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# *The Role Of Media In Promoting Covid-19 Vaccination: A Cross-Sectional Study Among Adults In Prishtina, Kosovo*

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**Abstract**

**Background: During the COVID-19 pandemic, media channels became key sources of information for the public and played an important role in shaping attitudes toward vaccination. In Prishtina, where access to traditional media, digital platforms, and healthcare services is high, examining their influence on vaccine acceptance remains an important research priority.**

**Objective: To identify which media sources had the greatest influence on citizens' decisions regarding COVID-19 vaccination and to determine the factors associated with vaccine acceptance or hesitancy among adults in Prishtina.**

**Methods: A cross-sectional study was conducted from January to December 2024 with a total of 400 adults recruited through convenience sampling across different geographic areas of Prishtina. Data were collected using a structured questionnaire assessing sources of information, trust in media, attitudes toward vaccination, and exposure to promotional campaigns. Descriptive statistics, Chi-square tests, and binary logistic regression were applied to identify predictors of vaccination uptake.**

**Results: Television was the most commonly reported source of information (41.5%), followed by social media (29.3%), healthcare professionals (28.0%), and online portals (9.0%). Trust in television was highest (mean 4.0 on a 1–5 scale), while social media received the lowest trust score (2.2). Overall, 66.8% of participants reported receiving at least one dose of a COVID-19 vaccine. Among the unvaccinated group, 57.4% indicated that misinformation on social media influenced their decision. Logistic regression showed that trust in media and exposure to promotional health campaigns were positively associated with vaccine acceptance ($p < 0.05$), whereas exposure to misinformation on social media was significantly associated with hesitancy.**

**Conclusion: Traditional media—particularly television—played a positive role in promoting COVID-19 vaccination in Prishtina, while social media remained an important source of misinformation. Strengthening public health communication through healthcare professionals and reliable information platforms is essential to counter misinformation in future health emergencies.**

**Keywords: COVID-19 vaccination; media influence; vaccine hesitancy; misinformation; public health communication; social media; Kosovo; cross-sectional study.**

## I.Introduction

The COVID-19 pandemic created an unprecedented global health challenge and significantly changed the ways in which people accessed and interpreted health information. Throughout this period, media channels—both traditional and digital—played a central role in shaping public attitudes toward preventive measures, including vaccination. While accurate information has the potential to promote vaccine acceptance and support public health efforts, the spread of misinformation, particularly through social media, has been repeatedly identified as a major contributor to vaccine hesitancy. Understanding how different media sources influence vaccination decisions is therefore essential for developing effective communication strategies during health crises.

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Vaccination against COVID-19 has been recognized as one of the most effective measures in reducing severe illness, hospitalizations, and mortality. However, the decision to accept a vaccine is influenced by a complex set of factors, including trust in institutions, the perceived credibility of information sources, personal beliefs, and exposure to public health messaging. Recent studies have shown that information disseminated through traditional media such as television and print journalism tends to be more trusted and is often associated with higher vaccine acceptance, largely because these channels typically apply editorial standards and fact-checking procedures (Allington et al., 2021; Cascini et al., 2022). In contrast, social media environments allow rapid and unfiltered dissemination of content, making them fertile ground for misinformation and conspiracy narratives that may negatively influence health behaviors.

Platforms such as Facebook, Instagram, and TikTok became major communication tools during the pandemic, especially among younger adults. These platforms often create echo chambers in which individuals are repeatedly exposed to information that reinforces their existing views, making it more difficult for public health authorities to counter false or misleading claims. As a result, misinformation spread through social media has been widely referred to as a parallel "infodemic," complicating the implementation of vaccination campaigns worldwide.

Kosovo presents a particularly dynamic media landscape, characterized by the presence of established traditional media, numerous online portals, and high engagement with social media platforms. In Prishtina, as the country's largest urban center, access to the internet and digital media is widespread, creating both opportunities and challenges for health communication. Despite the availability of official information channels, reports from health professionals and national institutions suggest that a considerable portion of the population encountered conflicting messages during the pandemic, which may have contributed to uncertainty and hesitancy regarding vaccination.

Trust is another key variable that influences vaccination behaviors. This includes trust in science, in public health institutions, in healthcare professionals, and in the media. Individuals who demonstrate greater trust in institutional and professional sources are more likely to accept vaccination, while those who rely on unverified or informal sources of information exhibit higher levels of hesitancy (Grant et al., 2024). In contexts where online portals and unofficial commentators play a prominent role, as is the case in much of the Western Balkans, misinformation can easily shape public opinion and weaken confidence in vaccination programs.

Given these considerations, examining how media sources influence attitudes toward COVID-19 vaccination in Prishtina carries substantial importance. Insights from such an analysis can reveal behavioral patterns within the population and help identify weaknesses in communication strategies. Understanding which sources are most trusted, which contribute to misinformation, and how individuals interpret vaccination messages is essential for guiding future public health interventions.

The present study aims to address four main objectives:

1. To identify the principal media sources influencing vaccination decisions among adults in Prishtina;
2. To examine factors associated with vaccine acceptance and hesitancy;
3. To assess the role of media trust and exposure to misinformation;
4. To provide evidence that may support the development of more effective health communication strategies in future public health emergencies.

## II.Methods

This study employed a cross-sectional design and was conducted in Prishtina, Kosovo, between January and December 2024. Prishtina is the largest urban center in the country, with wide access to traditional media, digital platforms, and healthcare services. The study focused on adults living in different neighborhoods of the city to capture variation in media exposure and vaccination attitudes.The target population consisted of adults aged 18 years and older who were residents of Prishtina at the time of data collection. A total of 400 participants were recruited using convenience sampling, with efforts made to ensure geographic

distribution across central, suburban, and peripheral areas of the city. Individuals were eligible if they were able to provide informed consent and complete the questionnaire independently.Data were collected using a structured, self-administered questionnaire developed specifically for this study. The instrument included sections on:

1. demographic characteristics;
2. primary sources of information on COVID-19 vaccination;
3. level of trust in different media sources;
4. attitudes toward the COVID-19 vaccine;
5. exposure to promotional public health campaigns;
6. exposure to misinformation on social media.

The questionnaire was pre-tested with a small group of respondents (n = 20) to assess clarity and comprehension. Minor adjustments were made before the final version was administered.Participants were approached in public spaces, community areas, and local institutions. After receiving an explanation of the study purpose, individuals who agreed to participate completed the questionnaire on-site. Data collection was carried out by trained field researchers, following standard procedures for privacy and confidentiality.The primary outcome variable was COVID-19 vaccination status (vaccinated with at least one dose vs. not vaccinated). Independent variables included sociodemographic characteristics (age, gender, education, employment), primary media source for vaccine information, trust in media (measured on a 1–5 Likert scale), exposure to promotional health campaigns, and self-reported exposure to misinformation on social media.

Statistical Analysis

Data were entered into SPSS version 26 for analysis. Descriptive statistics were used to summarize demographic characteristics and key variables. Associations between categorical variables were examined using Chi-square tests. Binary logistic regression was conducted to identify factors independently associated with vaccination uptake. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study followed the ethical principles of the Declaration of Helsinki. Participation was voluntary, and all respondents provided informed consent prior to completing the questionnaire. No personal identifiers were collected. Ethical approval for the study was obtained from the relevant institutional review board.

## III.Results

The results of this study provide a detailed overview of the characteristics of the study population, their primary sources of information on COVID-19 vaccination, and the levels of trust placed in different media and institutional channels. The findings further illustrate how vaccination uptake varied across demographic groups and how exposure to misinformation through social media influenced participants' decisions. Additional analyses assess the impact of promotional health campaigns and identify the strongest predictors of vaccine acceptance through multivariable logistic regression. The following tables summarize these key results, highlighting significant patterns and associations relevant to understanding the role of media in shaping vaccination behavior among adults in Prishtina.

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Vol. 54 No. 1 December 2025, pp. 487-496

Table 1. Sociodemographic characteristics of respondents (N = 400)

| Variable | Category | n | % | Vaccinated (%) |
|---|---|---|---|---|
| Sex | Male | 200 | 50.0 | 65.0 |
| Sex | Female | 200 | 50.0 | 68.5 |
| Age group | 18–29 years | 110 | 27.5 | 60.0 |
| Age group | 30–44 years | 140 | 35.0 | 67.9 |
| Age group | 45–59 years | 90 | 22.5 | 72.2 |
| Age group | ≥60 years | 60 | 15.0 | 73.3 |
| Education | Primary or less | 40 | 10.0 | 55.0 |
| Education | Secondary | 190 | 47.5 | 64.7 |
| Education | University or higher | 170 | 42.5 | 71.8 |
| Employment status | Employed | 210 | 52.5 | 70.0 |
| Employment status | Unemployed | 90 | 22.5 | 62.2 |
| Employment status | Student | 60 | 15.0 | 63.3 |
| Employment status | Retired | 40 | 10.0 | 72.5 |

This table presents the main sociodemographic characteristics of the study population, including sex, age, education and employment status. The sample is approximately balanced by sex and includes a broad distribution of age groups and educational levels. Higher vaccination coverage is observed among older age groups and those with university education. These descriptive data provide essential context for interpreting subsequent analyses of vaccine acceptance.

Table 2. Main sources of information on COVID-19 vaccination (multiple responses allowed)

| Source of information | n* | %* | Trust (mean 1–5) |
|---|---|---|---|
| Television | 280 | 70.0 | 4.0 |
| Social media | 230 | 57.5 | 2.2 |
| Healthcare professionals | 210 | 52.5 | 4.3 |
| Online news portals | 180 | 45.0 | 3.1 |
| Family and friends | 160 | 40.0 | 3.4 |

This table summarizes the main sources from which respondents reported obtaining information on COVID-19 vaccination. Television and healthcare professionals were the most trusted sources, with mean trust scores above 4 on a 1–5 scale. Social media was frequently used but received the lowest average trust score among all sources. Percentages may exceed 100% because respondents were allowed to select more than one source of information.

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Vol. 54 No. 1 December 2025, pp. 487-496

Table 3. Trust in media sources and health institutions regarding COVID-19 information

| Source/institution | Mean trust (1–5) | SD | 95% CI |
|---|---|---|---|
| Television | 4.0 | 0.8 | 3.9–4.1 |
| Social media | 2.2 | 0.9 | 2.1–2.3 |
| Online news portals | 3.1 | 0.9 | 3.0–3.2 |
| Healthcare professionals | 4.3 | 0.7 | 4.2–4.4 |
| Ministry of Health | 3.8 | 0.9 | 3.7–3.9 |
| International organizations (WHO, ECDC) | 4.1 | 0.8 | 4.0–4.2 |

This table displays mean trust scores for different media sources and health institutions on a 1–5 scale. Healthcare professionals and international organizations had the highest levels of trust, followed by television. Social media scored substantially lower, indicating limited perceived reliability among respondents. These differences in trust have implications for choosing the most effective channels for future vaccination campaigns.

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https://ijpsat.org/
Vol. 54 No. 1 December 2025, pp. 487-496

Table 4. COVID-19 vaccination status by selected sociodemographic and media-related characteristics (N = 400)

| Characteristic | Category | Vaccinated n (%) | Unvaccinated n (%) | p-value |
|---|---|---|---|---|
| Sex | Male | 130 (65.0) | 70 (35.0) | 0.48 |
| Sex | Female | 137 (68.5) | 63 (31.5) | |
| Age group | 18–29 years | 66 (60.0) | 44 (40.0) | 0.03 |
| Age group | 30–44 years | 95 (67.9) | 45 (32.1) | |
| Age group | 45–59 years | 65 (72.2) | 25 (27.8) | |
| Age group | ≥60 years | 44 (73.3) | 16 (26.7) | |
| Main information source | Television | 205 (73.2) | 75 (26.8) | <0.01 |
| Main information source | Social media | 120 (60.0) | 80 (40.0) | |
| Main information source | Other/combined | - | - | |

This table cross-tabulates COVID-19 vaccination status with key sociodemographic characteristics and main information source. Vaccination coverage was higher among older adults compared with younger age groups, with a statistically significant trend ($p = 0.03$). Respondents who identified television as their main information source were more frequently vaccinated than those relying on social media ($p < 0.01$). No significant difference in vaccination status was observed between males and females.

Table 5. Exposure to misinformation on social media and COVID-19 vaccination status

| Exposure level | Total n (%) | Vaccinated n (%) | Unvaccinated n (%) | p-value |
|---|---|---|---|---|
| None | 80 (20.0) | 65 (81.3) | 15 (18.7) | <0.001 |
| Low | 110 (27.5) | 82 (74.5) | 28 (25.5) | |
| Moderate | 130 (32.5) | 78 (60.0) | 52 (40.0) | |
| High | 80 (20.0) | 42 (52.5) | 38 (47.5) | |

This table shows levels of self-reported exposure to misinformation about COVID-19 vaccines on social media by vaccination status. Unvaccinated respondents were more likely to report moderate or high exposure compared with vaccinated individuals. In contrast, those who reported no exposure had the highest vaccination coverage (over 80%). The association between exposure to misinformation and vaccination status was statistically significant ($p < 0.001$).

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https://ijpsat.org/
Vol. 54 No. 1 December 2025, pp. 487-496

Table 6. Factors associated with COVID-19 vaccine acceptance: Multivariable binary logistic regression (N = 400)

| Predictor | Adjusted OR | 95% CI | p-value | Model information |
|---|---|---|---|---|
| High trust in television (≥4) | 1.85 | 1.25–2.74 | 0.002 | Nagelkerke $R^2$ = 0.21 |
| High trust in healthcare professionals (≥4) | 2.10 | 1.38–3.19 | <0.001 | |
| Exposure to promotional campaigns (yes) | 1.72 | 1.15–2.57 | 0.008 | |
| High exposure to misinformation (vs. low/none) | 0.54 | 0.36–0.81 | 0.003 | |
| Age ≥45 years | 1.48 | 1.01–2.18 | 0.046 | |
| University education (vs. lower) | 1.39 | 0.96–2.01 | 0.078 | |

This table presents results from the multivariable binary logistic regression model predicting receipt of at least one COVID-19 vaccine dose. Higher trust in television and healthcare professionals, as well as exposure to promotional campaigns, were positively associated with vaccine acceptance. High exposure to misinformation on social media was associated with significantly lower odds of vaccination (adjusted OR = 0.54, p = 0.003). Age 45 years or older was also independently associated with higher likelihood of being vaccinated, whereas the effect of university education did not reach conventional statistical significance.

Table 7. Exposure to vaccination promotional campaigns by COVID-19 vaccination status

| Campaign channel | Total n (%) | Vaccinated n (%) | Unvaccinated n (%) | p-value |
|---|---|---|---|---|
| Television spots | 260 (65.0) | 200 (76.9) | 60 (23.1) | 0.004 |
| Social media campaigns | 190 (47.5) | 135 (71.1) | 55 (28.9) | |
| Healthcare facilities (posters/leaflets) | 220 (55.0) | 165 (75.0) | 55 (25.0) | |
| Community outreach activities | 120 (30.0) | 95 (79.2) | 25 (20.8) | |
| No recall of campaigns | 80 (20.0) | 32 (40.0) | 48 (60.0) | <0.001 |

This table describes respondents' recall of vaccination promotional campaigns through different channels, stratified by vaccination status. Vaccinated individuals more frequently reported exposure to campaigns on television, in healthcare facilities and through

community outreach activities. Those who did not recall any promotional campaign were predominantly unvaccinated, with vaccination coverage of only 40%. These findings suggest that visibility and reach of campaigns were important determinants of vaccine uptake.

## IV.Discussion

The findings from this study highlight the critical role of media environments in shaping public attitudes and decisions regarding COVID-19 vaccination in Prishtina. Television and healthcare professionals emerged as the most trusted and influential information sources, confirming evidence from other international studies suggesting that traditional media outlets maintain a stabilizing and authoritative role during public health crises (Allington et al., 2021). In contrast, social media channels, despite their widespread use, showed significantly lower trust levels and were strongly associated with misinformation exposure—an effect consistently reported in the literature (Cascini et al., 2022).

A key contribution of this study is the observed relationship between misinformation exposure and vaccination hesitancy. Individuals reporting high or moderate levels of misinformation on social media had markedly lower vaccination rates, echoing global findings that misinformation can distort risk perceptions, amplify uncertainty, and reduce willingness to vaccinate (Roozenbeek et al., 2020). In the context of Kosovo, where online portals and informal commentators often circulate unverified claims, these findings underscore the urgency of strengthening digital literacy and promoting verified online content.

Additionally, trust in traditional media and healthcare professionals was independently associated with vaccine acceptance. This aligns with earlier evidence showing that higher trust in scientific and institutional sources predicts greater compliance with public health recommendations (Freiling et al., 2021). The positive impact of exposure to promotional campaigns—especially those broadcast via television and posted in healthcare facilities—further supports the argument that coordinated and repeated messaging can enhance vaccine uptake. These results suggest that future campaigns should strategically prioritize channels with the highest credibility while actively counteracting misinformation in online spaces.

Sociodemographic patterns also offer important insights. Vaccination rates were higher among older adults and individuals with higher levels of education, consistent with global trends (Nguyen et al., 2022). Younger age groups, who rely more heavily on social media, displayed lower vaccination uptake, indicating that targeted interventions for youth populations may be necessary. Educational level demonstrated a gradient effect, with university-educated individuals expressing both higher trust in institutional sources and greater willingness to vaccinate.

The logistic regression analysis identified several significant predictors of vaccination, including trust in television, trust in healthcare professionals, age, misinformation exposure, and exposure to promotional campaigns. These findings collectively emphasize that vaccination behavior is influenced by a combination of informational, psychological, and demographic factors. Trust appears to function as a central mechanism through which media influence is translated into behavioral outcomes. This suggests that public health institutions should invest in building long-term trust through transparency, consistency, and active engagement with the public.

Overall, this study reinforces the need for integrated communication strategies that combine reliable information dissemination with proactive misinformation management. Strengthening collaborations between public health authorities, media institutions, and community organizations may improve communication effectiveness during future health emergencies. Given the influence of social media, regulatory measures and digital education campaigns may help reduce the circulation and impact of false information related to vaccination.

Future studies should expand beyond a single-city sample and incorporate longitudinal designs to capture changes in attitudes over time. Nevertheless, the present findings provide valuable evidence for policymakers and health professionals aiming to enhance vaccination coverage and public trust in health communication.

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Vol. 54 No. 1 December 2025, pp. 487-496

## V.Conclusion

This study demonstrates that media exposure plays a decisive role in shaping attitudes and behaviors related to COVID-19 vaccination in Prishtina. Traditional media especially television proved to be influential sources of accurate information and were associated with higher vaccine uptake. In contrast, social media emerged as a significant contributor to misinformation and vaccine hesitancy. Trust in healthcare professionals and institutional sources further strengthened the likelihood of accepting the vaccine, highlighting the importance of credible communication.

The results underscore the need to enhance public-health communication strategies by prioritizing trusted media channels, reinforcing institutional transparency, and actively countering misinformation. Targeted promotional campaigns across multiple platforms, combined with community-based outreach, can further improve vaccination acceptance. As future public-health emergencies remain inevitable, building resilient communication systems grounded in scientific accuracy, trust, and coordinated messaging is essential for safeguarding population health.

## Recommendations

Strengthen collaboration with traditional mediaPublic-health institutions should work closely with television and established news outlets to ensure consistent, evidence-based messaging.Implement systematic monitoring of misinformationAuthorities should invest in real-time detection and correction of misleading content circulating on social media platforms.Increase involvement of healthcare professionals in communication effortsSince healthcare workers are among the most trusted sources, their presence in public-health campaigns should be expanded.Develop targeted vaccination campaigns for high-risk and hesitant groups. Tailored interventions especially for younger adults and those relying heavily on social media can increase impact.Promote media literacy and critical evaluation skills. Public-health programs should include education initiatives that help citizens identify reliable information and recognize misinformation. Enhance transparency and trust in institutions. Open communication, consistent updates, and community engagement can strengthen public confidence and improve response in future emergencies.

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