

An incongruous intervention: Exploring the role of anti-institutionalism in less-educated individual's limited uptake of nutrition information

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Abstract

Despite many efforts, nutritional health interventions have been largely unable to reduce health inequalities between less- and more-educated individuals, since their effectiveness among the former is often limited. Conventionally, adverse financial circumstances and poorer health literacy are argued to explain this. Drawing on recent sociological insights, we propose a complementing and novel sociocultural explanation based on how contemporary power relations in society breed anti-institutionalism among less-educated individuals. Using a survey of a representative sample of the Dutch population ($n = 2398$), we focus on the strategic case of the lower uptake of nutrition information among less-educated individuals. We find that two aspects of anti-institutionalism, i.e. institutional distrust and antipaternalism, substantially account for the educational gap in the uptake of nutrition information. This indicates that current nutrition information inspires opposition among less-educated individuals. More generally, it suggests that the development of nutritional health

interventions should avoid invoking institutional connotations, to increase their acceptance by those who commonly need these most.

KEYWORDS

anti-institutionalism, antipaternalism, health inequalities, institutional distrust, misrecognition, nutrition information

INTRODUCTION

Numerous studies have examined educational differences in nutritional health, repeatedly showing that less-educated individuals have unhealthier nutritional habits than their more-educated counterparts (see e.g. Darmon & Drewnowski, 2008). Despite many efforts, nutritional health interventions have been largely unable to reduce these inequalities, since their effectiveness among lower socioeconomic groups is often limited. Conventional explanations for the stratified effectiveness of nutritional interventions focus primarily on factors like limited financial resources (e.g. Hersey et al., 2015), financial stress (e.g. Daniel, 2016) or limited health literacy (e.g. Springvloet et al., 2015).

Reflecting McCartney et al.'s (2020) recent claim that power relations are a fundamental cause of health inequalities, through “continuously intersecting socio-political processes of power and domination—but also of *resistance*” (p. 33, emphasis added), we add a novel, complementing sociological perspective potentially relevant for the limited effectiveness of health interventions among less-educated individuals. More specifically, we theorize that the latter's resistance to the domination of more-educated individuals and the institutions they inhabit offers opportunities to better understand the (in)effectiveness of nutritional health interventions.

Aside from being associated with cognitive and financial differences, educational attainment has recently been described as “the object of group-based acting and thinking” (Spruyt & Kuppens, 2015a, p. 292), impacting one's way of looking at the world. These education-based sociocultural differences are widely reported (e.g. Kuppens et al., 2015; Spruyt & Kuppens, 2015b) and may incite stigmatization of less-educated individuals by their more-educated counterparts (e.g. Kuppens et al., 2018). Consequently, the former may experience feelings of misrecognition (Flemmen et al., 2019; Lamont, 2019), in turn inspiring opposition to the lifestyles of the latter and the institutions they populate, e.g. in the fields of politics, science and health (Lamont, 2018; Noordzij et al., 2019; Noordzij et al., 2021a). This is illustrated most clearly in recent sociological studies on politics: compared with more-educated individuals, less-educated citizens are less likely to engage with politics (Laurison, 2016; Visser et al., 2021), and in case they do, they embrace its anti-establishment kind (Noordzij et al., 2021b). Either way, this proves largely informed by feelings of cultural distance from and perceived contempt by professionals in the political domain (Noordzij et al., 2021a, 2021b; Visser et al., 2021).

Less-educated citizens' aversion and resistance to dominant institutions fueled by their feelings of misrecognition as uncovered in aforementioned studies are likely to also be relevant with regard to their stance towards health interventions. If only because the institutions and professionals involved—e.g. scientists, the government and medical professionals (Stroobant et al., 2018; Tanner, 2004)—are similar to the ones those studies focussed on, signalling that education-based sociocultural differences make the interventions incongruous with the life

world of less-educated individuals. This highlights that feelings of anti-institutionalism among less-educated individuals associated with contemporary power dynamics potentially impact how they respond to nutritional health interventions. Drawing on recent sociological debates, we will further elaborate and test this idea.

Being the first to do so, we choose the strategic case of the uptake of nutrition information to test our novel explanation because (a) it has a particularly large educational gradient and (b) its low impact on individual agency would expectedly mitigate the effects of anti-institutionalism on its receptivity. Any effect anti-institutionalism may have on information uptake likely also occurs when it comes to the acceptability of other, less agentic, health promotion efforts. Hence, we ask: *What is the role of anti-institutionalism in less-educated individuals' limited nutrition information uptake?* More specifically, our study assesses whether anti-institutionalism (1) is negatively associated with institutional nutrition information uptake and (2) accounts for the relationship between education and this uptake, while (3) simultaneously taking the conventional explanations—financial circumstances and health literacy—into account.

A NOVEL EXPLANATION FOR LESS-EDUCATED INDIVIDUALS' LIMITED NUTRITION INFORMATION UPTAKE: EDUCATION-BASED SOCIOCULTURAL DIFFERENCES AND THE ANTI-INSTITUTIONALISM THEY INSPIRE

More-educated individuals are better equipped to thrive in and navigate elite institutions (Forster & Van de Werfhorst, 2020; Lareau, 2015), as they are more familiar with the 'rules of the game' and possess the experience and sense of entitlement to deal with potential problems within the institutions (Lareau, 2015; Rivera, 2012). This largely results from their lifelong socialization in those institutions (especially higher education) and upper-strata milieus. As another consequence of this socialization, their lifestyles differ from those of many less-educated individuals in terms of, e.g. cultural consumption (Katz-Gerro, 2002; Van Eijck, 1999) and political viewpoints (Noordzij et al., 2019; Spruyt et al., 2016), as well as health (Oude Groeniger et al., 2020; Pampel et al., 2010) and food practices (Oude Groeniger et al., 2017; Pampel, 2012). In and of themselves, these lifestyle differences are no cause for anti-institutionalist tendencies by less-educated individuals. Yet, as more-educated individuals hold a dominant position in contemporary society, it is often their lifestyle choices that are deemed to be 'appropriate', while those of the less-educated are frowned upon (Bourdieu, 1984; Currid-Halkett, 2017).

Such stark education-based sociocultural differences, and the way both ends of the spectrum are appreciated in society, may cause less-educated individuals to develop feelings of misrecognition, believing that their way of life is indeed looked down on by their more-educated counterparts (Flemmen et al., 2018; Lamont, 2018; Noordzij et al., 2021a). Tellingly, less education, more than other indicators of low socioeconomic status (e.g. a low income), is evaluated negatively by more-educated individuals, which fuels the stigmatization of the former by the latter group (Kuppens et al., 2018).

Nutrition information provided by institutions mainly populated by more-educated individuals is therefore likely to be perceived by less-educated individuals as an attempt to force them to adopt elements of a highbrow lifestyle (Bergman et al., 2020), in line with so-called 'civilizing offensives' common in Dutch history (Van den Berg & Duyvendak, 2012): "Deliberate, conscious attempts of powerful groups, including a historically paternalistic state, at altering the behaviour

of sections of the population and inculcating lasting, ‘civilized’ habits” (Powell, 2013, n.p.). The feelings of misrecognition and subsequent anti-institutionalism this fuels can affect the uptake of nutrition information from institutional sources.

This can occur in two ways. First, a sizable body of literature demonstrates that less-educated individuals are less trusting of the institutions active in providing nutrition information, i.e. politics (Noordzij et al., 2021c), science (Achterberg et al., 2017) and health care (Laveist et al., 2009), with this lower institutional trust connected to unhealthier behaviour (Ahnquist et al., 2008) and lower self-rated health (Mohseni & Lindström, 2008). While the relationship between distrust and suboptimal health outcomes has not been tested causally, its existence could indicate a disregard of the institutions’ health promotion efforts, including, but not limited to, nutrition information, among those who distrust institutions more (e.g. less-educated individuals). Moreover, research during the COVID-19 pandemic has shown that support for preventive health measures is much greater among individuals with more institutional trust (e.g. Ahluwalia et al., 2021; Lachapelle et al., 2021), providing an incentive to also study its merit in nutrition-related health promotion efforts. Consequently, we hypothesize: *Less-educated individuals make less use of institutional nutrition information because they distrust institutions more* (hypothesis 1).

Second, the uptake of nutrition information is probably affected by antipaternalism, i.e. an aversion to perceived “interference by some outside agent in a person’s freedom for the latter’s own good” (Le Grand & New, 2015, p. 7). While it is possible that more-educated individuals would be more prone to exhibiting antipaternalistic tendencies, given their generally greater appreciation of individual liberties and self-actualization (Houtman et al., 2011), there are actually more reasons why antipaternalism would be more pronounced among less-educated individuals. As Jackman (1994) argues, paternalism has an aura of power dynamics because the dominant paternalistic group (here, more-educated individuals and the institutions they populate) is perceived as believing it has the moral superiority to decide what is best for the dominated group (here, the less-educated individuals; Kuppens et al., 2018; Spruyt, 2014). The latter are therefore urged to change their behaviour to bring it in line with that of the former, which can be perceived as meddling. This is echoed in anecdotal evidence, comprising semistructured, inductive observations performed for this study of hundreds of social media reactions (Facebook comments and Tweets). These comments were in response to health promotion-related news posts from media outlets commonly consumed by less-educated individuals in the Netherlands (De Jong et al., 2020; Kemmers et al., 2015) and were translated here for matters of readability and anonymity. They reveal that some perceive such interventions as attempts to interfere with their freedom to choose, with one commenter stating: “Everyone should decide what to eat him-or herself. [People in] government jobs should be dealing with other things!” Others were concerned with the “constantly patronizing tone about how humanity should behave” or denounced the perceived arrogance of sources: “These kinds of fundamentalists have a day job in correcting their poor old unhealthy fellow man”.

As the commenting users are potentially a vocal minority, and there is no way to ascertain their educational attainment, we use this study to empirically uncover the relevance of these antipaternalistic tendencies in the educational gap in the uptake of nutrition information. Given the sources of the commented-on news posts and the link between antipaternalism and power dynamics made in extant theorizing, we will test the following hypothesis: *Less-educated individuals make less use of institutional nutrition information because of their higher levels of antipaternalism* (hypothesis 2).

CONVENTIONAL EXPLANATIONS FOR LESS-EDUCATED INDIVIDUALS' LIMITED NUTRITION INFORMATION UPTAKE: FINANCIAL CIRCUMSTANCES AND HEALTH LITERACY

Research on the lower uptake of nutrition information by less-educated individuals suggests multiple plausible explanations, with financial circumstances and health literacy being the most prominent.

Financial circumstances

The financial circumstances of less-educated individuals are generally worse than those of their more-educated counterparts (Psacharopoulos, 2014). There are two main pathways through which this is assumed to affect the uptake of nutrition information:¹ (1) less-educated individuals may not have enough money to buy the food recommended in official nutrition information campaigns (e.g. Hersey et al., 2015); and (2) they are more likely to experience financial stress, making problems other than diet more pressing (e.g. Daniel, 2016). While both factors are able to explain *noncompliance* (i.e. not acting on material provided), they are also likely to affect the *uptake* of information: when exposed to recommendations that cannot be acted on, these are unlikely to be listened to.

Health literacy

Health literacy, as defined by Nutbeam (1998, p. 357), “represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health”. It is generally regarded as a precursor to the uptake of information, with the consensus being that greater health literacy leads to an improved understanding of nutrition information and, subsequently, better uptake of it (see Aldoory, 2017). On this basis, less-educated individuals' uptake of nutrition information is expected to be lower, as their health literacy tends to be poorer than that of more-educated counterparts (Rikard et al., 2016).

The above implies there is a basic level of factual knowledge needed to understand nutrition information. For example, a campaign communicating a message to eat more wholegrain products will probably fail for those lacking basic nutritional knowledge since, in this specific case, they are unable to determine whether an item is actually wholegrain (Mancino & Kuchler, 2012). This information could, however, be effective for those who can comprehend it but were previously unaware of the health benefits of wholegrain foods.

DATA AND METHODS

Dataset

Our study uses data from the LISS (Longitudinal Internet Studies for the Social Sciences) panel, which is administered by CentERdata (Tilburg University, the Netherlands). The data

were collected on our behalf as part of a wider research project on societal, political and health-related issues (Van der Waal et al., 2020). The panel is composed of a true probability sample of Dutch households based on the official population register, and comprises about 7500 individuals. Samples of these participants complete a variety of questionnaires over time (Scherpenzeel, 2009). The respondents are paid for completed surveys and, to ensure they are representative, computers and internet connections are provided to those who need them.

In the current study, 3042 Dutch adults (18 years and above) were sampled from the panel, with 2436 of them completing our survey, equating to a response rate of 79.1%. We excluded 38 people who finished the questionnaire in 10 minutes or less, as this is the minimum time realistically required to provide valid responses. This left us with a dataset of 2398 individuals for our analyses.

Measures

The *use of institutional nutrition information* was measured by asking the respondents whether they use information from (1) the government and/or (2) the Netherlands Nutrition Centre (Het Voedingscentrum) when deciding what best to eat. Their responses were recorded on a seven-point Likert scale (completely disagree to completely agree). A principal component analysis (PCA) of the answers produced a factor with an explained variance of 78.3% and an eigenvalue of 1.56. We examined reliability based on the standardized coefficient alpha, which is viewed as the most appropriate reliability test for two-scale items (Eisinga et al., 2013), indicating a reliable scale (Cronbach's alpha = 0.72). *The use of institutional nutrition information* was calculated for respondents with valid responses on both items. A higher score indicated a greater use of this information.

Level of education was measured by recoding the highest education level attained into three categories that complied with the International Standard Classification of Education, 2011 (UNESCO, 2012): less educated (primary and lower secondary education: ISCED 0–2); medium educated (upper secondary education: ISCED 3–4); and more educated (tertiary education: ISCED 5–7). Those still in education were excluded ($n = 120$).

Institutional distrust was measured with three items about trust in: (1) politics; (2) medical doctors; and (3) scientists, with possible answers ranging from 0 (no trust at all) to 10 (complete trust). A PCA revealed a single factor explaining 70.1% of the variance and an eigenvalue of 2.13. We reverse-coded the items and created a single, reliable scale (Cronbach's alpha = 0.77) by taking the average score of respondents who provided valid answers to all three questions. Higher scores indicated more institutional distrust.

We constructed a new measure for nutrition-related *antipaternalism*. The respondents were asked to indicate their agreement with two statements inspired by semistructured observations of social media reactions (Facebook comments and Tweets) to posts by popular news media on health-related issues, e.g. the “Week Without Meat” campaign, or public calls to eat more fruit and vegetables. In detail, we used the search function of both platforms to identify especially opinionated user comments on relevant posts by strategically selected sources, i.e. tabloids known for their less-educated (De Jong et al., 2020), vocal and discontented (Kemmers et al., 2015) reader base: *Algemeen Dagblad* and *De Telegraaf*. If any social media pages were then identified that seemed to be relevant based on the same criteria, they were added as sources. The quotes obtained were analyzed and used to construct the two final statements: (1) “The government should not meddle in my eating habits”; and (2) “The government should be dealing with more important things than my eating habits”. Possible

answers ranged from 1 (completely disagree) to 7 (completely agree). The statements underwent pilot testing involving a small nonprobability sample ($n = 224$), after which they were included in the final survey. A PCA of the responses to them in the final survey revealed a single factor explaining 81.5% of the variance and an eigenvalue of 1.63. The scale for assessing *antipaternalism*, made by taking the average score of respondents who provided valid answers to both items, was reliable (standardized Cronbach's alpha = 0.77).

In exploring the empirical value of anti-institutionalism, we controlled for indicators for two conventional explanations of less-educated individuals' limited uptake of nutritional information: financial circumstances and basic nutritional knowledge. The former was measured with two variables: self-reported net monthly *household income* and *financial stress*. For the first of these, we excluded two sets of respondents with very improbable answers: three older than the statutory retirement age in the Netherlands who reported a remarkably high net monthly household income (€47,000, 146,652 and 178,677) and 20 who described a monthly household income of 0 Euros, which is highly implausible given the Dutch social security system. We used the log of the responses to account for the skewness of *household income*, as well as the fact that this better resembles the functional relationship between household income and the use of institutional nutrition information.

Financial stress was measured with a single variable taken from the results of the most recent survey wave prior to our data collection of the annual "Economic Situation: Income questionnaire". This particular survey forms part of the LISS panel's Core Study (De Cock, 2019), and the data for it were collected in June and July 2019. The respondents were asked how hard or easy it is to live off their household income, with answers on a scale from 0 (very hard) to 10 (very easy). We reverse-coded the answers for the sake of clarity, with higher scores indicating greater financial stress.

In relation to the second conventional explanation, we measured *basic nutritional knowledge* using 12 items on factual knowledge of the nutritional value of various food products, instead of items asking what different foods mean for health (a more applied form of health literacy). This is because the former is more likely to precede our outcome of interest (Nutbeam, 2000). The items were adapted from a validated nutritional knowledge scale (Parmenter & Wardle, 1999) and focussed on four food constituents that are generally linked to unhealthy outcomes: added sugars, fats, saturated fats and salt. We adjusted the items where needed to only include products widely available in the Netherlands. The respondents were asked whether each of the four food elements was present in certain products (the precise wording can be found in the Supplementary Material). Correct answers were coded as 1 and incorrect ones as 0. We included a "don't know" option (also coded as 0) to minimize the effect of guessing. By emphasizing that our interest was in the facts known by the public at large, the respondents were actively encouraged to use this answer when they were uncertain about the correct response. The variable for *basic nutritional knowledge* was calculated as the total score for all 12 items, with no allowance for missing values. A higher score represented more nutritional knowledge.

We added the following as additional control variables: *age* in years; *gender* (0 for male, 1 for female); *ethnicity* (0 for native Dutch, 1 for non-native Dutch); *children in the household* (0 for no children, 1 for one or more); and *partner in the household* (0 for no, 1 for yes). Descriptive statistics for all the variables are reported in the Supplementary Material.

Analytic strategy

The analysis included pairwise correlation analyses using Pearson's r to assess how level of education, the uptake of institutional nutrition information and the two aspects of anti-institutionalism

were linked among the public at large. We also conducted analyses of variance (ANOVA) using a post hoc Scheffe test to uncover educational differences in the levels of information use, institutional distrust and antipaternalism. We then performed linear regression analyses to test the strength of the association between education and institutional distrust and antipaternalism, taking into account the control variables. A separate regression analysis was conducted for each mediator.

Linear regression analyses were also carried out to help us determine the need for a mediation analysis, with the uptake of institutional information as the dependent variable. This identified changes in the association between education and the use of information when institutional distrust and antipaternalism were added. A subsequent Wald test was employed to examine the potential moderating effects of our hypothesized mediators. The results gave us no reason to assume moderation ($F(2, 1608) = 2.04; p = 0.13$ for *institutional distrust*; $F(2, 1608) = 0.43; p = 0.65$ for *antipaternalism*). We therefore conducted a decomposition analysis using the Karlson–Holm–Breen (KHB) method (Karlson et al., 2012). As our main predictor (educational level) was an ordinal-level dummy variable, the KHB analysis separately compared both medium-educated individuals and more-educated individuals with the reference category, less-educated individuals, rather than showing a singular education effect.

Finally, we conducted a sensitivity analysis in which we did not control for conventional explanations (household income, financial stress and nutritional knowledge). This was used to assess whether or not the mediation effect was overestimated in the main analysis. It also allowed us to conduct the analysis with more respondents, as there were approximately 20% fewer valid responses for the variable for financial stress (imported from a different dataset) than for the other core variables.

RESULTS

There was a substantial negative relationship between information uptake and both institutional distrust ($r = -0.31, p < 0.001$) and antipaternalism ($r = -0.33, p < 0.001$). Additionally, Table 1 reveals significant educational differences in the uptake of nutrition information, institutional distrust and antipaternalism. Closer inspection using a post hoc Scheffe test identified that only the differences between less- and medium-educated individuals, and less- and more-educated individuals were significant for information uptake. All the between-group differences were significant for institutional distrust and antipaternalism.

Both institutional distrust and antipaternalism were still significantly associated with education when controlling for standard sociodemographic control variables (Table 2). Moreover, Table 2 shows that the differences between less- and more-educated individuals in terms of institutional distrust and antipaternalism were far greater than between the less- and medium-educated respondents.

Model 1 in Table 3 shows that both medium- and more-educated respondents use institutional nutrition information more than their less-educated counterparts when controlling for all the control variables, including those accounting for conventional explanations of the limited information uptake by the latter group. Greater financial stress was, as expected, associated with less use of institutional nutrition information. Meanwhile, the uptake of information was more substantial among those with more nutritional knowledge or a higher household income, in line with conventional theorizing. Nevertheless, the education gap in that uptake remains substantial when taking these patterns into account.

TABLE 1 ANOVA for educational differences in dependent and mediating variables, with the post hoc Scheffe test for significance of differences

	Mean	F	Between-group comparison	p
Use of institutional nutrition information				
Less educated	3.73	16.80***	vs. more educated	<0.001
Medium educated	3.98		vs. less educated	0.002
More educated	4.13		vs. medium educated	0.074
Institutional distrust				
Less educated	3.73	71.76***	vs. more educated	<0.001
Medium educated	3.42		vs. less educated	0.001
More educated	2.83		vs. medium educated	<0.001
Antipaternalism				
Less educated	5.17	72.23***	vs. more educated	<0.001
Medium educated	4.77		vs. less educated	<0.001
More educated	4.27		vs. medium educated	<0.001

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

The anti-institutionalism variables were included in Model 2 in Table 3, showing that higher levels of institutional distrust and antipaternalism are related to a lower uptake of nutrition information. Moreover, both the size of the coefficients and the increase in the R^2 from Model 1 to Model 2 point to the substantially greater explanatory strength of the newly added variables than for those indicating conventional explanations. In addition, none of the latter variables were significantly associated with information uptake after the inclusion of institutional distrust and antipaternalism. Interestingly, the difference in the use of institutional nutrition information between the more-educated and less-educated had largely disappeared in Model 2, while the difference between medium- and less-educated individuals was attenuated to a much lesser extent. This implies that the difference between less- and more-educated individuals is largely explained by institutional distrust and antipaternalism, while the difference between less- and medium-educated individuals is much less so.

Table 4 provides the results of our decomposition analysis used to test for mediation. The first row of Table 4 shows how education is associated with information uptake when anti-institutionalism predictors were not included in the model, but when all control variables were included, mirroring Model 1 in Table 3. The second row depicts how much of this association persisted after institutional distrust and antipaternalism was added (thus reflecting Model 2 in Table 3). The third row shows the difference between the two former rows. The lower part of Table 4 reports to what extent each of the two anti-institutionalism indicators accounts for educational differences in institutional nutrition information.

Taken together, the anti-institutionalism mediators accounted for 25% of the difference between less- and medium-educated individuals. However, the margins of error were too large to make any strong claims about whether, and to what extent, anti-institutionalism underlies the gap in the uptake of institutional nutrition information between those two educational categories. In contrast, anti-institutionalism does significantly account for the gap between less- and more-educated individuals (that is, for 72%). More precisely, institutional distrust accounted for 37%, and antipaternalism for 35%, of the difference in the uptake of institutional nutrition information between less- and more-educated individuals.

TABLE 2 Multiple regression analysis for institutional distrust and antipaternalism, unstandardized coefficients, $n = 1623$

	Institutional distrust	Antipaternalism
Educational level		
Less educated	Ref.	Ref.
Medium educated	-0.30** (0.10)	-0.28** (0.10)
More educated	-0.93*** (0.10)	-0.77*** (0.09)
Controls		
Age	-0.00 (0.00)	0.01*** (0.00)
Gender	-0.02 (0.08)	0.01 (0.07)
Ethnicity	0.17 (0.10)	-0.20 (0.10)
Children in household	0.13 (0.10)	0.17 (0.09)
Partner in household	-0.05 (0.08)	-0.01 (0.08)
Constant	3.89*** (0.23)	4.25*** (0.22)
R^2	0.06	0.07

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Sensitivity analysis

The sensitivity analysis (see Supplementary Material) revealed similar patterns to those of the main analysis, albeit somewhat more outspoken: (1) anti-institutionalism accounts slightly more for the difference in the uptake of nutritional information between less- and more-educated individuals (institutional distrust accounts for 39% and antipaternalism for 38%) and (2) anti-institutionalism does significantly account for the difference in nutritional information uptake between the less and medium educated (institutional distrust accounts for 21% and antipaternalism for 23%). The second finding is most likely due to greater statistical power arising from the inclusion of more respondents in these models. Nevertheless, the explained difference between less- and medium-educated individuals was still less than between less- and more-educated individuals.

DISCUSSION

Echoing a recent call in *Sociology of Health & Illness* to assess the role of power relations in health inequalities (McCartney et al., 2020), this study explored the role of less-educated individuals' anti-institutionalism in their often-reported limited uptake of nutritional health

TABLE 3 Multiple regression analysis for the use of institutional nutrition information, unstandardized coefficients, $n = 1623$

	Model 1	Model 2
Educational level		
Less educated	Ref.	Ref.
Medium educated	0.25** (0.09)	0.19* (0.08)
More educated	0.32*** (0.09)	0.09 (0.09)
Institutional distrust		-0.23*** (0.02)
Antipaternalism		-0.21*** (0.02)
Controls		
Household income (log)	0.18* (0.09)	0.09 (0.08)
Financial stress	-0.05* (0.02)	-0.02 (0.02)
Basic nutrition knowledge	0.06*** (0.01)	0.02 (0.01)
Age	0.01* (0.00)	0.01*** (0.00)
Gender	0.19** (0.07)	0.20** (0.06)
Ethnicity	0.07 (0.09)	0.03 (0.08)
Children in household	-0.14 (0.09)	-0.08 (0.08)
Partner in household	0.01 (0.08)	0.09 (0.08)
Constant	1.63** (0.70)	4.04*** (0.67)
R^2	0.05	0.18

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

information. Using a survey conducted with a panel representative of the Dutch population in 2020, we found that two aspects of anti-institutionalism—institutional distrust and antipaternalism—accounted for a substantial part of the educational differences in the uptake of institutional nutrition information, while taking conventional complementing explanations into account.

Our results revealed that anti-institutionalism explained a large part of the difference in nutritional information uptake between less- and more-educated individuals, but much less for the

TABLE 4 Decomposition of total association between education and use of institutional nutrition information into direct and indirect association via indicators for anti-institutionalism, $n = 1,623$

	Less vs. medium education	Less vs. more education	Per separate effect	Total anti-institutionalism	Per separate effect	Total anti-institutionalism
Total association education and information uptake	0.25** (0.08)	0.32*** (0.08)				
Direct association education and information uptake	0.19* (0.08)	0.09 (0.09)				
Indirect association education and information uptake	0.06 (0.05)	0.23*** (0.05)				
Indirect association of education via ...						
			Per separate effect	Total anti-institutionalism	Per separate effect	Total anti-institutionalism
Institutional distrust	0.02 (0.02)		10%		0.12*** (0.03)	37%
				25%		72%
Anti-paternalism	0.04 (0.02)		15%		0.11*** (0.02)	35%

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

difference between less- and medium-educated individuals. This is in line with previous research in a variety of fields, indicating that educational differences in affinity with all kinds of institutions, e.g. politics, science, health and the judiciary, most notably reflect a distance between those who attained a degree at an (applied) university versus those who did not (e.g. Lareau, 2015; Noordzij et al., 2021c). Tellingly, levels of anti-institutionalism in our analyses also differed far less between less- and medium-educated, than between less- and more-educated individuals.

We also found that financial circumstances and nutritional knowledge seemed to be less relevant for predicting nutrition information uptake than suggested by previous studies. A likely cause for the small association in this study, as compared to common findings in e.g. US-based studies, is the relatively small income inequality in the Netherlands. In less egalitarian countries, the relevance of economic factors may be higher. Note moreover that in the Dutch case, the association of financial circumstances and nutritional knowledge with information uptake was even smaller when they were modelled simultaneously with anti-institutionalism. This could mean two things: (1) the relationship between financial circumstances and nutritional knowledge on the one hand, and nutritional information uptake on the other, is spurious; or more likely, (2) their link with that uptake (partly) runs via anti-institutionalism. On the latter basis, the results of this study should therefore not be read as discouraging attempts to make health information more sensitive to the situations of the financially deprived, or to connect it to people with less health knowledge.

It is also relevant to note that the present study focussed on the *uptake* of nutrition information, which does not necessarily imply *compliance* with it. In fact, nutrition information uptake rarely brings about a considerable change in diet, especially among individuals with a lower socioeconomic status like the less-educated individuals in this study (Koç & Van Kippersluis, 2017; Plessz et al., 2019). Considering the continuous use of nutrition information as a health promotion effort, however, this study attempted to pinpoint reasons for its nonuptake, which simultaneously serves as a strategic case that aids improving our understanding of the relevance of education-based sociocultural differences when it comes to health promotion more generally.

Achieving dietary change and beneficial health outcomes would require a concerted effort also including less agentic health interventions. As anti-institutionalism affects the uptake of the least intrusive form of health promotion, it is highly probable that it is also relevant for other health promotion efforts. We expect two main ways in which anti-institutionalism affects health promotion interventions: (1) directly, affecting, for instance, the public acceptability of various forms of health promotion, and (2) indirectly, where aversion to one form (e.g. intrusive structural interventions) may further affect attitudes towards other interventions from the same (or a similar) source. In short, we consider information uptake to be a single empirical example of the relevance anti-institutionalism holds for health promotion, with more research being clearly needed to further explore the extent of this relevance, both in relation to other health-related outcomes (e.g. smoking and drinking) and other intervention types.

Clearly, future information-based interventions could be made more effective and equitable if they are to somehow avoid evoking feelings of misrecognition among less-educated individuals. Although this connects with studies arguing for the importance of similarity or relatability in health interventions (e.g. Young, 2015), our findings suggest that this is not necessarily about using a messenger who is similar to the receiver but using one who is, primarily, not perceived to be elitist and meddling. This insight identifies a social pathway through which fundamental causes of health inequalities operate (cf. Link & Phelan, 1995), which adds to extant theorizing: both to McCartney and colleagues' "framework identifying important sources of power" (2020, p. 34) relevant for studying those pathways and the literature on the role of stigma in that regard

(Hatzenbuehler et al., 2013). In both cases, a worthwhile addition would be to include explicit attention for the power imbalance and cultural distance between institutions and professionals responsible for health interventions on the one hand and less-educated citizens on the other, and the feelings of misrecognition the former inspire in the latter. Such institutions “are infused with the implicit but distinctive assumptions, values and taken-for-granted knowledge of the middle class” (Ridgeway, 2014: 11), which especially breeds stigmatizing tendencies towards less-educated individuals and subsequently their anti-institutionalism (cf. Noordzij et al., 2021a, 2021c; Visser et al., 2021).

Future research can further scrutinize the role of anti-institutionalism in less-educated individuals’ aversion to institutional health information. Previous studies of that kind focussed on, e.g. menu labelling at fast food restaurants (Schindler et al., 2013), or the uptake of antismoking information (Kim et al., 2018). However, in both examples, the consumption itself was primarily discussed, instead of the information that should inspire restraint in the first place. Tellingly, a study that did actually discuss the latter revealed the role of distrust in ‘public intellectuals’, including the government and public health advocates, in the limited acceptance of antismoking information by those in the lower strata (Veldheer et al., 2019). Taking in mind the common communication strategy of connecting health information to official sources (e.g. Cummings, 2014), together with indications that this may work counterproductively (e.g. Song et al., 2018), it is relevant to study how attitudes towards health information differ when connotations with health promotion institutions are stripped (e.g. by keeping the explicit naming of institutional connections to a minimum, or even fully removing it).

This study has some limitations. First, the use of a cross-sectional survey did not enable us to conduct strict tests of the causality implied by our theorizing. Nevertheless, we do not anticipate that our study will suffer from reversed causality, as educational attainment is measured as past attainment, thus preceding both anti-institutionalism and the use of nutrition information measured as contemporary attitudes and behaviour. Furthermore, it is implausible that the use of nutrition information affects such deep-rooted attitudes as institutional distrust and anti-paternalism. Additionally, we have controlled for potential confounding variables by including both various control variables and variables accounting for conventional explanations for lower information uptake. However, experimental research is required to test rigorously whether anti-paternalism and institutional distrust *cause* a lower uptake of information among less-educated individuals. Second, the use of institutional nutrition information is self-reported, which might have led to measurement errors.

CONCLUSION

In summary, this study has demonstrated that less-educated individuals’ lower uptake of institutional nutrition information can most notably be attributed to their anti-institutionalist tendencies, and far less so to conventional explanations focussing on their financial circumstances or limited nutritional knowledge. This implies that current forms of institutional information on nutrition are incongruous with less-educated receivers’ life worlds, as these evokes perceptions of elitism and inspires feelings of misrecognition among that particular group—providing yet another social pathway in how a fundamental cause like power inequalities can inspire health inequalities.

In addition to the various promising efforts to make health promotion less reliant on financial and cognitive resources, it holds promise to consider whether health promotion strategies can

be made more effective and equitable by being sensitive to how contemporary power dynamics can breed less-educated individuals' anti-institutionalism. This seems to call for rather straightforward practical action geared towards addressing health inequalities, as it asks for altering communication strategies by institutions involved in health interventions. A major challenge in this regard seems creating awareness of the stigmatizing tendencies towards the lifestyles of less-educated citizens by institutions that aim to improve their wellbeing.

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AUTHOR CONTRIBUTIONS

Tim van Meurs: Conceptualization (equal); Formal analysis (lead); Methodology (equal); Writing – original draft (lead); Writing – review & editing (equal). **Joost Oude Groeniger:** Conceptualization (equal); Formal analysis (supporting); Methodology (equal); Writing – review & editing (equal). **Willem de Koster:** Conceptualization (equal); Funding acquisition (equal); Methodology (equal); Writing – review & editing (equal). **Jeroen van der Waal:** Conceptualization (equal); Funding acquisition (equal); Methodology (equal); Writing – review & editing (equal).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study will be made freely available for academic research in the LISS Data Archive (which has the international Data Seal of Approval). Currently, restrictions apply to the availability of these data, which were used under embargo for the current study.

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ENDNOTE

¹ In addition to so-called 'food deserts', which are not discussed here as they are largely absent in the Netherlands (Helbich et al., 2017).

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