



Original research article

Misinformation, vaccine hesitancy, and health marketing communication: associations between exposure to media narratives, trust in sources, and vaccination intention in the Czech Republic

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Abstract

This quantitative cross-sectional study examines the relationship between exposure to critical vaccination narratives, trust in information sources, perceived quality of official communication, and vaccination intention among adults in the Czech Republic.

Data were collected through an anonymous online questionnaire from 526 respondents recruited via a professional online panel. Key variables were operationalised as aggregated indices capturing exposure to misinformation narratives, trust in official sources, perceived positive modality of official communication, overall trust in vaccination, and vaccination intention. Data were analysed using descriptive statistics and Pearson correlation coefficients; the study does not claim causal effects.

Exposure to critical narratives was negatively associated with vaccination intention ($r = -0.225$; $p < 0.001$). Trust in official sources showed substantially stronger positive associations with vaccination intention ($r = 0.600$; $p < 0.001$) and overall trust in vaccination ($r = 0.695$; $p < 0.001$). A positive and reassuring communication style was also significantly linked to higher trust in vaccination ($r = 0.571$; $p < 0.001$).

The findings indicate that declining institutional trust may be a more decisive factor in vaccine hesitancy than exposure to misinformation alone. Practically, the study suggests that public health campaigns and health marketing communication should prioritise long-term trust building, clarity, segmentation, and respectful behaviour change communication rather than relying only on factual correction of misinformation.

Keywords: Health Marketing; Health misinformation; Institutional trust; Public Health Communication; Social Marketing; Trust in health institutions; Vaccination intention

Introduction

Vaccinations are one of the most important tools of modern medicine and contribute significantly to reducing the morbidity and mortality of infectious diseases. Nevertheless, in recent years, a number of countries have seen an increase in uncertainty, hesitation, or refusal to vaccinate. A global analysis by the GBD shows that despite long-term growth in vaccination coverage, there has been a gradual slowdown, stagnation and, in some regions, even a decline in coverage since 2010, with the situation further exacerbated by the COVID-19 pandemic (GBD 2023 Vaccine Coverage Collaborators, 2025). These trends are associated with a combination of factors, including changes in the information environment, increasing individualisation of health decisions, changes in social norms, and declining trust in health institutions.

The SAGE strategic group has defined vaccine hesitancy as the delay or refusal of vaccination despite the availability of vaccination services (MacDonald and SAGE Working Group, 2015). SAGE has also identified three main determinants: confidence, complacency, and convenience. The literature repeatedly confirms that attitudes towards vaccination are not only the result of rational consideration of facts, but are influenced by emotions, identity, social influences, and experience with the healthcare system (Dubé et al., 2015; Goldstein et al., 2015).

The digital environment has influenced the way people obtain health information. Social networks enable the rapid dissemination of content that can fuel fears, relativise expert recommendations, or directly spread false information. Analyses show that negative messages about vaccination have a higher dissemination rate than neutral or positive information (Koskan et al., 2022; Melović et al., 2020). A systematic

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scoping review of health misinformation identifies vaccines as one of the most common topics for misleading or harmful content (Suarez-Lledo and Álvarez-Gálvez, 2021). This dynamic contributes to increased uncertainty and makes part of the population more susceptible to false narratives.

Trust in expert sources is one of the key predictors of willingness to accept vaccination. Studies focusing on parents confirm the importance of good communication with doctors, clear explanations of risks and benefits, and a respectful approach (Tal et al., 2021). Lack of time, trivialisation of concerns, and previous negative experiences are among the factors that reinforce hesitancy. Foreign research also shows that trust in institutions – such as ministries of health or national health agencies – is significantly associated with higher adherence to vaccination programmes.

From the perspective of health marketing and public health communication, vaccine hesitancy can also be understood as a problem of trust, relationship management, and behaviour change. Communication about vaccination is not only the transfer of biomedical facts; it is also a strategic process through which institutions create perceived credibility, reduce barriers, respond to concerns, and strengthen the perceived value of preventive behaviour. This perspective is important because campaigns that rely exclusively on correcting misinformation may fail if the audience does not trust the messenger or perceives official communication as coercive.

Similar conclusions are confirmed by data from the Czech Republic. Surveys by NAPO and Incomind show that the majority of the population does not display extremely negative attitudes, but rather moderate hesitancy. The most common concerns are the risk of adverse effects and low trust in pharmaceutical companies, but decision-making is significantly influenced by communication with doctors and trust in professional institutions (Incomind and NAPO, 2025).

Based on these facts, this study focuses on the relationships between exposure to critical narratives about vaccination, trust in sources of health information, and perceived quality of official communication. The aim is not to prove causality, but to describe associations that can help to better understand patient decision-making and support ethically responsible health marketing communication in the Czech environment.

Aim and objectives of the study

The main objective of this study is to clarify the relationships between exposure to critical or negative narratives about vaccination, trust in information sources, perceived quality of official communication about vaccination and vaccination intention among adults in the Czech Republic, and to derive implications for effective and ethically responsible health communication and health marketing practice.

The related sub-objectives are:

- to describe the distribution of exposure to critical or negative narratives about vaccination among respondents;
- to examine the association between exposure to critical narratives and vaccination intention;
- to examine the association between trust in official sources of information and vaccination intention;
- to examine the association between perceived positive modality of official communication and overall trust in vaccination;
- to interpret the findings in relation to public health communication, social marketing, relationship marketing, and behaviour change communication.

The study focuses exclusively on identifying statistical associations between variables, not on causal interpretation. This objective is consistent with the cross-sectional design and the use of descriptive statistics and correlation analyses.

Literature review

Current literature provides a comprehensive overview of the factors influencing public attitudes towards vaccination. One of the basic concepts is vaccine hesitancy as a multidimensional phenomenon that includes individual, social, psychological, and systemic determinants (MacDonald and SAGE Working Group, 2015). Research shows that trust in health institutions, the quality of communication with healthcare providers, and the nature of personal experience are crucial in shaping willingness to vaccinate (Dubé et al., 2015; Goldstein et al., 2015).

Current research on vaccine hesitancy is increasingly anchored in behavioural models of health decision-making, which allow for a systematic explanation of the relationship between risk perception, trust, and intention to engage in preventive behaviour. One of the most widely used conceptual frameworks is the Health Belief Model (HBM), which explains health behaviour through perceptions of vulnerability, disease severity, expected benefits, barriers, and cues to action. Empirical studies confirm that these constructs are significantly related to willingness to accept vaccination and to the degree of hesitancy. Longitudinal analyses show that perceived severity and susceptibility to disease are significantly related to vaccination intention and subsequent behaviour (Fall et al., 2018). Similarly, other studies confirm that the perception of benefits and barriers is one of the most consistent predictors of vaccination decisions, with higher perceived barriers increasing hesitancy and expected benefits decreasing it (Chen et al., 2021). Comparative studies also suggest that HBM shows stable explanatory power across populations and health contexts (Fang et al., 2025).

In addition to HBM, the Theory of Planned Behaviour is frequently used in the literature. It understands health decision-making as a function of attitudes, subjective norms, and perceived behavioural control. Combined models integrating elements of both theories show increased predictive power in explaining vaccination intention, suggesting that decision-making is the result of the interaction between individual perceptions and social influences. Empirical analyses also show that beliefs about the safety and efficacy of vaccines significantly predict their acceptance, even when controlling for sociodemographic factors (Karlsson et al., 2019).

Trust also plays a key role in current conceptual frameworks, understood as a mediating mechanism between information and health behaviour. A lack of institutional trust is systematically associated with a lower likelihood of vaccination, as confirmed by analyses showing significantly lower vaccination acceptance among people who distrust public institutions (El-Elmat et al., 2021). Conversely, higher trust in professional authorities and health systems is associated with higher vaccination rates and willingness to accept further doses of vaccines (Murphy et al., 2021). More recent theoretical approaches emphasise the multidimensional nature of vaccination confidence, including trust in expertise, institutions, and communication processes, with this trust being a key component of vaccination demand in a global context (Larson et al., 2018).

Trust in paediatricians or general practitioners significantly influences parents' decisions about childhood vaccination. Tal et al. (2021) show that parents with higher trust in professional institutions and healthcare providers are more likely to

adhere to the vaccination schedule. Conversely, trust in informal online groups or alternative sources predicts lower vaccination rates. Psychosocial factors such as family experience, risk perception, social pressure, and community attitudes also have an influence.

Studies focusing on communication emphasise that the digital environment has an ambivalent effect. On the one hand, it offers opportunities for targeted communication, but on the other hand, it facilitates the spread of misinformation (Koskan et al., 2022). Systematic reviews show that vaccination is one of the most common topics for health misinformation on social media (Suarez-Lledo and Álvarez-Gálvez, 2021). Melović et al. (2020) confirm that the online environment significantly influences attitudes towards vaccination, even if users do not actively participate in discussions.

Particular attention is paid to campaigns aimed at increasing vaccination prevalence. Analyses show that the most effective strategies combine personal communication by healthcare professionals with segmented public communication and the use of social marketing principles (Dubé et al., 2015). Research on HPV vaccination shows that integrated communication activities, especially those focused on service availability and barrier reduction, have a significant impact on vaccination rates (Štrbac et al., 2025).

For health marketing, these findings imply that vaccination communication should be assessed not only according to message reach, but also according to source credibility, perceived tone, audience segmentation, and relationship quality. Social marketing contributes by translating preventive behaviour into a value proposition that is meaningful for the target population. Relationship marketing contributes by emphasising continuity, credibility and trust between institutions, professionals and citizens. Behaviour change communication contributes by linking message design to perceived barriers, norms, and cues to action.

Although there is extensive literature on the determinants of vaccine hesitancy, relatively few studies focus on the combined relationship between exposure to unverifiable information, trust in information sources, communication quality, and

vaccination intention in specific national contexts. This paper therefore focuses on the Czech environment, where such an analysis remains limited.

Materials and methods

Study design and data collection

The research was conducted as a quantitative cross-sectional questionnaire survey focusing on attitudes towards vaccination, sources of information about vaccination, and the perceived modality of official communication practices. Data were collected through an online questionnaire in the Czech language. The cross-sectional design allows the identification of associations between variables within the stated fieldwork period, but does not allow causal inference.

Participation was voluntary and anonymous. Only complete questionnaires in which all items included in the construction of the analysed indices were answered were included in the analysis. A total of 526 respondents were included. Respondents were recruited through the professional online panel Instant Research by Ipsos, a member of SIMAR, which follows professional standards for market and social research (Table 1).

Research instrument and operationalisation

The questionnaire was designed to capture the extent of respondents' exposure to different types of narratives about vaccination, trust in individual sources of information, perceived characteristics of official communication about vaccination, and overall attitudes towards vaccination, including willingness to be vaccinated. The instrument consisted of thematically related blocks that were subsequently aggregated into composite indices. The full list of items used for the analysed indices is provided in [Suppl. materials – Appendix 1](#).

The available manuscript file did not include the exact verbal anchors of the response scale. The instrument is therefore described as consisting of ordered Likert-type items, coded so that higher values indicate a higher level of the analysed con-

Table 1. Sample and study-design characteristics available for the revised manuscript

Characteristic	Information reported in the revised manuscript	Methodological note
Analytical sample size	526 respondents	Complete
Target population	Adults in the Czech Republic	As stated in the study objective
Recruitment source	Professional online panel, Instant Research by Ipsos	Online panel recruitment
Survey mode	Anonymous online questionnaire in Czech	Complete
Inclusion criterion for analysis	Complete responses for all items used in the analysed indices	Complete
Fieldwork period		To be confirmed from the Ipsos panel documentation before resubmission
Sociodemographic composition	Not available in the uploaded manuscript file or panel export	Full assessment of representativeness is therefore limited
Gender	Not available	Not reconstructed or estimated
Age	Not available	Not reconstructed or estimated
Education	Not available	Not reconstructed or estimated
Region	Not available	Not reconstructed or estimated
Income or subjective economic status	Not available	Not reconstructed or estimated.

Note: The manuscript file available for this revision did not contain a sociodemographic panel export. Therefore, the sample structure by gender, age, education, region, and income was not reconstructed or estimated. This absence is treated as a documentation and generalisability limitation rather than replaced by unverifiable values.

struct after reverse coding where required. The absence of the original response-scale documentation is acknowledged as a limitation of manuscript reporting.

The content of the indices was developed from the vaccination-hesitancy literature and from established theoretical frameworks, especially the SAGE definition of vaccine hesitancy, the Health Belief Model, the Theory of Planned Behaviour, and research on vaccination confidence and trust (Chen et al., 2021; Fall et al., 2018; Larson et al., 2018; MacDonald and SAGE Working Group, 2015). Items were grouped according to defined theoretical domains – exposure to critical narratives, trust in official sources, perceived positive modality of official communication, global trust in vaccination and vaccination intention – to provide a transparent conceptual rationale. This literature-based alignment does not constitute independent expert validation of the index structure.

The selection, grouping, and aggregation of items into the five composite indices constitute an original proposal devel-

oped by the author team for this study. The proposed index structure was not evaluated by experts outside the author team and was not subjected to a Delphi procedure or another formal expert-consensus method.

Before the main data collection, the questionnaire was pilot tested with 15 participants. The pilot testing served as a preliminary check of item comprehensibility, questionnaire flow, and technical functionality of the online form. Given its small size, the pilot was not used for statistical validation of the indices; the analytical dataset reported in this article consists of 526 completed questionnaires from the online panel.

The categories used in the descriptive tables were created by dividing the possible point range of each index into four ordered levels. The quartile labelling was used to support interpretability in descriptive presentation; correlation analyses were conducted on the underlying index scores rather than on the descriptive labels (Table 2).

Table 2. Operationalisation and index-construction procedure

Index	Number of items	Construct captured	Coding and interpretation	Reliability/validity status in the revised manuscript
Exposure to critical or negative narratives	10	Encountering misinformation or critical arguments concerning vaccine safety, natural immunity, pharmaceutical interests and herd immunity	Items summed after coding in the same direction; higher values indicate higher exposure to critical narratives	Author-developed, literature-aligned aggregate score; no external expert evaluation or formal psychometric validation was performed. Internal consistency could not be calculated without respondent-level item data
Trust in official sources of information	7	Trust in doctors, medical societies, hospitals, Ministry of Health, health insurers and official campaigns	Items summed; higher values indicate stronger trust in official sources	Author-developed aggregate score; no external expert evaluation was performed. Internal consistency could not be calculated without respondent-level item data
Perceived positive modality of official communication	2	Positive tone of official campaigns and whether materials create certainty rather than fear	Items summed; higher values indicate more positively perceived communication	Author-developed two-item aggregate indicator; no external expert evaluation was performed. Inter-item correlation or Spearman-Brown reliability could not be calculated without item-level data
Global trust in vaccination	8	Overall evaluation of vaccination as safe, useful, beneficial, and socially protective	Items summed; higher values indicate stronger trust in vaccination	Author-developed aggregate score; no external expert evaluation or formal psychometric validation was performed. Reliability could not be calculated from the available manuscript file.
Vaccination intention	6	Willingness to accept future vaccination and recommend vaccination, with concern/unnecessariness items reverse-coded	Items summed after reverse coding negatively worded items; higher values indicate stronger vaccination intention	Author-developed aggregate score; no external expert evaluation was performed. Negatively worded items require reverse coding, and internal consistency was unavailable for this revision.

Data analysis

Data analysis was performed using descriptive statistics and Pearson correlation coefficients. Descriptive statistics were used to present the distribution of the main indices. Pearson correlation coefficients were used to assess the strength and direction of linear associations between selected index scores.

Statistical significance was assessed at $p < 0.05$. The interpretation of effect size followed conventional guidance: correlations around 0.10 were interpreted as weak, around 0.30 as moderate, and around 0.50 or higher as strong. Because the research design was cross-sectional and all variables were measured in one questionnaire, the results are interpreted as associations rather than causal effects.

The original manuscript mentioned regression models; this wording has been removed because the reported results

are based on descriptive statistics and Pearson correlation analyses only.

Results

The results are presented in four steps: first, the distribution of exposure to critical narratives is described; second, vaccination intention is presented; third, the relationships between exposure, trust and intention are reported; and fourth, the role of perceived positive modality of official communication is evaluated. The interpretation focuses on the strength and direction of associations rather than causal explanations.

Approximately one-third of respondents showed very strong exposure to critical or negative narratives about vacci-

nation (34.0%), while 14.4% were in the very low exposure category. This indicates that critical vaccination narratives were a visible part of the respondents' information environment, but exposure was not evenly distributed across the sample (Table 3).

Table 3. Distribution of the index of exposure to critical or negative narratives about vaccination

Degree of exposure to narratives	Number of responses (n)	Proportion (%)	Cumulative proportion (%)
Very low	76	14.4	14.4
Weak	158	30.0	44.5
Stronger	113	21.5	66.0
Very strong	179	34.0	100.0
Total	526	100.0	–

Vaccination intention was concentrated mainly in the weak and stronger categories. Less than one-fifth of respondents showed very low vaccination intention, whereas 11.8% showed very strong intention. This pattern suggests that the sample is characterised primarily by varying degrees of hesitancy rather than by uniformly strong vaccine rejection (Table 4).

Table 4. Distribution of the vaccination intention index

Vaccination intention score	Number of responses (n)	Proportion (%)	Cumulative proportion (%)
Very low	104	19.8	19.8
Weak	181	34.4	54.2
Stronger	179	34.0	88.2
Very strong	62	11.8	100.0
Total	526	100.0	–

Most respondents reported at least a stronger level of trust in official sources of information. This distribution is important for interpreting the correlation results, because trust in official sources was one of the strongest correlates of vaccination intention and global trust in vaccination (Table 5).

Table 5. Distribution of the trust index in official sources of information

Level of trust in official sources	Number of responses (n)	Percentage (%)	Cumulative share (%)
Very weak	48	9.1	9.1
Weak	159	30.2	39.3
Stronger	236	44.9	84.2
Very strong	83	15.8	100.0
Total	526	100.0	–

More than half of respondents evaluated the positive modality of official communication as very weak or weak. This suggests that official communication may be visible but not necessarily perceived as reassuring, autonomy-supportive, or confidence-building by all audience segments (Table 6).

Table 6. Distribution of the positive modality index of official sources of information

Level of perceived positive modality of official sources	Number of responses (n)	Share (%)	Cumulative share (%)
Very weak	75	14.3	14.3
Weak	221	42.0	56.3
Stronger	190	36.1	92.4
Very strong	40	7.6	100.0
Total	526	100.0	–

The original table label was clarified: this table refers to global trust in vaccination, not to trust in official sources. Most respondents reported stronger or very strong trust in vaccination as a public health measure (Table 7).

Table 7. Distribution of the global trust in vaccination index

Level of global trust in vaccination	Number of responses (n)	Share (%)	Cumulative share (%)
Very low	29	5.5	5.5
Weak	74	14.1	19.6
Stronger	261	49.6	69.2
Very strong	162	30.8	100.0
Total	526	100.0	–

Associations between critical narratives, trust, and vaccination intention

Higher exposure to critical or negative narratives about vaccination was associated with lower vaccination intention ($r = -0.225$; $p < 0.001$). The effect was statistically significant but weaker than the associations related to trust. This result indicates that exposure to critical narratives is relevant to hesitancy, but it does not appear to be the strongest factor in the analysed set of variables.

Trust in official sources showed a strong positive association with vaccination intention ($r = 0.600$; $p < 0.001$). Respondents who trusted doctors, healthcare institutions, and official communication channels reported substantially higher willingness to be vaccinated. This finding suggests that source credibility may have greater practical importance than exposure to critical narratives alone.

Perceived positive modality of official communication was strongly associated with global trust in vaccination ($r = 0.571$; $p < 0.001$). Communication that respondents perceived as positive, reassuring, and oriented towards prevention was associated with stronger trust in vaccination. Trust in official sources was also strongly associated with global trust in vaccination ($r = 0.695$; $p < 0.001$) (Table 8).

Table 8. Selected Pearson correlations between key indices

Association tested	Pearson <i>r</i>	<i>p</i> -value	Interpretation
Exposure to critical narratives – vaccination intention	–0.225	<0.001	Weak-to-moderate negative association
Trust in official sources – vaccination intention	0.600	<0.001	Strong positive association
Perceived positive modality – global trust in vaccination	0.571	<0.001	Strong positive association
Trust in official sources – global trust in vaccination	0.695	<0.001	Strong positive association

Discussion

The main finding of this study is that exposure to critical or negative narratives about vaccination is significantly associated with lower vaccination intention, but the strength of this relationship is weaker than the relationships associated with trust in official sources of information. This result is consistent with the broader literature, which understands vaccine hesitancy as a multidimensional phenomenon rather than a simple response to isolated misinformation (Dubé et al., 2015; MacDonald and SAGE Working Group, 2015).

The negative association between exposure to critical narratives and vaccination intention corresponds with studies showing that online environments facilitate the spread of vaccine-related misinformation and may increase uncertainty (Koskan et al., 2022; Melović et al., 2020; Suarez-Lledo and Álvarez-Gálvez, 2021). However, the observed correlation was only weak-to-moderate. This difference is important: in the Czech sample, exposure to critical narratives was relevant, but it did not explain attitudes as strongly as trust-related variables. This suggests that misinformation may operate less as an independent cause and more as a factor that becomes influential when institutional trust is already weakened.

The strong association between trust in official sources and vaccination intention supports previous findings that institutional and professional trust are central to vaccine acceptance (El-Elmat et al., 2021; Larson et al., 2018; Murphy et al., 2021). It is also consistent with studies emphasising the role of healthcare professionals as trusted mediators of information (Tal et al., 2021). Compared with the weaker association between exposure to critical narratives and intention, this finding indicates that trust-building may be a more strategic intervention target than simple correction of false claims.

The finding that perceived positive modality of official communication was strongly associated with global trust in vaccination adds an important communication dimension. Goldstein et al. (2015) and Dubé et al. (2015) argue that communication about vaccination should address concerns respectfully and avoid reinforcing resistance. The present results support this position: respondents who perceived official communication as reassuring and prevention-oriented also reported higher trust in vaccination. This does not mean that communication should avoid risks or uncertainty; rather, it suggests that transparency, clarity, and respect may be more productive than fear-based or moralising messages.

From the perspective of health marketing, the results have implications for three complementary approaches. First, social marketing should not focus only on increasing exposure to pro-vaccination messages, but should segment audiences according to trust, perceived barriers and degree of hesitancy. For respondents with lower trust, repeated factual messaging alone may be insufficient. Second, relationship marketing is relevant because vaccination decisions are influenced by the

long-term credibility of physicians, institutions, and public authorities. Building a stable relationship with citizens before periods of crisis may increase the effectiveness of communication during epidemics or vaccination campaigns. Third, behaviour change communication should link messages to perceived benefits, barriers, norms, and cues to action, as suggested by HBM and TPB-based research (Chen et al., 2021; Fall et al., 2018; Fang et al., 2025).

A broader public-health perspective also requires attention to the service environment in which communication takes place. Although not vaccination-specific, Seberini et al. (2021) identified severe capacity constraints and insufficient integration between national and municipal social and health care services for older adults in the Gemer region of Slovakia. Their findings underscore that communication-based interventions should be considered alongside the accessibility and coordination of formal services.

The results also contribute to the Czech context. Existing Czech surveys describe moderate hesitancy, concerns about adverse effects, and distrust towards pharmaceutical companies (Incomind and NAPO, 2025). The present analysis adds that these attitudes are statistically associated with trust in official sources and with perceived communication quality. In practice, this means that campaigns should be designed not only as information campaigns, but as trust-building interventions that combine professional credibility, understandable language, audience segmentation, and respectful engagement with concerns.

A further implication concerns evaluation. Health campaigns are often evaluated through reach, impressions, or recall. The present findings indicate that communication quality indicators – such as perceived credibility, tone, clarity, and reassurance – should also be measured. These indicators may be especially important in contexts where misinformation is present but where hesitancy is shaped more strongly by trust than by exposure alone.

Limitations

Several limitations must be acknowledged. First, the study is based on cross-sectional data. The correlations reported in the results therefore cannot be interpreted causally. It is not possible to determine whether exposure to critical narratives reduces vaccination intention, whether hesitant respondents seek such narratives more often, or whether both are shaped by a third factor such as general institutional distrust.

Second, all variables were measured using self-report items in a single questionnaire. This creates a risk of self-report bias, including social desirability bias, recall bias, and subjective interpretation of communication exposure. It also creates a risk of common method bias, because the same response format and measurement context were used for both predictors and outcomes.

Third, data were collected through an online panel. Although professional panels are useful for reaching adult re-

spondents efficiently, they may underrepresent people with limited internet access, lower digital literacy, or low willingness to participate in online surveys. The generalisability of the findings should therefore be interpreted cautiously, particularly as the sociodemographic structure of the sample could not be assessed from the manuscript file available for this revision.

Fourth, the five indices are author-developed aggregate measures created by grouping thematically related items for this study. Their composition was not evaluated by experts outside the author team and was not subjected to a Delphi procedure or another formal expert-consensus method. In addition, internal consistency statistics could not be calculated because the respondent-level item dataset was not available for this revision. The results should therefore be interpreted as analyses of theoretically informed composite scores rather than fully validated scales.

Fifth, pilot testing was conducted with 15 participants before the main survey. This strengthens the basic comprehensibility and usability of the questionnaire, but it does not substitute for formal psychometric validation of the indices because of the small pilot sample and the absence of item-level reliability analysis.

Conclusion

The main objective of this study was to clarify the relationships between exposure to critical or negative narratives about vaccination, trust in information sources, perceived quality of official communication, and vaccination intention among adults in the Czech Republic. The results show statistically significant associations between all key constructs analysed.

Exposure to critical narratives about vaccination was associated with lower vaccination intention, but this relationship was weaker than the associations related to trust in official sources. Trust in doctors, healthcare institutions, and official communication channels appears to be a central correlate of both willingness to be vaccinated and overall trust in vaccination. The perceived positive modality of official communication was also strongly associated with global trust in vaccination.

For communication practice, the findings suggest that effective vaccination strategies should not focus exclusively on refuting misinformation. They should also prioritise long-term trust building, segmentation of target groups, transparent communication, and a respectful tone that supports autonomy and reduces perceived barriers. In health marketing terms, vaccination communication should combine social marketing, relationship marketing, and behaviour change communication rather than relying only on one-way information transfer.

The study contributes to the Czech evidence base by linking media narratives, source trust, and communication modality in one quantitative analysis. Future research should use longitudinal or experimental designs, include full sociodemographic controls, and test whether targeted trust-building communication can reduce vaccine hesitancy over time. Future studies should also subject the proposed index structure to independent expert evaluation, for example through a Delphi process, and to psychometric testing using respondent-level item data.

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Ethical aspects and conflict of interest

The authors have no conflict of interest to declare.

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