Age	27 years old	52 years old		77 years old
Weight	Healthy weight (BMI = 22)		Overweight (BMI = 31)	
Obedience of social distance measures	Went on vacation to Barcelona with negative travel advice		Canceled trip to Barcelona when negative travel advice was given	
Occupation (before retirement)	Nurse	Teacher	Administrative assistant	Unemployed

Note: This table illustrates the experimental design for the conjoint experiment.

3.2 Sample

The survey that the respondents filled in is part of the second wave of the EVS COVID-19 survey. The first wave of data collection of this survey took place in May 2020, and the second wave was planned for October 2020. For the first wave, approximately 1600

respondents were interviewed and are re-approached for the second wave of data collection. This second wave led to 1468 respondents. After removing the respondents that did not finish the vignette experiment, 1461 respondents remained. To adjust for the distribution of the Dutch population by gender, age, education and region, post-stratification weights were applied. During the panel recruitment, respondents who agreed to participate in the panel received a confirmation email and a letter with login code. With the provided login code, they could confirm their willingness to participate and immediately start the first questionnaire. For this experiment, supported by the Netherlands Organization for Scientific Research (NWO), approval from the Ethical Review Board of the School of Social and Behavioral Sciences of Tilburg University was given. In addition, the privacy of the respondents is guaranteed, and the data collection took place according to the rules of the GDPR

3.3 Analysis

The analysis was performed with R Studio. The statistical analysis shows the descriptive statistics of the variables. The mean scores of the variables are shown in Figure 1 in the appendix. The relative importance of the attributes is evaluated by a statistical approach by Hainmueller et al. (2014) estimating the mean marginal component effects (AMCEs). To perform this analysis, use was made of the cjoint package, which was specially developed for this type of analysis. The analysis shows the mean difference in the probability of priority for COVID-19 care. It compares two different attribute values with the other attributes averaged. Due to the random assignment of the attributes, the two attribute levels will have the same distribution as all other attributes, making it possible to make a simple comparison. Figure 2 shows the results for all respondents for the ICU bed question. For each attribute value, the dots indicate the point estimates, and the lines illustrate the 95% confidence intervals for the AMCE. The top row of the criteria indicates the reference categories. In this model, the care seeker's preference variable is reduced to sets of indicator variables for each level of each trait, while the reference categories are omitted. The full regression models are shown in the appendix.

4. Effects of Attributes on Prioritization of the ICU beds

Figure 1 shows the descriptive results of the vignette experiment regarding the ICU question. The probability of priority is displayed per attribute. Especially compliance with social distance measures and the occupation attributes show strong results. For example, if a person

violates social distance measures, in 65.6% (chisq = 296,518; p <0.001) of those cases, that person was not given ICU bed priority, and in the case of unemployment, the vignette had a only chance of 36. 9% (chisq = 95,019; p <0.001) of receiving access to the ICU.

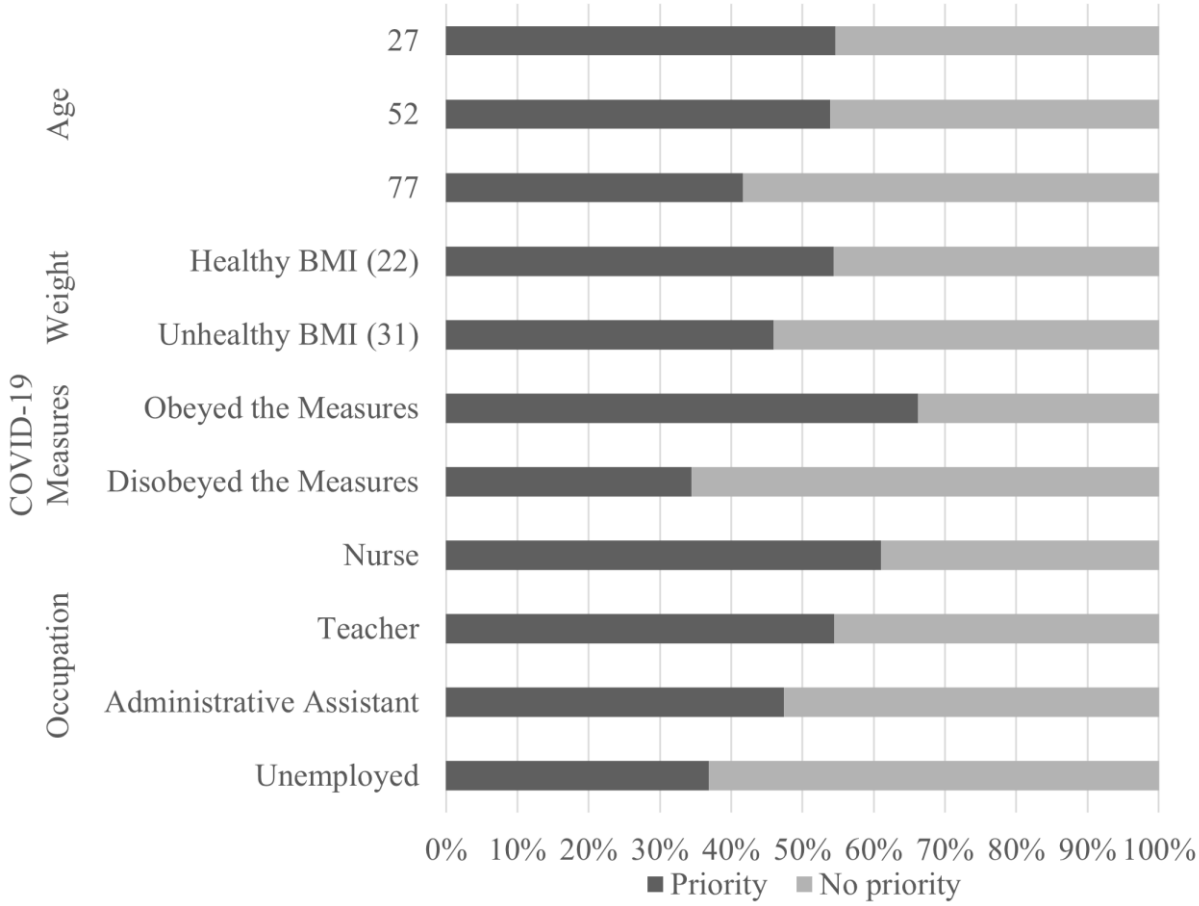

Figure 1 Preferred Priorities on an ICU bed

Note: Post-stratification weights are applied.

The regressions confirm the expectations that almost all unfavorable attributes are perceived as less deserving (Figure 2; Appendix Table 2). In fact, this effect is roughly monotonous. The less favorable the characteristic, the less support. This effect is very visual, especially in the occupancy attribute. Someone who is unemployed is 23.4 percent (SE = .03) less likely to have priority on an ICU bed, while this is 11.48 percent respectively for an administrative assistant (SE = .03). There is no significant effect for the teacher attribute. The non-meaning of the teacher attribute could be due to the idea that teachers and nurses are both seen as critical jobs during the pandemic. These jobs are one of the few jobs that could not work from home.

The attribute in which there are more differences between the results of the ICU and vaccination case is the age of the person. Compared to a person of 27 years old, elderly with the age of 77 years are 13.6 percent (SE = 0.03) less likely to have priority on an IC bed. For the age of fifty-two, there is no significant difference from baseline. So, there is no difference in prioritization between the younger and middle generation.

The respondents made a clear distinction between the fictitious persons who do or do not violate the social distance measures. Those who have violated social distance measures are considered less deserving. Someone who does not adhere to social distance measures sees a decrease in support by about 30 percentage points (IC: -31.5%, SE = 0.02). This is the most striking result for the IC beds. Of all characteristics, the respondents were strongest against people who did not follow the measures and thus had some control over their risk of becoming ill.

The other characteristic indicating control over the fictional persons also shows significant results. There is a penalty for obesity (-7.4%, SE = 0.02). As with the other unfavorable traits, overweight people are considered less deserving of health care.

4.1 Interactions with Respondent Characteristics

If attitudes are shaped by self-interest, it can be expected that Dutch people belonging to a different generation than the fictional person will be more against the care seeker. Figure 1 in the appendix shows the estimated marginal effect of the respondent's generation. The results are shown per subgroup in the figure. Collaborative models with interaction effects are used to estimate the statistical significance of the differential effects. There are indications that there is an interaction between the age of the respondent and that of their chosen care seeker. The results of the age interactions show a similar pattern to the benchmark model of the IC beds. The effects are approximately the same for all subgroups in this interaction. Despite the expectation that the respondents would choose their own generation, all respondents preferred the youngest over the oldest. As in the benchmark model, no meaningful results were found for persons aged 52 years.

The self-estimated health of the respondent shows some interesting results (Appendix Figure 3). The respondents who consider themselves healthy, gave penalty to someone who is overweight (-9.6%, SE = 0.02). On the contrary, those who consider themselves unhealthy do

not make a choice based on the weight characteristic. This can therefore be seen as an effect of self-interest.

Another test of self-interest examines whether the respondent has followed the measures of social distance himself, the results of this interaction effect are shown in figure 4

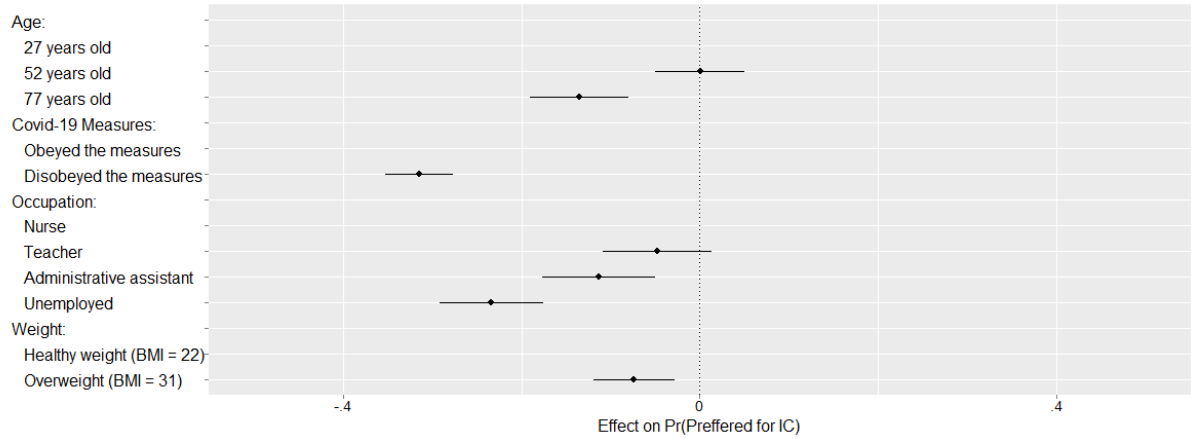

Figure 2. Effects of Health Care Seeker Attributes on Probability of Being Prioritized
Note: This graph shows estimates of the effects of the randomly assigned attribute values on the probability of being favored for an ICU bed. The estimates are based on the benchmark OLS model with clustered standard errors described in Appendix Table 10. Bars represent 95% confidence intervals. The attributes without points are the reference categories.

in the appendix. It was expected that the disobedient respondents would not rate the disobedient vignettes as underserved. However, as with the benchmark model, both subgroups sanction healthcare seekers who do not follow social distance measures. A disobedient person is 32.7% (SE = 0.04) more likely not to be prioritized for an ICU bed in case a disobedient response has made the decision. For an obedient respondent this is 34.5% (SE = 0.02). The difference between these groups is therefore quite small.

Figure 5 in the appendix shows whether left-wing voters and right-wing voters have different preferences for health care seekers. Again, compared to the benchmark models, the interaction produces the same pattern of results. However, in the occupation attribute, there is a substantial difference between the political movements. For left-wing voters, as expected, there is not much prioritization between the different occupations. Only the unemployed can count on less support (-18.8%, SE = 0.04). In contrast, the right-wing voters made a clear distinction between the different professions, leading to a significant result for all occupations. In this case, the respondent found the nurse the most deserving, followed by the teacher (-9.1% SE = 0.03), the administrative assistant (-17.5%, SE = 0.04) and the

unemployed (-26.3%, SE = 0.03). The results underline the idea that right-wing parties often pay attention to the reason for someone's request for help. People who do not obey the social distance measure are 36.8% (SE = 0.02) less likely to receive priority from a right-wing voter. For left-wing voters, this effect is slightly smaller at 32.2% (SE = 0.03). Compared to the benchmark model (-31.5%, SE = 0.02), the right-wing voters are about 5.3% stricter, while the differences between the left-wing voters and the benchmark model are only 0.7%. When weight is considered as an indicator of control, the differences between the respondent's political preferences are negligible.

Another ideology test is the education level of the respondents (Appendix Figure 6). Looking at the attributes that indicate control over people, weight and compliance with the measures of social distance, the differences between the low and high educated respondents are minimal. As with political preference, it is expected that there will be a difference in how respondents would rate the professions. In general, there is little difference between highly and less educated respondents. Only the unemployed are treated more harshly by the higher educated. In this case there is a difference of 5.5%.

5. Effects of Attributes on Prioritization of the Vaccines

Figure 3 shows the descriptive values of the vaccine question. The probability of priority is displayed per attribute. For all attributes there is a significant result, and again, the social distance attribute and the occupancy attribute show the strongest results. In fact, the vignettes in which the person obeyed the social distance measurements were prioritized in 65.3 percent of the responses (chisq = 249,650, p <.001). If someone is unemployed, the chance that that person will be supported in receiving a vaccine is only 35.5% (chisq = 94832, p <.001). A nurse, on the other hand, has 58.5% (chisq = 94.832, p <0.001) to receive priority.

Regarding the AMCEs, the main differences between the ICU bed prioritization and the vaccines can be seen in the age attribute. Where in the case of IC beds, there was no significant prioritization of the middle age of 52 years, the results of the vaccine question show the reverse. A person with the age of 52 is 5.4% (SE = .03) more likely to be prioritized for the vaccine than someone 27 years old. There are no results that indicate a prioritization between the oldest and youngest generation.

In line with expectations, people who disobey social distance measures are perceived of less deserving of the vaccines. Compared to compliant people, they are 28.5 percentage points (SE

= 0.02) less likely to receive vaccine priority. The same patterns, but with much less strength, can be seen in the weight attribute. Someone who is overweight has a 5% ((SE = 0.02) chance of not being prioritized.

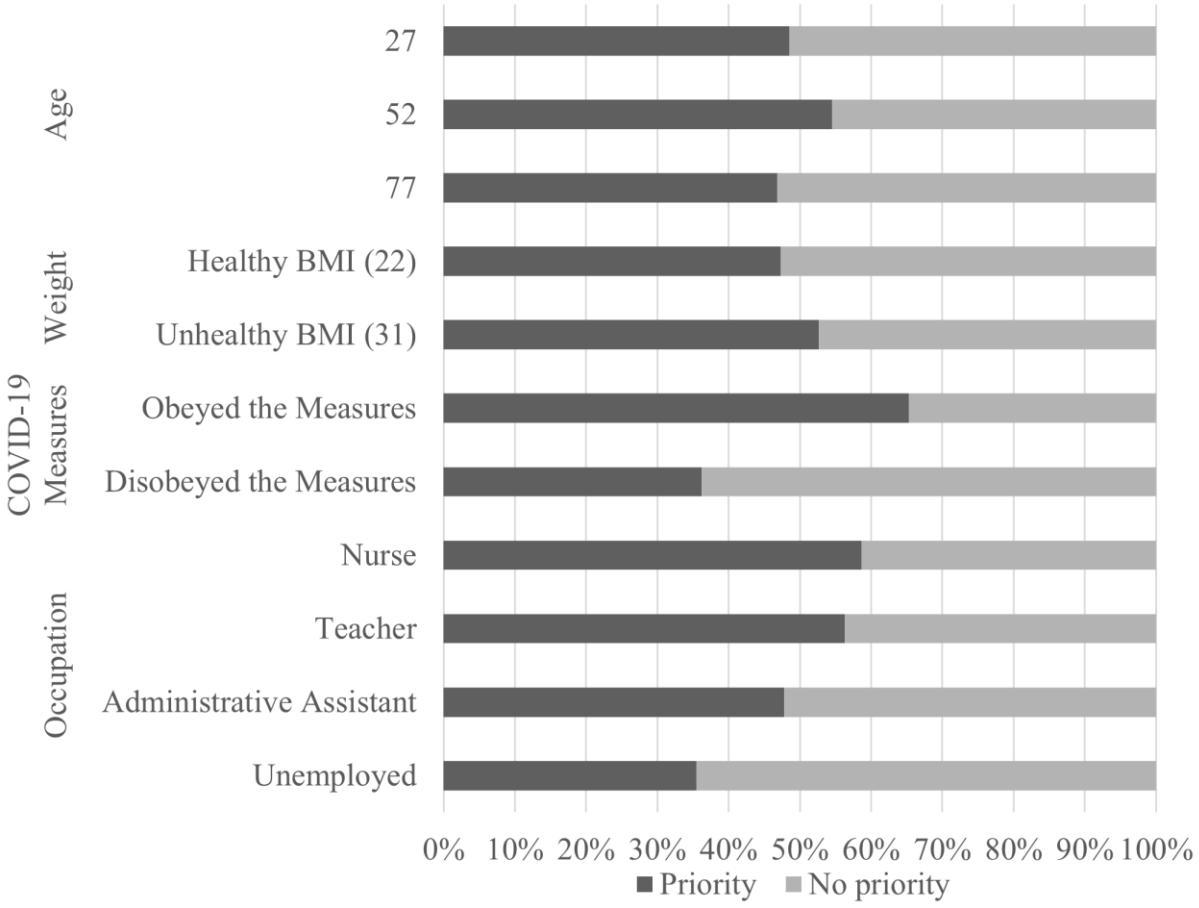

Figure 3. Preferred Priorities on a COVID-19 Vaccine

Note: Post-stratification weights are applied.

There are also indications that there are differences in deservingness between a person's profession. As in the ICU bed situation, there is no evidence that nurses have priority over teachers. However, this effect is found for the administrative assistants and the unemployed. They are 10.1 (SE = 0.03) and 22.3 percentage points (SE = 0.03) less likely to receive support for receiving the first vaccine respectively.

5.1 Interactions with Respondent Characteristics

To emphasize the idea that respondents chose out of self-interest, an interaction effect of the respondent's age has been added to this model. The interaction analysis shows a number of unexpected results, which are shown in Appendix Figure 7. The youngest generation (16-40

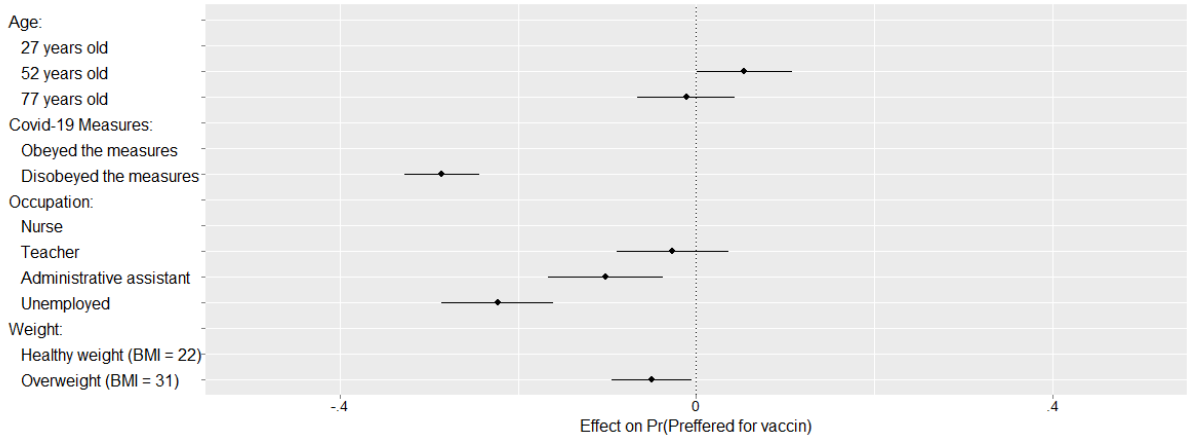

Figure 4 Effects of Health Care Seeker Attributes on Probability of Being Prioritized

Note: This graph shows estimates of the effects of the randomly assigned health care seeker wet attribute values on the probability of being favored for a vaccine. The estimates are based on the benchmark OLS model with clustered standard errors described in Appendix Table 3;

years) does not show significant results for the care seekers with their own age, but gives priority to the people older than themselves. For example, a 52-year-old person has a 13.3% (SE = 0.05) chance of taking precedence over a 27-year-old person, and for a 77-year-old person this chance is 20.7% (SE = 0.05). On the contrary, the respondents over 60 prioritized the care seeker with the age of 27 years (-7.5%, SE = 0.03). The group between forty and sixty years of age show no differences in prioritization.

The results of the interaction effect of self-assessed health show that the respondents who consider themselves healthy give less priority to overweight people. In fact, these people are 6.6 percent (SE = 0.02) less likely to have support for being first in line for the vaccine. The respondents who indicate that they are unhealthy make no difference in the support between people with or without overweight (see Appendix Figure 8).

Looking at the interaction of the social distance measures' obedience, there is no indication of self-interest. The respondents who themselves do not obey the measures of social distance do not give priority to those who also disobey them. Both the obedient and the

disobedient respondents give penalty to people who don't follow the rules. For the obedient respondents this is 30.8% (SE = .02) and the disobedient respondents fined 28.8% (SE = .04). The difference in prioritization of disobedience is therefore only two percent between the subgroups.

The differences in the judgment of disobedient persons are greater when the respondent's political preferences are compared. Compared to left-wing voters (-32.5%, SE = .03), right-wing voters are about 5 percentage points less strict with disobedient people (-27.8%, SE = .03). This is in contrast to the expectation that right-wing voters would be stricter for people who do not take their responsibility. The same unexpected results can be seen in the weight attribute. Only left-wing voters show less support for overweight people (-5.3%, SE = 0.03). In addition to this lack of influence of ideology, the differences in views on the occupation between the right and left voters are also minimal.

On the other hand, the respondents' educational attainment does show the expected difference in the respondents' attitudes towards someone who is overweight. The lower educated respondents considered that the overweight person deserved the COVID-19 vaccine less (-8.9%, SE = 0.02) and the higher educated do not distinguish between overweight and non-obese. There is only a small influence of the level of education attained in the opinion of people who do not adhere to the measures of social distance. Both low and high educated punish a person who does not obey the rules. As for the occupation of the pattern is also almost the same. Both low and high educated give priority to nurses over administrative assistants and the unemployed. In addition, lower educated respondents also give priority to nurses over teachers (-7.8%, SE = 0.04).

6. Discussion and Conclusion

The current COVID-19 situation has caused a lot of public unrest. Many questions and discussions about the distribution of the COVID-19 health care are raised. Various studies have already shown what kind of people are seen as more deserving regarding regular health care (Jensen & Petersen, 2017; Kloosterman, 2011; van der Aa et al., 2017). These studies show that the criterion of need in particular is the most important consideration in the demand for care. During the COVID-19 pandemic, however, a situation has risen where choices still have to be made between cases with an equal need. Still, to this day, there is no information on the deservingness of COVID-19-related health care. This study used a conjoint analysis to

diversify four theoretically relevant attributes of hypothetical health care seekers and to compare the explanatory power of the different attributes.

This study confirms the idea that somebody who has control over the risk of getting sick is perceived as less deserving. The public expresses a strong preference for those seeking help who adhere to the standard of social distance. It could be said that there is reverse casualty with regard to vaccine prioritization, that is, someone who does not adhere to social distance measures does not want to get a vaccine either. However, this idea does not apply to the ICU beds. The argument of the reverse causality is therefore not valid. In addition, the fact that people with an unhealthy weight are also perceived as less deserving emphasizes the impact of the control criterion. Age and weight are both presumed to be equally associated to the same need for COVID-19 health care, especially since each vignette has the same chance of survival. It can be said that when differences in need are eliminated, the effect of the BMI of a person is therefore considered more as a control over health risks. This effect is emphasized by the fact that the outcomes of the prioritization of the age attribute do not give unilateral results.

Furthermore, the reciprocity principle is also visible in the outcomes of this study. The respondents give less priority to those who work (or have worked) as an administrative assistant or are unemployed. However, the results of the age attribute, which have often been talked about in the media, is less convincing. While younger people are prioritized over older people for the ICU bed, the middle generation is given some priority for the vaccines.

The effect of the respondents' self-interest, i.e., the identity principle, is especially visible in a person's self-assessed health. For both the prioritization of the ICU beds and the COVID-19 vaccines, people who judge themselves to be unhealthy do not differentiate between overweight and non-overweight people.

The influence of ideology is only visible when the respondents compare the different professions and the obedience of the social measures of distance. In these cases, the less educated and right-wing voters are stricter on people with unfavorable traits.

One difficulty in this study was the constantly changing situation. The number of infections fluctuated, and the social distance measures advocated by the government changed from time to time. Research has shown that support for government decisions has increased during the COVID-19 pandemic (Reeskens et al., 2020). It is therefore expected that in the future, once the pandemic is over, opinions about social distance measures will change. It is

expected that government support will decline and that the public will have less pronounced feelings about the social distance measures.

Furthermore, this research was conducted focusing on the Dutch situation. In the Netherlands there was a different kind of lockdown than in the rest of the world, namely one based more on individual responsibility (de Haas et al., 2020; Reeskens et al., 2020). Additionally, the Dutch have a specific opinion about the end of life, which makes the age attribute, for example, very context specific. These arguments indicate that it is difficult to generalize the results to other countries. more family-oriented cultures, such as the Italian, have a different view of the end of life and therefore probably makes less of a distinction between ages (Cohen et al., 2014).

Another interesting point for future research is the interactions between the criteria that are now measured individually. An interesting example of such an interaction is; if a person works in health care but does not follow the rules, is he prioritized for working in a favorable situation or is he punished for being a bad example to others?

As mentioned earlier, public opinion is very important in policy making. This research has mapped out the opinion of the public about the COVID-19 care prioritization. The results of this prioritization support the triage currently described in the protocols. For example, this research confirms the notion that, according to public opinion, health workers (critical jobs) should be given priority concerning COVID-19 health care. While the obedience of the social distance measures shows some strong results, it is difficult to implement this criterion in political policy as there is no documentation indicating whether someone is adhering to the measures. In addition, using a conjoint analysis, it was possible to evaluate the relative support levels. This information helps in evaluating multidimensional policy bundles and contributes to new insights into deservingness theories.

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Appendices

Table 1 Descriptive Statistics of the Respondents

	N	Minimum	Maximum	Mean	Std. Deviation
Age	2922	16	93	57.96	16.798
Political Preference	2560	1.00	10.00	5.5227	2.253
Obedience COVID-19 measures	2922	1.00	3.00	1.19	.425
Educational attainment	2916	1.00	6.00	3.7743	1.496

Table 2 Preferred Priorities on an ICU bed

Attribute	% Priority	% No priority	Chi-Square
Age			41.715 ***
27 Years	54.6	45.4	
52 Years	53.9	46.1	
77 Years	41.7	58.3	
Weight			20.520 ***
Healthy BMI (22)	54.4	45.6	
Unhealthy BMI (31)	46.0	54.0	
Social Distance Measures			296.518 ***
Obeyed the Measures	66.2	33.8	
Disobeyed the Measures	34.5	65.6	
Occupation			95.019 ***
Nurse	61.0	39.0	
Teacher	54.5	45.5	
Administrative Assistant	47.4	52.6	
Unemployed	36.9	63.1	

Signif. Codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05

Table 3 Average Marginal Component Effects (AMCE) ICU beds

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
52 years old	0.00011638	0.025301	0.0045996	9.9633e-01	
77 years old	-0.13566488	0.028222	-4.8071402	1.5310e-06	***
Disobedient	-0.31475766	0.019483	-16.1551301	1.0450e-58	***
Teacher	-0.04796148	0.030959	-1.5491934	1.2134e-01	
Administrative	-0.11370572	0.032259	-3.5247283	4.2392e-04	***
Unemployed	-0.23392881	0.029593	-7.9047714	2.6843e-15	***
Overweight	-0.07392235	0.023297	-3.1730623	1.5084e-03	**

Number of Obs. = 2922

Number of Respondents = 1461

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

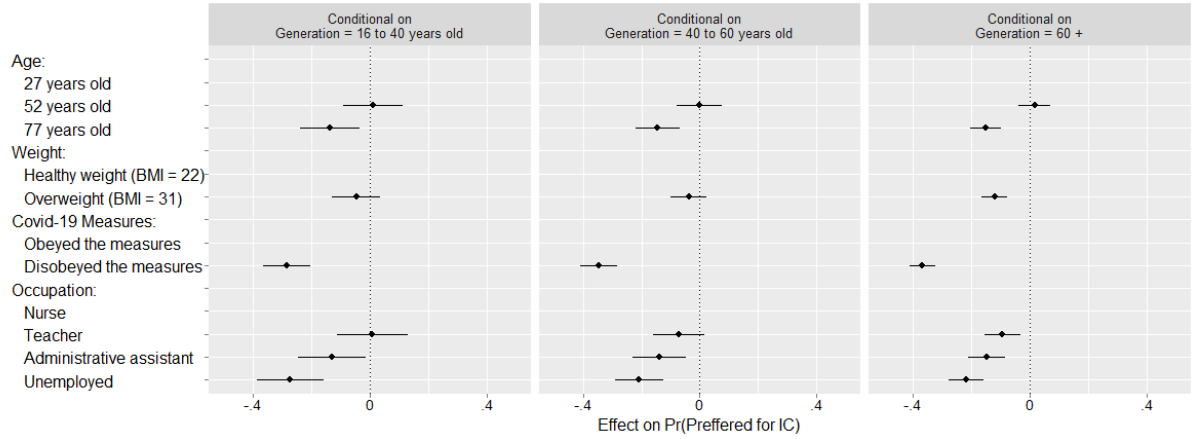

Figure 1 Average Marginal Component Effects (AMCE) ICU beds ~ Age

Table 4 Average Marginal Component Effects (AMCE) ICU beds ~ Age

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.008594	0.020881	0.41157	6.8065e-01	
77 years old	-0.147540	0.020631	-7.15140	8.5896e-13	***
Disobedient	-0.344929	0.016869	-20.44755	6.3169e-93	***
Teacher	-0.069683	0.023610	-2.95138	3.1636e-03	**

Administrative	-0.138271	0.024191	-5.71572	1.0924e-08	***
Unemployed	-0.224375	0.023012	-9.75046	1.8363e-22	***
Overweight	-0.082658	0.016875	-4.89828	9.6678e-07	***
		16 to 40 years old			
52 years old	0.0102813	0.051445	0.19985	8.4160e-01	
77 years old	-0.1365429	0.051641	-2.64409	8.1910e-03	**
Disobedient	-0.2853429	0.041752	-6.83416	8.2487e-12	***
Teacher	0.0067313	0.061798	0.10892	9.1326e-01	
Administrative	-0.1302753	0.059121	-2.20354	2.7557e-02	*
Unemployed	-0.2729123	0.058362	-4.67620	2.9224e-06	***
Overweight	-0.0465001	0.042055	-1.10570	2.6886e-01	
		40 to 60 years old			
52 years old	-0.00014326	0.039324	-0.003643	9.9709e-01	
77 years old	-0.14401773	0.039162	-3.677489	2.3554e-04	***
Disobedient	-0.34617250	0.031717	-10.914315	9.8468e-28	***
Teacher	-0.07138368	0.044462	-1.605501	1.0838e-01	
Administrative	-0.13916412	0.046458	-2.995476	2.7402e-03	**
Unemployed	-0.20711403	0.042645	-4.856748	1.1933e-06	***
Overweight	-0.03827653	0.031741	-1.205908	2.2785e-01	
		60 +			
52 years old	0.017307	0.028075	0.61647	5.3759e-01	
77 years old	-0.150180	0.027542	-5.45277	4.9590e-08	***
Disobedient	-0.366850	0.022580	-16.24653	2.3635e-59	***
Teacher	-0.092925	0.031218	-2.97665	2.9142e-03	**
Administrative	-0.145480	0.032388	-4.49173	7.0646e-06	***
Unemployed	-0.217148	0.031064	-6.99038	2.7414e-12	***
Overweight	-0.120329	0.022689	-5.30340	1.1366e-07	***

Number of Obs. = 2922

Number of Respondents = 1461

Signif. Codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05

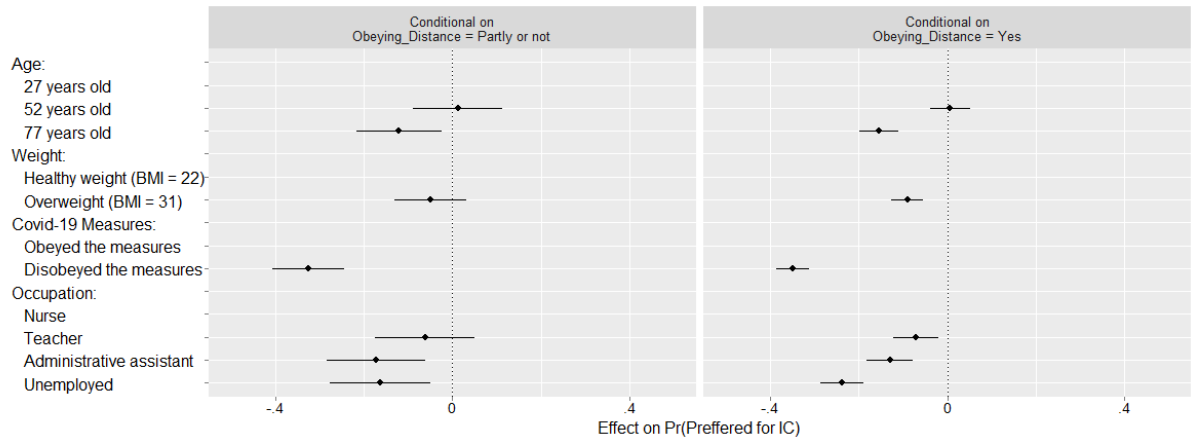

Figure 2 Average Marginal Component Effects (AMCE) ICU beds ~ Social Distance Measures

Table 5 Average Marginal Component Effects (AMCE) ICU beds ~ Social Distance Measures

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.008594	0.020881	0.41157	6.8065e-01	
77 years old	-0.147540	0.020631	-7.15140	8.5896e-13	***
Disobedient	-0.344929	0.016869	-20.44755	6.3169e-93	***
Teacher	-0.069683	0.023610	-2.95138	3.1636e-03	**
Administrative	-0.138271	0.024191	-5.71572	1.0924e-08	***
Unemployed	-0.224375	0.023012	-9.75046	1.8363e-22	***
Overweight	-0.082658	0.016875	-4.89828	9.6678e-07	***
		Partly or not			
52 years old	0.012208	0.051629	0.23646	8.1308e-01	
77 years old	-0.120624	0.048803	-2.47167	1.3448e-02	*
Disobedient	-0.326298	0.041359	-7.88935	3.0377e-15	***
Teacher	-0.062413	0.057159	-1.09192	2.7487e-01	
Administrative	-0.173720	0.056846	-3.05597	2.2433e-03	**
Unemployed	-0.162950	0.058001	-2.80942	4.9631e-03	**
Overweight	-0.050178	0.041130	-1.21999	2.2247e-01	
		Completely			
52 years old	0.0066877	0.022873	0.29238	7.7000e-01	
77 years old	-0.1543433	0.022783	-6.77443	1.2490e-11	***

Disobedient	-0.3492952	0.018496	-18.88466	1.5252e-79	***
Teacher	-0.0716376	0.025962	-2.75929	5.7928e-03	**
Administrative	-0.1296881	0.026792	-4.84050	1.2951e-06	***
Unemployed	-0.2373313	0.025050	-9.47448	2.6810e-21	***
Overweight	-0.0903219	0.018525	-4.87573	1.0841e-06	***

Number of Obs. = 2922

Number of Respondents = 1461

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

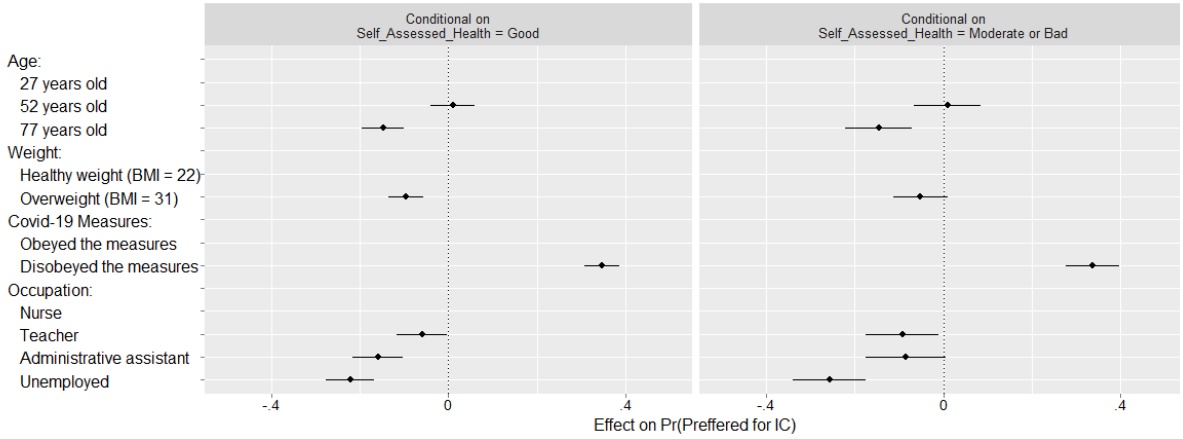

Figure 3 Average Marginal Component Effects (AMCE) ICU beds ~ Self-Assessed Health

Table 6 Average Marginal Component Effects (AMCE) ICU beds ~ Self-Assessed Health

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.0082115	0.020951	0.39193	6.9511e-01	
77 years old	-0.1489130	0.020748	-7.17713	7.1188e-13	***
Disobedient	0.3442125	0.016963	20.29195	1.5147e-91	***
Teacher	-0.0705394	0.023775	-2.96695	3.0077e-03	**
Administrative	-0.1403611	0.024293	-5.77795	7.5616e-09	***
Unemployed	-0.2314432	0.023070	-10.03220	1.1004e-23	***
Overweight	-0.0835427	0.016961	-4.92548	8.4153e-07	***
		Good			
52 years old	0.009561	0.025022	0.38211	7.0238e-01	

77 years old	-0.148318	0.024618	-6.02477	1.6935e-09	***
Disobedient	0.346791	0.020224	17.14717	6.5994e-66	***
Teacher	-0.059937	0.028832	-2.07884	3.7632e-02	*
Administrative	-0.159878	0.028663	-5.57787	2.4349e-08	***
Unemployed	-0.222050	0.027602	-8.04463	8.6505e-16	***
Overweight	-0.096456	0.020187	-4.77805	1.7701e-06	***
		Moderate or Bad			
52 years old	0.010306	0.038436	0.26814	7.8860e-01	
77 years old	-0.145804	0.038693	-3.76820	1.6443e-04	***
Disobedient	0.337446	0.031243	10.80064	3.4179e-27	***
Teacher	-0.092205	0.042174	-2.18632	2.8792e-02	*
Administrative	-0.084615	0.046293	-1.82780	6.7579e-02	
Unemployed	-0.257209	0.042393	-6.06723	1.3013e-09	***
Overweight	-0.051223	0.031490	-1.62662	1.0382e-01	

Number of Obs. = 2886

Number of Respondents = 1443

Signif. Codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05

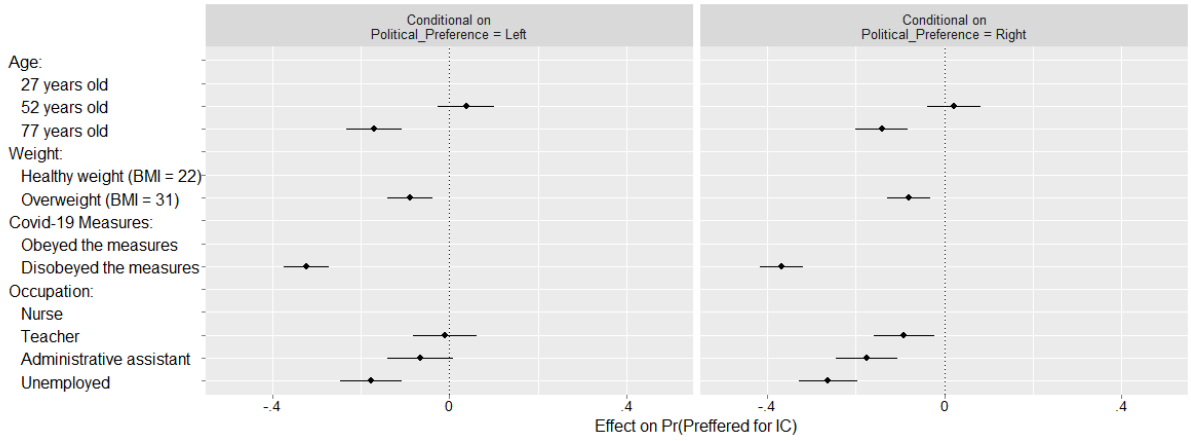

Figure 4 Average Marginal Component Effects (AMCE) ICU beds ~ Political Preference

Table 7 Average Marginal Component Effects (AMCE) ICU beds ~ Political Preference

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.029223	0.022550	1.2959	1.9500e-01	
77 years old	-0.154030	0.022303	-6.9061	4.9807e-12	***
Disobedient	-0.346484	0.018283	-18.9508	4.3482e-80	***
Teacher	-0.057849	0.025403	-2.2773	2.2770e-02	*
Administrative	-0.123310	0.026099	-4.7246	2.3056e-06	***
Unemployed	-0.228405	0.024900	-9.1730	4.6005e-20	***
Overweight	-0.085497	0.018257	-4.6830	2.8276e-06	***
		Left			
52 years old	0.035859	0.033775	1.06171	2.8837e-01	
77 years old	-0.173630	0.033474	-5.18697	2.1375e-07	***
Disobedient	-0.319442	0.027071	-11.80030	3.8894e-32	***
Teacher	-0.017454	0.037461	-0.46593	6.4127e-01	
Administrative	-0.063731	0.038745	-1.64490	9.9991e-02	
Unemployed	-0.187673	0.037218	-5.04252	4.5944e-07	***
Overweight	-0.090714	0.027103	-3.34695	8.1706e-04	***
		Right			
52 years old	0.022013	0.030358	0.72511	4.6839e-01	
77 years old	-0.140755	0.030041	-4.68536	2.7947e-06	***
Disobedient	-0.368621	0.024877	-14.81798	1.1211e-49	***
Teacher	-0.090802	0.034680	-2.61831	8.8367e-03	**
Administrative	-0.174786	0.035260	-4.95709	7.1558e-07	***
Unemployed	-0.262555	0.033468	-7.84503	4.3286e-15	***
Overweight	-0.079901	0.024762	-3.22680	1.2518e-03	**

Number of Obs. = 2472

Number of Respondents = 1236

Signif. Codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05

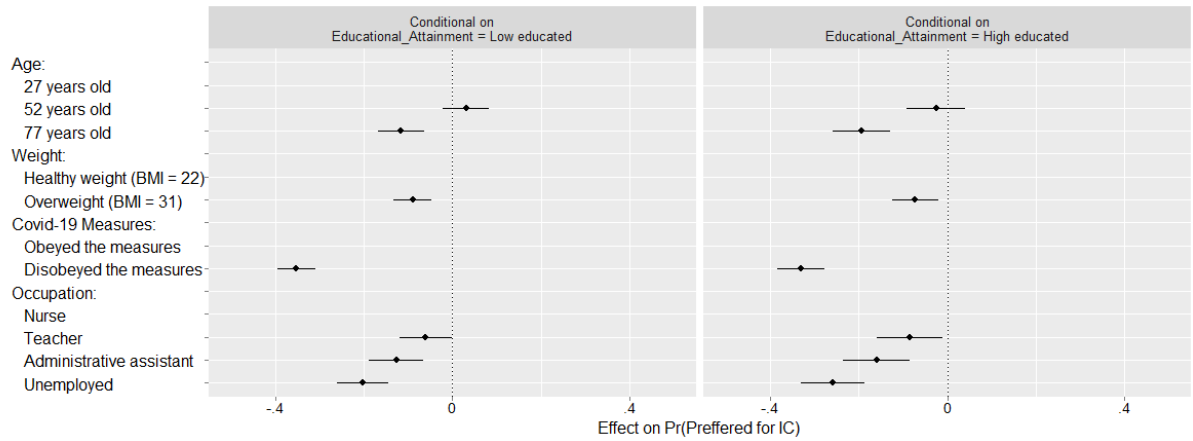

Figure 5 Average Marginal Component Effects (AMCE) ICU beds ~ Educational Attainment

Table 8 Average Marginal Component Effects (AMCE) ICU beds ~ Educational Attainment

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.0033885	0.021528	0.1574	8.7493e-01	
77 years old	-0.1630128	0.021235	-7.6765	1.6353e-14	***
Disobedient	-0.3433847	0.017368	-19.7716	5.2286e-87	***
Teacher	-0.0734186	0.024323	-3.0185	2.5405e-03	**
Administrative	-0.1363634	0.024929	-5.4702	4.4960e-08	***
Unemployed	-0.2256430	0.023649	-9.5414	1.4090e-21	***
Overweight	-0.0858260	0.017378	-4.9388	7.8593e-07	***
		Low educated			
52 years old	0.020831	0.028154	0.73988	4.5937e-01	
77 years old	-0.142114	0.027906	-5.09268	3.5303e-07	***
Disobedient	-0.351309	0.022759	-15.43576	9.4086e-54	***
Teacher	-0.066848	0.031797	-2.10237	3.5521e-02	*
Administrative	-0.121682	0.032750	-3.71547	2.0282e-04	***
Unemployed	-0.202496	0.030905	-6.55228	5.6663e-11	***
Overweight	-0.096983	0.022837	-4.24672	2.1692e-05	***
		High educated			
52 years old	-0.025219	0.033412	-0.75479	4.5037e-01	
77 years old	-0.193714	0.032812	-5.90368	3.5548e-09	***
Disobedient	-0.331252	0.026985	-12.27549	1.2265e-34	***

Teacher	-0.084808	0.037883	-2.23866	2.5178e-02	*
Administrative	-0.159915	0.038594	-4.14349	3.4206e-05	***
Unemployed	-0.258855	0.036926	-7.01007	2.3820e-12	***
Overweight	-0.072155	0.026859	-2.68645	7.2215e-03	**

Number of Obs. = 2748

Number of Respondents = 1374

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

Table 9 Preferred Priorities on a Vaccine

Attribute	% Priority	% No priority	Chi-Square
Age			13.269 **
27 Years	48.5	51.5	
52 Years	54.5	45.5	
77 Years	46.8	53.2	
Weight			8.660 **
Healthy BMI (22)	47.3	52.7	
Unhealthy BMI (31)	52.7	47.3	
Social Distance Measures			249.650 ***
Obeyed the Measures	65.3	34.7	
Disobeyed the Measures	36.2	63.8	
Occupation			94.832 ***
Nurse	58.5	41.2	
Teacher	56.3	43.7	
Administrative Assistant	47.8	52.2	
Unemployed	35.5	64.5	

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

Table 10 Average Marginal Component Effects (AMCE) Vaccine

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
52 years old	0.053869	0.027303	1.97303	4.8492e-02	*
77 years old	-0.011266	0.027853	-0.40447	6.8587e-01	
Disobedient	-0.285476	0.021352	-13.36974	9.0854e-41	***
Teacher	-0.026534	0.031815	-0.83402	4.0427e-01	
Administrative	-0.101565	0.032920	-3.08518	2.0343e-03	**
Unemployed	-0.223090	0.031989	-6.97407	3.0789e-12	***
Overweight	-0.049848	0.022808	-2.18558	2.8846e-02	*

Number of Obs. = 2922

Number of Respondents = 1461

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

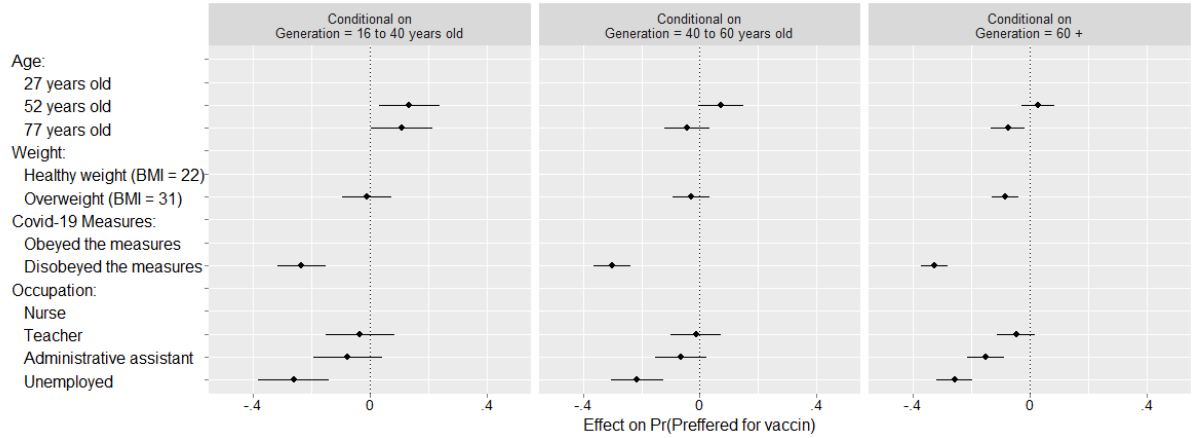

Figure 6 Average Marginal Component Effects (AMCE) Vaccine ~ Age

Table 11 Average Marginal Component Effects (AMCE) Vaccine ~ Age

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.057278	0.020859	2.7459	6.0343e-03	**
77 years old	-0.036277	0.021452	-1.6911	9.0824e-02	
Disobedient	-0.304133	0.017282	-17.5982	2.5421e-69	***
Teacher	-0.032849	0.024163	-1.3595	1.7400e-01	
Administrative	-0.111008	0.023990	-4.6273	3.7050e-06	***
Unemployed	-0.243256	0.024005	-10.1335	3.9245e-24	***
Overweight	-0.056528	0.017203	-3.2859	1.0165e-03	**

		16 to 40 years			
52 years old	0.133315	0.052974	2.51661	1.1849e-02	*
77 years old	0.107730	0.054112	1.99088	4.6494e-02	*
Disobedient	-0.234066	0.042837	-5.46413	4.6519e-08	***
Teacher	-0.034247	0.059487	-0.57571	5.6481e-01	
Administrative	-0.076613	0.060258	-1.27143	2.0358e-01	
Unemployed	-0.261987	0.062253	-4.20845	2.5713e-05	***
Overweight	-0.011293	0.043014	-0.26254	7.9291e-01	
		40 to 60 years			
52 years old	0.070994	0.039377	1.80294	7.1398e-02	
77 years old	-0.043191	0.039807	-1.08500	2.7792e-01	
Disobedient	-0.300580	0.032479	-9.25453	2.1518e-20	***
Teacher	-0.013927	0.044303	-0.31435	7.5326e-01	
Administrative	-0.065288	0.044803	-1.45721	1.4506e-01	
Unemployed	-0.214499	0.045349	-4.72994	2.2459e-06	***
Overweight	-0.031149	0.032329	-0.96348	3.3531e-01	
		60 +			
52 years old	0.028637	0.027807	1.0298	3.0309e-01	
77 years old	-0.074699	0.028998	-2.5760	9.9941e-03	**
Disobedient	-0.326300	0.023315	-13.9955	1.6599e-44	***
Teacher	-0.045496	0.033183	-1.3711	1.7036e-01	
Administrative	-0.151373	0.032163	-4.7065	2.5207e-06	***
Unemployed	-0.257321	0.031771	-8.0993	5.5254e-16	***
Overweight	-0.083110	0.023104	-3.5972	3.2167e-04	***

Number of Obs. = 2922

Number of Respondents = 1461

Signif. Codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05

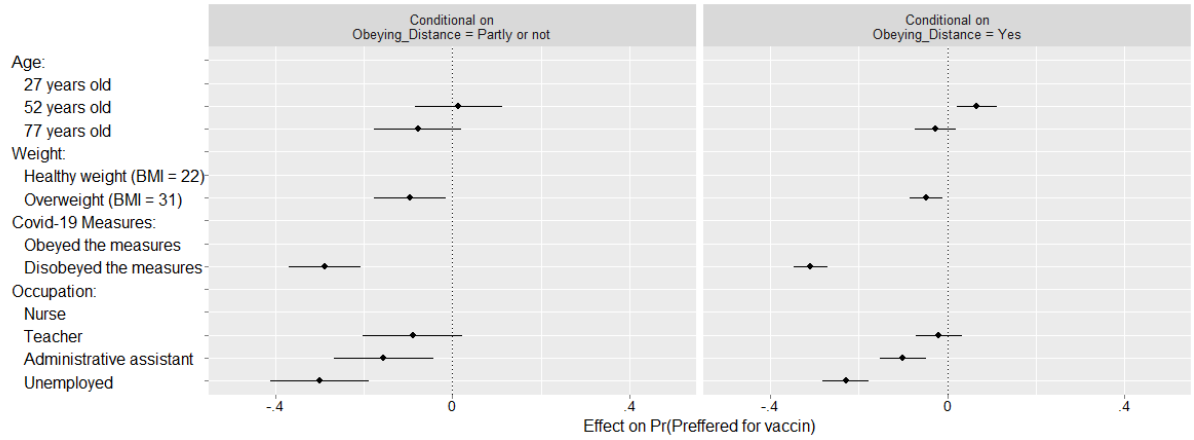

Figure 7 Average Marginal Component Effects (AMCE) Vaccines ~ Obedience Social Distance Measures

Table 12 Average Marginal Component Effects (AMCE) Vaccines ~ Obedience Social Distance Measures

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.057278 0.	020859	2.7459	6.0343e-03	**
77 years old	-0.036277	0.021452	-1.6911	9.0824e-02	
Disobedient	-0.304133	0.017282	-17.5982	2.5421e-69	***
Teacher	-0.032849	0.024163	-1.3595	1.7400e-01	
Administrative	-0.111008	0.023990	-4.6273	3.7050e-06	***
Unemployed	-0.243256	0.024005	-10.1335	3.9245e-24	***
Overweight	-0.056528	0.017203	-3.2859	1.0165e-03	**
		Partly or not			
52 years old	0.013485	0.050426	0.26743	7.8914e-01	
77 years old	-0.078235	0.050197	-1.55857	1.1910e-01	
Disobedient	-0.288866	0.040933	-7.05714	1.6996e-12	***
Teacher	-0.090246	0.057671	-1.56484	1.1762e-01	
Administrative	-0.155538	0.057563	-2.70206	6.8910e-03	**
Unemployed	-0.299946	0.056922	-5.26944	1.3684e-07	***
Overweight	-0.096287	0.040873	-2.35574	1.8486e-02	*
		Completely			
52 years old	0.067173	0.022942	2.92793	3.4122e-03	**
77 years old	-0.026679	0.023753	-1.12318	2.6136e-01	

Disobedient	-0.308872	0.019086	-16.18279	6.6703e-59	***
Teacher	-0.018952	0.026640	-0.71139	4.7684e-01	
Administrative	-0.100088	0.026400	-3.79119	1.4993e-04	***
Unemployed	-0.229483	0.026509	-8.65676	4.8538e-18	***
Overweight	-0.047961	0.018983	-2.52648	1.1521e-02	*

Number of Obs. = 2922

Number of Respondents = 1461

Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

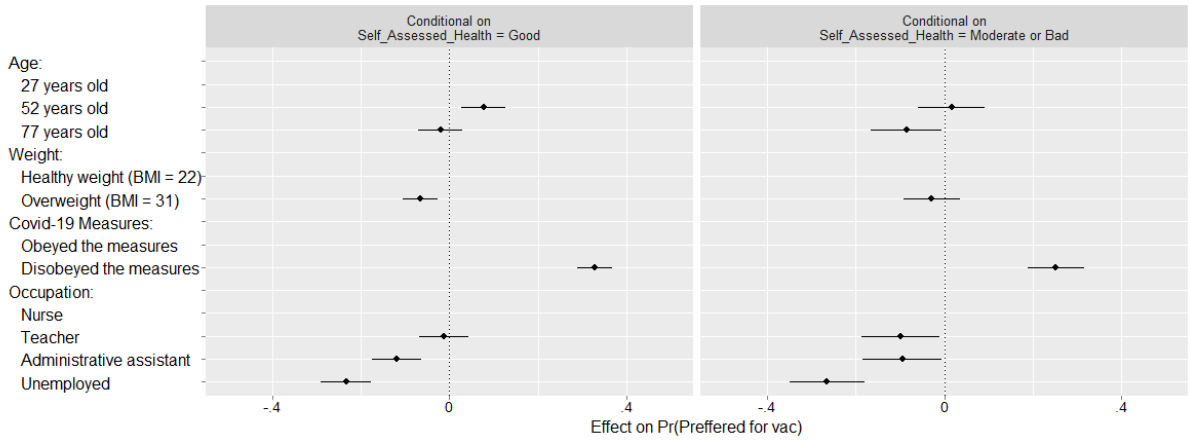

Figure 8 Average Marginal Component Effects (AMCE) Vaccines ~ Self-Assessed Health

Table 13 Average Marginal Component Effects (AMCE) Vaccines ~ Self-Assessed Health

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.061000	0.020953	2.9114	3.5987e-03	**
77 years old	-0.037245	0.021579	-1.7259	8.4357e-02	
Disobedient	0.306605	0.017371	17.6502	1.0145e-69	***
Teacher	-0.036223	0.024221	-1.4955	1.3477e-01	
Administrative	-0.113012	0.024081	-4.6929	2.6929e-06	***
Unemployed	-0.242360	0.024138	-10.0407	1.0094e-23	***
Overweight	-0.056445	0.017291	-3.2644	1.0968e-03	**

		Good			
52 years old	0.076664	0.025027	3.06331	2.1890e-03	**
77 years old	-0.020527	0.025404	-0.80801	4.1908e-01	
Disobedient	0.328519	0.020521	16.00877	1.1099e-57	***
Teacher	-0.012895	0.028746	-0.44860	6.5372e-01	
Administrative	-0.119268	0.028532	-4.18017	2.9130e-05	***
Unemployed	-0.233838	0.028945	-8.07875	6.5431e-16	***
Overweight	-0.066272	0.020517	-3.23018	1.2371e-03	**
		Moderate or Bad			
52 years old	0.016334	0.038357	0.42584	6.7022e-01	
77 years old	-0.085220	0.040996	-2.07875	3.7641e-02	*
Disobedient	0.252852	0.032592	7.75807	8.6234e-15	***
Teacher	-0.098029	0.044911	-2.18273	2.9056e-02	*
Administrative	-0.094869	0.045217	-2.09806	3.5900e-02	*
Unemployed	-0.264883	0.043564	-6.08032	1.1994e-09	***
Overweight	-0.028935	0.032525	-0.88964	3.7366e-01	

Number of Obs. = 2886

Number of Respondents = 1443

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05

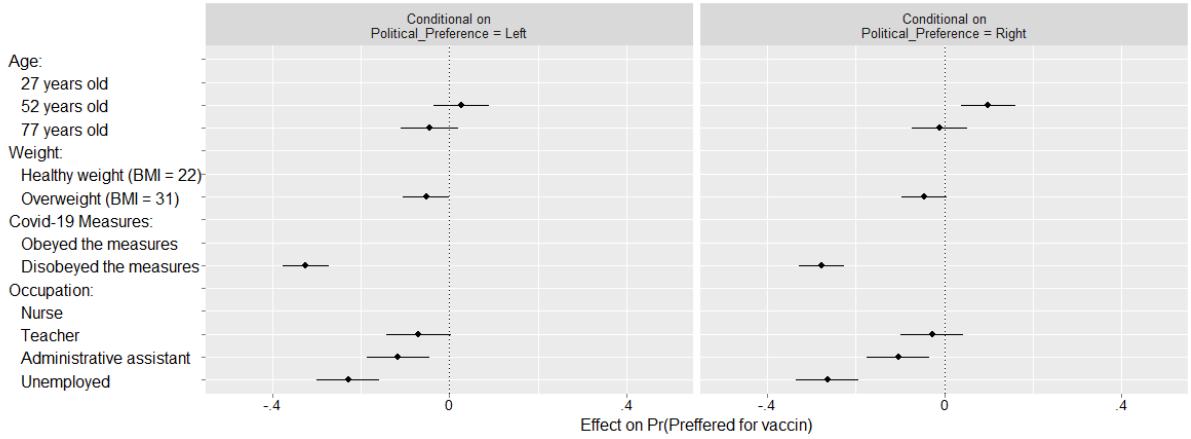

Figure 9 Average Marginal Component Effects (AMCE) Vaccines ~ Political Preference

Table 14 Average Marginal Component Effects (AMCE) Vaccines ~Political Preference

Attribute	Estimate	Std. Err	z value	Pr(>|z|)
		Unconditional		

52 years old	0.063442	0.022644	2.8016	5.0842e-03	**
77 years old	-0.031052	0.023405	-1.3268	1.8458e-01	
Disobedient	-0.302350	0.018838	-16.0496	5.7499e-58	***
Teacher	-0.045889	0.026303	-1.7446	8.1050e-02	
Administrative	-0.107708	0.025933	-4.1532	3.2780e-05	***
Unemployed	-0.252245	0.026121	-9.6567	4.6051e-22	***
Overweight	-0.046403	0.018699	-2.4816	1.3080e-02	*
		Left			
52 years old	0.022652	0.033138	0.68359	4.9424e-01	
77 years old	-0.056237	0.034325	-1.63837	1.0135e-01	
Disobedient	-0.329422	0.027416	-12.01554	2.9443e-33	***
Teacher	-0.071218	0.038416	-1.85384	6.3761e-02	
Administrative	-0.113994	0.037680	-3.02530	2.4839e-03	**
Unemployed	-0.240070	0.037764	-6.35712	2.0557e-10	***
Overweight	-0.050717	0.027284	-1.85885	6.3048e-02	
		Right			
52 years old	0.099408	0.031123	3.19403	1.4030e-03	**
77 years old	-0.010649	0.032027	-0.33251	7.3951e-01	
Disobedient	-0.277769	0.026007	-10.68064	1.2540e-26	***
Teacher	-0.027248	0.036048	-0.75588	4.4972e-01	
Administrative	-0.104179	0.035850	-2.90597	3.6611e-03	**
Unemployed	-0.264077	0.036140	-7.30707	2.7303e-13	***
Overweight	-0.045036	0.025711	-1.75159	7.9844e-02	

Number of Obs. = 2472

Number of Respondents = 1236

Signif. Codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*' 0.05

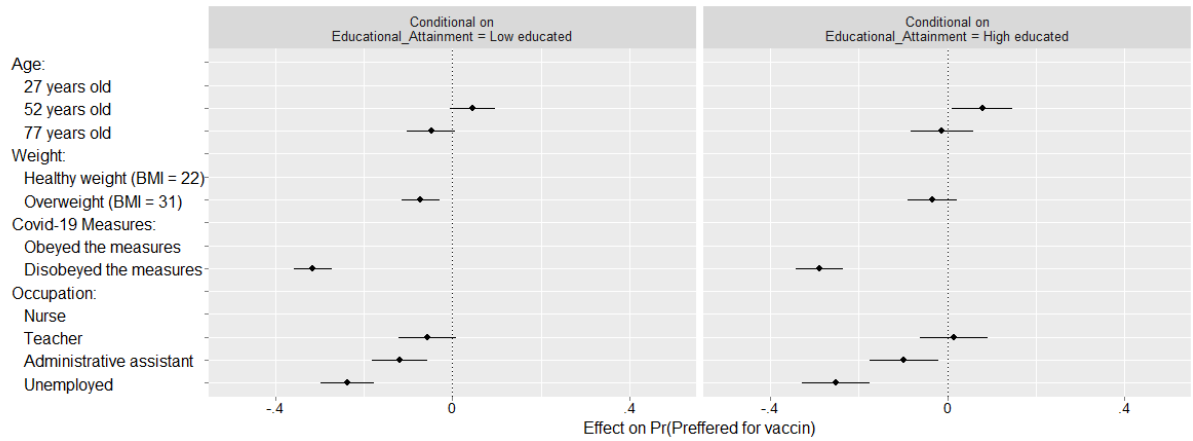

Figure 10 Average Marginal Component Effects (AMCE) Vaccine ~ Educational Attainment

Table 15 Average Marginal Component Effects (AMCE) Vaccine ~ Educational Attainment

Attribute	Estimate	Std. Err	z value	Pr(>|z|)	
		Unconditional			
52 years old	0.055692	0.021517	2.5883	9.6449e-03	**
77 years old	-0.042745	0.022625	-1.8893	5.8852e-02	
Disobedient	-0.299525	0.017207	-17.4070	7.2993e-68	***
Teacher	-0.039230	0.026154	-1.5000	1.3362e-01	
Administrative	-0.111062	0.025392	-4.3738	1.2209e-05	***
Unemployed	-0.246975	0.025067	-9.8524	6.6895e-23	***
Overweight	-0.066378	0.017801	-3.7290	1.9226e-04	***
		Low education			
52 years old	0.041610	0.027275	1.5256	1.2712e-01	
77 years old	-0.064497	0.029291	-2.2019	2.7669e-02	*
Disobedient	-0.305758	0.022369	-13.6686	1.5628e-42	***
Teacher	-0.077724	0.035242	-2.2055	2.7422e-02	*
Administrative	-0.120656	0.033038	-3.6521	2.6014e-04	***
Unemployed	-0.245817	0.032794	-7.4957	6.5921e-14	***
Overweight	-0.089378	0.023020	-3.8827	1.0332e-04	***
		High education			
52 years old	0.079545	0.034716	2.29133	2.1944e-02	*
77 years old	-0.011921	0.035693	-0.33399	7.3839e-01	
Disobedient	-0.289176	0.026912	-10.74509	6.2500e-27	***
Teacher	0.015467	0.038806	0.39856	6.9021e-01	
Administrative	-0.098304	0.039581	-2.48362	1.3006e-02	*

Unemployed	-0.251628	0.039248	-6.41120	1.4438e-10	***
Overweight	-0.033283	0.028132	-1.18309	2.3677e-01	

Number of Obs. = 2748

Number of Respondents = 1374

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05