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# Criticism of the proposed subject 'Health Education' in schools in Poland – the role of socio-demographic, regional, and health knowledge factors

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## Abstract

**Introduction and Objective.** Public attitudes may affect the implementation of school health reforms. The aim of the study is to examine whether perceived reasons for public criticism of Poland's proposed Health Education curriculum varied by socio-demographic, regional, educational, and health-knowledge characteristics.

**Materials and Method.** A 2025 cross-sectional survey included 1,094 adults recruited by convenience sampling in three provinces. Analyses included 1,046 respondents who declared at least some familiarity with the proposal. In a single-choice item, respondents selected one of four categories of reasons for public criticism: substantive, political, ideological, or other. Associations were tested using Pearson's chi-square test and Cramér's V, while age was compared using the Kruskal–Wallis test.

**Results.** Perceived reasons for public criticism varied by place of residence, province, educational attainment, and health-knowledge level; all effect sizes were small. Substantive responses were more frequent among respondents with higher education than among those with secondary or vocational education, and among respondents with higher health-knowledge levels. Age, household size, self-rated health, and status as a parent or legal guardian of a school-age child, were not significantly associated with the selected category.

**Conclusions.** Province showed the strongest association with respondents' perceptions, although the effect size remained small. Substantive explanations were more frequent in Mazowieckie and political explanations in Lubelskie, whereas ideological explanations were more frequent in Podkarpackie than in the other two provinces. Place of residence, educational attainment, and health-knowledge level showed weaker associations, suggesting that no single factor examined adequately accounts for the observed variation.

## Key words

health education, public opinion, health education curriculum, health knowledge, public criticism, regional differences

## INTRODUCTION

Introducing or substantially revising a school subject is not merely an administrative decision. Curriculum reform also concerns expectations regarding the roles of schools, families, and public institutions, as well as places of prevention and the boundary between knowledge and values [1, 2].

School-based programmes can help develop practical knowledge, health literacy, decision-making skills, and help-seeking competencies. Recent evidence indicates that well-designed interventions may improve selected knowledge and behavioural outcomes, although their effects vary according to topic, programme design, and implementation quality [3–6]. This is particularly relevant to school health education. Its reception may depend on health literacy, institutional trust, access to reliable information, and exposure to misinformation, and public debate [7–9]. Asking about perceived reasons for public criticism may capture both individual interpretations and the broader interpretive frames respondents encounter in public debate and their social environment.

In Poland, the proposal to introduce Health Education as a separate school subject generated considerable public debate. Health topics had previously been addressed through other subjects and preventive activities; the reform aimed to reorganise and standardise this area.

The debate concerned the subject's scope, organisation, implementation, and possible overlap with sexuality-related content, family values, and parental responsibility. Sexuality-

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related education is addressed in international educational frameworks [10], but such content may be interpreted differently within the Polish social and cultural context.

The reception and implementation of the subject also depend on the expectations of families, teachers, and the wider public. Recent research suggests that families may value school health education while differing in their preferences regarding its scope, priorities, and organisation [11].

In a complex information environment, attitudes towards health policies may additionally be shaped by the perceived credibility of institutions, social media content, and messages shared by public figures without relevant expertise. Effective communication therefore requires factual accuracy, transparency, audience-sensitive message design, and attention to existing patterns of trust [12–14].

A previous analysis of the same survey [15] showed divided attitudes and incomplete familiarity with official curriculum materials. The present study focused on respondents who declared at least some familiarity with the proposal and examined which category of reasons they selected to explain public criticism of the proposal, irrespective of their personal attitude towards the subject.

Distinguishing content-based objections from broader political, trust-related, and information-related frames may support communication and implementation planning [14, 16, 17].

## OBJECTIVE

The aim of the study is to determine whether perceived reasons for public criticism of the proposed Health Education curriculum were associated with place of residence, province, educational attainment, health-knowledge level, age, gender, status as a parent or legal guardian of a school-age child, household size, and self-rated health.

## MATERIALS AND METHOD

**Study design and questionnaire.** A cross-sectional survey was conducted from June – December 2025 using an author-designed 32-item questionnaire; items were single-choice unless otherwise stated. The questionnaire covered socio-demographic characteristics, health knowledge, information sources, evaluations of existing school health education, and attitudes towards the reform. The questionnaire formed part of a broader research project; its first component was published online first [15], whereas the present article reports a separate analysis of respondents' perceived reasons for public criticism in public discourse and social interactions. The Polish questionnaire and its English translation are provided in Supplementary Files 1 and 2, respectively. The health-knowledge scoring key is presented in Supplementary Table S1.

Trained students of the John Paul II Catholic University of Lublin recruited adults using convenience sampling. The recruiters were familiar with the local areas in which the fieldwork was conducted and approached potential participants in varied public settings, including parks and green squares, bus and railway stations, shops and shopping centres, other public spaces, and playgrounds where adults accompanying children could also be invited to participate.

**Supplementary Table S1**. Scoring criteria for the six selected health-knowledge items

| Questionnaire item | Criterion awarded 1 point | Response(s) scored 1 |
|---|---|---|
| Q15. Frequency of changing personal underwear | At least once daily | Response 1 |
| Q16. Frequency of changing or washing bed linen | At least once every 7 days | Responses 1 or 2 |
| Q17. Frequency of tooth brushing | At least twice daily | Responses 1 or 2 |
| Q18. Frequency of washing the intimate areas | At least once daily | Response 1 |
| Q19. Treatment of recurrent abdominal pain | Only medication prescribed by a physician | Response 5 |
| Q20. Treatment of recurrent persistent cough | Only medication prescribed by a physician | Response 5 |

Recruitment locations were selected pragmatically within the study areas. Participation was voluntary and anonymous. Eligibility required an age of at least 18 years and residence in one of the three study provinces.

The predefined exclusion criteria were lack of consent, residence outside the study area, and selection of more than one response in an item explicitly designated as single-choice, the reason being that such a response could not be coded unambiguously. No questionnaire met the latter criterion. Isolated missing responses did not lead to exclusion of the entire questionnaire; complete cases were used for each variable. No formal power calculation was performed because the study was exploratory and non-representative.

**Sampling and participants.** Participants were recruited in the Lubelskie, Mazowieckie, and Podkarpackie provinces, where recruitment was feasible for the research team. Within each provoince, recruitment covered at least three cities or towns with populations of ≥50,000 and at least four towns with populations below 50,000. The regions were not selected to represent Polish macroregions, nor were they selected on the basis of prespecified cultural, religious, political, or socio-economic characteristics.

A total of 1,094 questionnaires were collected. Forty-eight respondents reported no familiarity with the Ministry's proposal and were excluded from the present analysis, leaving an analytical sample of 1,046. Familiarity was self-reported and was not objectively verified; the findings therefore refer to declared rather than confirmed knowledge of the curriculum.

**Measures and variables.** The dependent variable was based on the question: 'In your opinion, what are the reasons for criticism of the Health Education programme' The response options were substantive (programme content), political, ideological (worldview), and other (with specification).

Respondents were instructed to select one response category. For the present analysis, the selected category was treated as the respondent's single response to the item rather than as a measure of the full range of reasons for public criticism. All respondents included in the analysis provided one unambiguous response to this item. The item did not explicitly distinguish respondents' own reasons from their interpretation of criticism encountered in public debate and social interactions; this limitation is considered in the Discussion. The categories were broad and neutrally

worded and did not refer to specific political, religious, or moral actors.

The independent variables were gender, age, place of residence, province, educational attainment, household size, status as a parent or legal guardian of a school-age child, self-rated health, and health-knowledge level.

Respondents' personal evaluation of the proposed Health Education subject was presented descriptively in Table 1 to demonstrate that the analytical sample included positive, negative, neutral, and undecided attitudes. It was not treated as an explanatory variable because the present analysis concerned perceived reasons for public criticism rather than determinants of respondents' personal evaluation of the subject.

Selected aspects of health knowledge were assessed using six author-designed items concerning personal hygiene and safe medication use in the context of recurrent abdominal pain and persistent cough. For the hygiene items, scoring was based on whether the response met or exceeded a predefined minimum frequency threshold. Responses indicating more frequent performance of the behaviour were not classified as incorrect. Accordingly, 1 point was awarded for changing underwear at least once daily, changing or washing bed linen at least once every 7 days, brushing the teeth at least twice daily, and washing the intimate areas at least once daily. For the 2 medication items, 1 point was awarded only for selecting medication prescribed by a physician. All other responses received 0 points. The resulting 0–6-point score was classified as low (0–2), medium (3–4), or high (5–6). The full items and scoring key are provided in the supplementary materials.

**Statistical analysis.** Categorical associations were tested using Pearson's chi-square test and described using Cramér's V. Monte Carlo p-values were used when expected cell counts were sparse. For association analyses, household size was grouped as 1, 2, 3–4, or ≥5 persons.

Age was compared across the 4 nominal categories using the Kruskal–Wallis test. Analyses were based on complete cases for each comparison, and denominators reported separately. Statistical significance was set at $p < 0.05$.

**Ethical considerations.** The study was approved by the Bioethics Committee of the John Paul II Catholic University in Lublin (Approval No. 4/2025, dated 30 March 2025). All participants provided informed consent. The study was conducted in accordance with the Declaration of Helsinki.

## RESULTS

The analysis included 1,046 respondents (Tab. 1). Women constituted 57.9% of the sample and men 40.3%; mean age was 38.3 ± 15.7 years (median 36, range 18–93). Most participants were recruited in the Lubelskie province (68.5%), followed by the Podkarpackie (17.5%) and Mazowieckie provinces (14.1%). Higher and secondary education were reported by 38.5% and 38.0% of respondents, respectively. Based on the 0–6-point score, health-knowledge level was classified as low for 48.8% of respondents, medium for 37.6%, and high for 13.7%.

Personal evaluation of the proposed Health Education subject was heterogeneous: 10.2% rated it very positively, 19.9% positively, 19.0% fairly positively, 11.0% satisfactorily, 12.1% negatively, and 27.7% expressed no opinion (Tab. 1). Thus, the analytical sample was not limited to respondents

**Table 1.** Characteristics of the analytical sample

| Variable | Category/statistic | n | % or summary |
|---|---|---|---|
| Gender | Women | 606 | 57.9% |
| | Men | 422 | 40.3% |
| | Other response | 17 | 1.6% |
| | Missing response | 1 | 0.1% |
| Age | Mean ± SD | | 38.3 ± 15.7 years |
| | Median (range) | | 36 (18–93) years |
| Place of residence | Cities with more than 100,000 inhabitants | 451 | 43.1% |
| | Cities with 50,000–100,000 inhabitants | 164 | 15.7% |
| | Towns with 10,000–50,000 inhabitants | 138 | 13.2% |
| | Towns with up to 10,000 inhabitants | 91 | 8.7% |
| | Villages / settlements | 202 | 19.3% |
| Province | Mazowieckie | 147 | 14.1% |
| | Lubelskie | 716 | 68.5% |
| | Podkarpackie | 183 | 17.5% |
| Educational attainment | Higher | 403 | 38.5% |
| | Secondary | 397 | 38.0% |
| | Vocational | 163 | 15.6% |
| | Primary | 83 | 7.9% |
| Health-knowledge level | Low (0–2) | 510 | 48.8% |
| | Medium (3–4) | 393 | 37.6% |
| | High (5–6) | 143 | 13.7% |
| Parent/legal guardian of a school-age child | Yes | 371 | 35.5% |
| | No | 674 | 64.4% |
| | Missing/invalid response | 1 | 0.1% |
| Household size | 1 person | 149 | 14.2% |
| | 2 persons | 251 | 24.0% |
| | 3 persons | 238 | 22.8% |
| | 4 persons | 229 | 21.9% |
| | 5 persons | 115 | 11.0% |
| | 6 persons | 35 | 3.3% |
| | 7 persons | 16 | 1.5% |
| | 8 persons | 7 | 0.7% |
| | 10 persons | 3 | 0.3% |
| | Missing/invalid response | 3 | 0.3% |
| Self-rated health | Very good | 331 | 31.6% |
| | Good | 422 | 40.3% |
| | Fairly good | 175 | 16.7% |
| | Satisfactory | 92 | 8.8% |
| | Poor | 26 | 2.5% |
| Personal evaluation of proposed Health Education subject (descriptive only) | Very positive | 107 | 10.2% |
| | Positive | 208 | 19.9% |
| | Fairly positive | 199 | 19.0% |
| | Satisfactory | 115 | 11.0% |
| | Negative | 127 | 12.1% |
| | No opinion | 290 | 27.7% |

Percentages are calculated for the full analytical sample (N = 1,046). Missing or invalid responses are shown explicitly. Association analyses were based on valid responses for each variable. Personal evaluation of the proposed subject is presented descriptively to show the diversity of attitudes in the sample and was not included as an explanatory variable in the present analysis. Percentages may not total 100% because of rounding

**Table 2.** Association between perceived reasons for public criticism and place of residence.

| Place of residence | Substantive n (%) | Political n (%) | Ideological n (%) | Other n (%) | Total |
|---|---|---|---|---|---|
| Cities with more than 100,000 inhabitants | 136 (30.2) | 170 (37.7) | 116 (25.7) | 29 (6.4) | 451 |
| Cities with 50,000–100,000 inhabitants | 38 (23.2) | 76 (46.3) | 44 (26.8) | 6 (3.7) | 164 |
| Towns with 10,000–50,000 inhabitants | 56 (40.6) | 43 (31.2) | 34 (24.6) | 5 (3.6) | 138 |
| Towns with up to 10,000 inhabitants | 29 (31.9) | 38 (41.8) | 23 (25.3) | 1 (1.1) | 91 |
| Villages / settlements | 56 (27.7) | 70 (34.7) | 69 (34.2) | 7 (3.5) | 202 |

$\chi^2(12, N = 1,046) = 25.06$; $p = 0.015$, Cramér's $V = 0.089$. Percentages are row percentages

critical of the subject. Perceived reasons for public criticism differed by place of residence, although the association was weak ($\chi^2(12, N = 1,046) = 25.06$, $p = 0.015$, Cramér's $V = 0.089$; Table 2). Political reasons were most frequent among respondents living in cities with 50,000–100,000 inhabitants (46.3%) and towns with up to 10,000 inhabitants (41.8%). Substantive reasons were most frequent among respondents living in towns with 10,000–50,000 inhabitants (40.6%), whereas ideological reasons reached their highest proportion among village residents (34.2%).

Province showed the strongest association, although its magnitude remained small ($\chi^2(6, N = 1,046) = 31.33$, $p < 0.001$, Cramér's $V = 0.122$; Table 3). The proportion of substantive responses was highest in the Mazowieckie province (45.6%), political responses were most frequent in Lubelskie (39.9%) province, and the proportion of ideological responses was highest in Podkarpackie (33.3%) compared with the other provinces.

**Table 3.** Association between perceived reasons for public criticism and voivodeship.

| Province | Substantive n (%) | Political n (%) | Ideological n (%) | Other n (%) | Total |
|---|---|---|---|---|---|
| Mazowieckie | 67 (45.6) | 48 (32.7) | 31 (21.1) | 1 (0.7) | 147 |
| Lubelskie | 193 (27.0) | 286 (39.9) | 194 (27.1) | 43 (6.0) | 716 |
| Podkarpackie | 55 (30.1) | 63 (34.4) | 61 (33.3) | 4 (2.2) | 183 |

$\chi^2(6, N = 1,046) = 31.33$; $p < 0.001$, Cramér's $V = 0.122$. Percentages are row percentages.

Educational attainment was weakly associated with the category of perceived reasons for public criticism ($\chi^2(9, N = 1,046) = 19.74$; $p = 0.020$, Cramér's $V = 0.079$) (Tab. 4). Substantive reasons were selected by 34.7% of respondents with higher education, compared with 25.4% with secondary and 28.2% with vocational education; the corresponding proportion in the primary-education group was 33.7%. Ideological reasons were more frequent among respondents with secondary (31.5%) or vocational education (30.1%) than among those with higher education (24.1%).

Health-knowledge level, derived from the 0–6-point score, was also weakly associated with the response category ($\chi^2(6, N = 1,046) = 13.66$; $p = 0.034$, Cramér's $V = 0.081$) (Tab. 5). The proportion of substantive responses increased from 27.5% in the low-score group to 39.9% in the high-score group, while the proportion of political responses decreased from 40.4% – 28.0%. The medium-score group showed intermediate proportions (30.0% substantive and 38.4% political).

**Table 4.** Association between perceived reasons for public criticism and educational attainment.

| Educational attainment | Substantive n (%) | Political n (%) | Ideological n (%) | Other n (%) | Total |
|---|---|---|---|---|---|
| Higher education | 140 (34.7) | 151 (37.5) | 97 (24.1) | 15 (3.7) | 403 |
| Secondary education | 101 (25.4) | 151 (38.0) | 125 (31.5) | 20 (5.0) | 397 |
| Vocational education | 46 (28.2) | 63 (38.7) | 49 (30.1) | 5 (3.1) | 163 |
| Primary education | 28 (33.7) | 32 (38.6) | 15 (18.1) | 8 (9.6) | 83 |

$\chi^2(9, N = 1,046) = 19.74$; $p = 0.020$, Cramér's $V = 0.079$. Percentages are row percentages.

**Table 5.** Association between perceived reasons for public criticism and health-knowledge level

| Health-knowledge level (score range) | Substantive n (%) | Political n (%) | Ideological n (%) | Other n (%) | Total |
|---|---|---|---|---|---|
| Low (0–2) | 140 (27.5) | 206 (40.4) | 136 (26.7) | 28 (5.5) | 510 |
| Medium (3–4) | 118 (30.0) | 151 (38.4) | 107 (27.2) | 17 (4.3) | 393 |
| High (5–6) | 57 (39.9) | 40 (28.0) | 43 (30.1) | 3 (2.1) | 143 |

$\chi^2(6, N = 1,046) = 13.66$; $p = 0.034$, Cramér's $V = 0.081$. Percentages are row percentages.

Age did not differ significantly across categories of perceived reasons for public criticism (Kruskal–Wallis $H(3, N = 1,046) = 5.724$; $p = 0.126$) (Tab. 6). Median age was 37.0 years for substantive, 36.0 years for political, 34.0 years for ideological, and 41.0 years for other reasons; the corresponding mean ages were 38.91, 38.70, 36.79, and 40.69 years.

**Table 6.** Age according to perceived reasons for public criticism

| Perceived reason | n | Mean ± SD | Median | IQR (Q1–Q3) | Min–max | Mean rank |
|---|---|---|---|---|---|---|
| Substantive | 315 | 38.91 ± 15.54 | 37.0 | 26.0–48.0 | 18–86 | 537.54 |
| Political | 397 | 38.70 ± 16.52 | 36.0 | 25.0–50.0 | 18–93 | 523.30 |
| Ideological | 286 | 36.79 ± 14.87 | 34.0 | 24.0–45.75 | 18–89 | 496.25 |
| Other | 48 | 40.69 ± 13.44 | 41.0 | 29.0–49.25 | 20–71 | 595.31 |

Kruskal–Wallis $H(3, N = 1,046) = 5.724$; $p = 0.126$.

No significant associations were found for gender (Monte Carlo $p = 0.924$), status as a parent or legal guardian of a school-age child ($p = 0.510$), household size ($p = 0.339$), or self-rated health (Monte Carlo $p = 0.119$) (Tab. 7). Cramér's V ranged from 0.031 – 0.075, and the distributions of substantive, political, ideological, and other responses showed no consistent gradient across these characteristics.

## DISCUSSION

Perceived reasons for public criticism varied according to place of residence, province, educational attainment, and health-knowledge level, but not according to age or the other characteristics examined. This pattern points to contextual differences in how the reform was understood. The regional pattern suggests that different explanatory frames may have

**Table 7.** Associations between perceived reasons for public criticism and other participant characteristics.

| Variable/category | Substantive n (%) | Political n (%) | Ideological n (%) | Other n (%) | Total | p-value | Cramér's V |
|---|---|---|---|---|---|---|---|
| Gender | | | | | | 0.924[a] | 0.031 |
| Women | 179 (29.5) | 229 (37.8) | 172 (28.4) | 26 (4.3) | 606 | | |
| Men | 128 (30.3) | 163 (38.6) | 110 (26.1) | 21 (5.0) | 422 | | |
| Other response | 7 (41.2) | 5 (29.4) | 4 (23.5) | 1 (5.9) | 17 | | |
| Parent/legal guardian of a school-age child | | | | | | 0.510 | 0.047 |
| Yes | 121 (32.6) | 135 (36.4) | 96 (25.9) | 19 (5.1) | 371 | | |
| No | 194 (28.8) | 262 (38.9) | 189 (28.0) | 29 (4.3) | 674 | | |
| Household size | | | | | | 0.339 | 0.057 |
| 1 person | 37 (24.8) | 57 (38.3) | 47 (31.5) | 8 (5.4) | 149 | | |
| 2 persons | 82 (32.7) | 98 (39.0) | 62 (24.7) | 9 (3.6) | 251 | | |
| 3–4 persons | 146 (31.3) | 181 (38.8) | 122 (26.1) | 18 (3.9) | 467 | | |
| ≥5 persons | 49 (27.8) | 60 (34.1) | 54 (30.7) | 13 (7.4) | 176 | | |
| Self-rated health | | | | | | 0.119[a] | 0.075 |
| Very good | 107 (32.3) | 119 (36.0) | 86 (26.0) | 19 (5.7) | 331 | | |
| Good | 127 (30.1) | 155 (36.7) | 128 (30.3) | 12 (2.8) | 422 | | |
| Fairly good | 47 (26.9) | 67 (38.3) | 47 (26.9) | 14 (8.0) | 175 | | |
| Satisfactory | 25 (27.2) | 45 (48.9) | 20 (21.7) | 2 (2.2) | 92 | | |
| Poor | 9 (34.6) | 11 (42.3) | 5 (19.2) | 1 (3.8) | 26 | | |

Analyses were based on complete cases for each variable; therefore, denominators differ slightly because of missing responses. Percentages are row percentages. [a] Monte Carlo p-value, used because some expected cell counts were below 5. Household size was grouped as 1 person, 2 persons, 3 – 4 persons, and ≥5 persons. Gender: $\chi^2(6, N = 1,045) = 2.043$; status as a parent or legal guardian of a school-age child: $\chi^2(3, N = 1,045) = 2.314$; household size: $\chi^2(9, N = 1,043) = 10.146$; self-rated health: $\chi^2(12, N = 1,046) = 17.851$

been more salient in different information environments and social settings.

The broad categories were intended to capture major dimensions of public criticism. 'ideological' could encompass religious, moral, cultural, family, or other worldview concerns, whereas 'political' could encompass party conflict, attitudes towards government, institutional distrust, or reactions to the way in which the reform was communicated. However, the categories did not distinguish between more specific mechanisms underlying criticism. Ideological reasons were comparatively more frequent among rural respondents, suggesting that worldview-based explanations may have been more salient in rural settings. Public-health communication research shows that message reception depends not only on factual content, but also on trust, audience characteristics, cultural resonance, and the perceived legitimacy of the communicator [14].

Compared with respondents with secondary or vocational education, those with higher education more often selected substantive reasons. Higher educational attainment may facilitate greater attention to the substantive aspects of the proposed curriculum, although the absence of a consistent gradient across all educational groups and the broad response categories require cautious interpretation.

Higher health-knowledge levels were associated with more frequent selection of substantive reasons and less frequent selection of political reasons. This may indicate a more content-focused interpretation, but the 6-item author-designed score assessed only selected aspects of health knowledge and was neither designed nor validated as a comprehensive measure of health literacy. Health literacy is a substantially broader construct [18, 19]. This finding is consistent with the broader proposition that the ability to access, assess, and use health information may shape interpretations of health-related proposals, particularly when messages originate from institutions, social media users, and online influencers of varying credibility [12, 13].

Perceptions were broadly similar across gender, status as a parent or legal guardian of a school-age child, household size, and self-rated health within this sample.

Implementation of the subject therefore presents both curricular and communication challenges. Clear information about aims, scope, age-appropriate content, boundaries, organization, and teacher preparation should be accompanied by opportunities for parents and others involved to raise concerns [11, 14, 17]. Teacher preparation and institutional support may influence how curriculum objectives are translated into classroom practice [6, 20].

School-based health education and health-promoting school approaches can support health knowledge, health literacy, informed decision-making, and selected health behaviours among children and adolescents [3–6, 21, 22]. Effects vary by outcome; for example, mental-health literacy interventions appear to improve knowledge and stigma-related outcomes more consistently than help-seeking behaviour [5].

**Limitations of the study.** The study has several limitations. These include convenience sampling, unequal and non-random regional subsamples, and self-reported level of familiarity with the proposed Health Education curriculum. Respondents may have based their assessments on media coverage, conversations, social media, or official materials, but the relative contribution of these sources was not measured.

The questionnaire item did not explicitly separate respondents' own reasons from their interpretation of public criticism encountered in debate or social interactions. The extent to which the wording of the item and the mode of data collection may have influenced self-presentation or social desirability bias was not assessed [23, 24]. Moreover,

the broad, mutually exclusive categories limited construct specificity and did not identify the beliefs, institutions, or messages underlying criticism.

Further limitations included the brief, author-designed 0–6-point health-knowledge score and its author-defined cut-offs, which produced unequal group sizes; the score was not designed or validated as a comprehensive measure of health literacy. The cross-sectional design and the lack of detailed measures of political orientation, religiosity, institutional trust, media use, or direct exposure to particular messages about the curriculum also limited interpretation.

Because all observed effects were small, statistical significance should not be interpreted as evidence that province, educational attainment, place of residence, or health knowledge strongly determined respondents' perceptions.

Future studies should use representative samples, validated measures, verified levels of familiarity with the curriculum, and more detailed measures of the sources and content of public criticism.

## CONCLUSIONS

1) Province showed the clearest association with how adults perceived the reasons for public criticism of the proposed Health Education subject. Substantive reasons were selected more often in the Mazowieckie province and political reasons in the Lubelskie province, whereas ideological reasons were more frequent in Podkarpackie than in the Mazowieckie or Lubelskie provinces.
2) Associations with place of residence, educational attainment, and health-knowledge level were considerably weaker. The small effect sizes indicate that the pattern of perceived reasons for public criticism is multifactorial and that no single factor examined in this study adequately explains the observed response pattern.
3) Communication accompanying implementation should therefore address substantive, political, and worldview-related concerns rather than assume a single dominant source of public criticism.

For items Q15–Q18, scoring was based on meeting or exceeding the predefined minimum frequency threshold. Responses indicating a higher frequency than the minimum threshold were not penalised. Each item was scored dichotomously: 1 point for meeting the criterion and 0 points for all other responses. The total score ranged from 0 – 6; scores of 0 – 2 were classified as low, 3 – 4 as medium, and 5 – 6 as high. The full wording and all response options are provided in Supplementary Files 1 and 2.

## REFERENCES

1. International Commission on the Futures of Education. Reimagining our futures together: a new social contract for education. Paris: UNESCO; 2021. https://doi.org/10.54675/ASRB4722
2. OECD. Trends shaping education 2025. Paris: OECD Publishing; 2025. https://doi.org/10.1787/ee6587fd-en.
3. Dodd S, Widnall E, Russell AE, et al. School-based peer education interventions to improve health: a global systematic review of effectiveness. BMC Public Health. 2022;22:2247. https://doi.org/10.1186/s12889-022-14688-3
4. de Medeiros GCBS, de Azevedo KPM, Garcia D, et al. Effect of school-based food and nutrition education interventions on the food consumption of adolescents: a systematic review and meta-analysis. Int J Environ Res Public Health. 2022;19(17):10522. https://doi.org/10.3390/ijerph191710522
5. Ma KKY, Burn AM, Anderson JK. Review: School-based mental health literacy interventions to promote help-seeking: a systematic review. Child Adolesc Ment Health. 2023;28(3):408–424. https://doi.org/10.1111/camh.12609
6. Kolbe LJ. The future of school health education in the United States: an ontology. J Sch Health. 2024;94(7):661–673. https://doi.org/10.1111/josh.13436
7. van der Linden S. Misinformation: susceptibility, spread, and interventions to immunize the public. Nat Med. 2022;28(3):460–467. https://doi.org/10.1038/s41591-022-01713-6
8. Nutbeam D, Lloyd JE. Understanding and responding to health literacy as a social determinant of health. Annu Rev Public Health. 2021;42:159–173. https://doi.org/10.1146/annurev-publhealth-090419-102529
9. Stimpson JP, Park S, Adhikari EH, et al. Perceived health misinformation on social media and public trust in health care. Med Care. 2025;63(9):686–693. https://doi.org/10.1097/MLR.0000000000002180
10. Lohan M, López A. Comprehensive sexuality education: an overview of the international systematic review evidence. Paris: UNESCO; 2023. https://unesco.org.uk/resources/comprehensive-sex-education-an-overview-of-the-international-systematic-review-evidence [access: 2026.08.12].
11. Efe H, Umdu Topsakal Ü. Public opinion study on school health education programs: family needs assessment study. Int J Environ Res Public Health. 2025;22(7):1088. https://doi.org/10.3390/ijerph22071088.
12. Freeman JL, Caldwell PHY, Scott KM. How adolescents trust health information on social media: a systematic review. Acad Pediatr. 2023;23(4):703–719. https://doi.org/10.1016/j.acap.2022.12.011
13. Powell J, Pring T. The impact of social media influencers on health outcomes: a systematic review. Soc Sci Med. 2024;340:116472. https://doi.org/10.1016/j.socscimed.2023.116472
14. Niederdeppe J, Boyd AD, King AJ, et al. Strategies for effective public health communication in a complex information environment. Annu Rev Public Health. 2025;46:411–431. https://doi.org/10.1146/annurev-publhealth-071723-120721
15. Kołłątaj B, Kołłątaj WP, Wasiewicz J, et al. Public response to the proposed 'Health Education' subject in schools in Poland – attitudes, curriculum familiarity, and information sources. Ann Agric Environ Med. 2026. https://doi.org/10.26444/aaem/225377. Epub 22 Jul 2026
16. Swire-Thompson B, Lazer D. Public health and online misinformation: challenges and recommendations. Annu Rev Public Health. 2020;41:433–451. https://doi.org/10.1146/annurev-publhealth-040119-094127
17. Gouëdard P, Pont B, Hyttinen S, et al. Curriculum reform: a literature review to support effective implementation. OECD Education Working Papers, No. 239. Paris: OECD Publishing; 2020. https://doi.org/10.1787/efe8a48c-en
18. WHO Regional Office for Europe. Health literacy in the context of health, well-being and learning outcomes: the case of children and adolescents in schools. Copenhagen: WHO Regional Office for Europe; 2021. https://www.who.int/europe/publications/i/item/WHO-EURO-2021-2846-42604-59268 [access: 2026.08.12].
19. Rueskov V, Korshøj M, Lund T, et al. Health literacy among socioeconomically disadvantaged adolescents: a systematic review of interventions in schools. Adolesc Res Rev. 2026;11(1):1–47. https://doi.org/10.1007/s40894-025-00273-3
20. El Kazdouh H, El-Ammari A, Bouftini S, et al. Teachers' perceptions of health education and middle school curriculum: a qualitative study. Teach Teach Educ. 2022;117:103765. https://doi.org/10.1016/j.tate.2022.103765
21. World Health Organization. Making every school a health-promoting school: implementation guidance for school health services. Geneva: World Health Organization; 2026. https://www.who.int/publications/i/item/9789240118966 [access: 2026.08.12].
22. World Health Organization, United Nations Educational, Scientific and Cultural Organization. Making every school a health-promoting school: global standards and indicators. Geneva: World Health Organization and UNESCO; 2021. https://www.who.int/publications/i/item/9789240025059 [access: 2026.08.12]
23. Rickwood D, Coleman-Rose CL. The effect of survey administration mode on youth mental health measures: social desirability bias and sensitive questions. Heliyon. 2023;9(9):e20131. https://doi.org/10.1016/j.heliyon.2023.e20131
24. Bispo Júnior JP. Social desirability bias in qualitative health research. Rev Saude Publica. 2022;56:101. https://doi.org/10.11606/s1518–8787.2022056004164