

Sources of Health Information, Ability to Assess its Credibility, and Interests in Health-Related Content

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ABSTRACT – Non-formal education represents an important context for the acquisition of health-related knowledge outside formal educational institutions and the structured healthcare system. In Slovenia, health-oriented non-formal educational programmes delivered by folk high schools enable adults to access health information while simultaneously supporting the development of critical thinking skills. Data were collected using a structured questionnaire administered via the online platform IKA, and analysed through univariate, bivariate, and multivariate statistical procedures. Online articles were identified as the most frequently used source of health information. The highest levels of perceived credibility were attributed to written professional sources and healthcare professionals, whereas social media and celebrity sources were rated as the least trustworthy. When evaluating the reliability of health information, the respondents prioritised factual accuracy, clarity, and source credibility. Four key thematic domains of interest emerged: nutrition, physical activity, management of health conditions, and mental health and personal development. The findings indicate a clear need for educational interventions that strengthen the critical evaluation of health information.

Izvirni znanstveni članek

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KLJUČNE BESEDE: izobraževanje odraslih, kritično mišljenje, zdravstvena pismenost, reliability of health information

POVZETEK – Neformalno izobraževanje odraslih predstavlja pomemben kontekst za pridobivanje znanja, povezanega z zdravjem. Poleg centrov za krepitev zdravja izvajajo programe, usmerjene v dvig zdravstvene pismenosti, tudi ljudske univerze. Na udeležencih programov ljudskih univerz je bila izvedena raziskava, usmerjena v ugotavljanje interesa odraslih za zdravstvene vsebine ter sposobnost kritične presoje zdravstvenih informacij. Uporabljene so bile univariatne, bivariatne in multivariatne statistične analize. Rezultati so pokazali, da so respondenti kot najpogostejše uporabljen vir zdravstvenih informacij navedli poljudne članke, objavljene na spletu. Najvišjo stopnjo zaznane verodostojnosti so pripisali pisnim strokovnim virom in zdravstvenim delavcem, kot najpomembnejši kriterij za oceno zanesljivosti zdravstvenih informacij pa so izpostavili točnost, jasnost in verodostojnost. S faktorizacijo odgovorov na postavke interesa za zdravje smo identificirali štiri interesna področja: prehrana, telesna dejavnost, obvladovanje zdravstvenih stanj ter duševno zdravje in osebnostni razvoj. Ugotovitve kažejo na jasno potrebo po izobraževalnih intervencijah, ki krepijo kritično vrednotenje zdravstvenih informacij in so usmerjenе v razširjanje in poglobljanje poznavanja omenjenih štirih interesnih področij, povezanih z zdravjem.

1 Introduction

Health psychology is a relatively young psychological discipline, focused both on researching the influence of various psychological processes (cognitive, emotional, motivational) and behaviour (actions) on human health, as well as on applying research findings in the field of interventions to promote health and health-related

rational choices, and to strengthen the collective awareness directed toward health and well-being of all involved in the local community. The fundamental premise of this research field is that health-related behaviour and its change are influenced by numerous factors and mechanisms at various levels (Marks et al., 2021; Tapper, 2021). There are numerous theories about the change in health behaviour, for example the Health Belief Model (Abraham & Sheeran, 2015), the Protection Motivation Theory (Prentice-Dunn & Rogers, 1986), the Theory of Planned Behavior (Ajzen, 1991), the Information-Motivation-Behavioral Skills Model (Fisher et al., 2003), the Social Cognitive Theory (Bandura, 1986), and others. Meta-studies that examined various constructs in these theories and their impact on behaviour confirm the complexity of the issue, as constructs within the individual theories or models mostly explain only a small portion of the variability in the results (Marks et al., 2021; Tapper, 2021).

Based on the above-mentioned models, regardless of the explanatory power of an individual model or its constructs, it is possible to extract factors that contribute to behaviour change and operate at different levels (Onion Model, Marks et al., 2021). Therefore, in our research we focused on two groups of potential influences on people's health decisions: 1) cognition, namely, attitudes toward health-related information and the ability to assess their credibility (which represents an element of critical health literacy); 2) motivation or interest in various types of knowledge in the field of health and healthy lifestyle.

In the first part of the research, we focused on cognition or on the aspect of health literacy, which we understand in the context of newer definitions, for example Nutbeam (2000), who defines health literacy at three levels: functional health literacy (basic reading and writing skills that enable an individual to use health information), interactive health literacy (development of skills that enable the individual to act independently and based on information/knowledge), critical health literacy (the ability of an individual to critically evaluate and use information and actively participate in health care). We emphasized the second level of health literacy, in Nutbeam's model, which means interactive health literacy, and examined where the participants in the research obtain health information, to what extent they trust different sources of health information, by which criteria they evaluate them, and to what extent they change their behaviour under their influence. Evaluation of the quality of information sources, the selection of evaluation criteria, and – consequently – reflective scepticism represent important elements of critical thinking (Facione et al., 2011; Ennis, 1985; Halpern, 2014; Kompare & Rupnik Vec, 2016; Paul & Elder, 2006).

In the second part of the study, we explored the individuals' interest in health-related content, recognizing that such interests – alongside the perceived needs – constitute a fundamental component of motivation to engage with health education. Health outcomes and health-related behaviours are influenced by a complex interplay of factors operating across multiple levels, as conceptualized in the "Health Onion" model developed by Dahlgren and Whitehead (2021). This model delineates several layers of influence: innermost layer: non-modifiable individual characteristics, including age, sex, and genetic predispositions; first layer: individual lifestyle factors and

personal attitudes; second layer: social and community networks; third layer: broader living and working conditions, such as employment status, access to clean water and sanitation, availability of healthcare services, housing quality, educational attainment, work environment, and food security; outermost layer: overarching socioeconomic, cultural, and environmental determinants, including access to educational opportunities and reliable sources of health information.

The accessibility and availability of diverse educational programs financed by the state thus represent one of the many public health factors and are provided by both the Ministry of Health and the Ministry of Education. The latter primarily supports them through lifelong learning programs for the adult population, which in Slovenia are implemented by people's universities (adult education institutions/lifelong learning centres). The Resolution on Adult Education 2023–2030 in Slovenia (ReNPIO22-30, 2022) foresees the development of new publicly recognized programs (in which an individual does not obtain a formal qualification, only a certificate listing acquired knowledge and competencies) in various fields, including health, healthy lifestyle, and personal development.

In summary, the study is interested in the following research questions: What sources do people use to obtain health information? How do they perceive their credibility? What criteria do they use to judge the reliability of health information? What health topics are of interest to them?

2 Methods

A quantitative research study was conducted, based on descriptive and causal-non-experimental methods of work.

2.1 Instrument

For the study, a structured questionnaire was developed, consisting of three parts: 1. sources of health information, their perceived credibility, and impact on individual health behaviour (frequency of use and level of trust in individual health information sources); self-assessment of difficulties in understanding health information, 2. interest in various health-related topics, and 3. demographic information.

Most of the questionnaire consisted of the statements to which the respondents indicated their agreement on a five-point Likert scale. The questionnaire was developed by a working group of nine experts from the fields of education, health, economics, and psychology. Once a consensus among the experts was reached, the survey was carried out. To assess the internal consistency of the questionnaire, Cronbach's alpha coefficient was calculated, which indicated a high internal consistency with a value of 0.933.

2.2 Description of Data Collection and Processing

The questionnaire was prepared in electronic form and distributed to the respondents via their parent institutions, which implement various non-formal and publicly recognized programs that do not provide formal educational qualifications and are intended for adults. With the institutions' consent, the links to the questionnaire were sent to all individuals who had participated in any of the educational programs and who had given a written consent for the use of their email addresses. The survey was conducted in April 2023.

The collected data were processed using the statistical program SPSS. We applied univariate, bivariate, and multivariate statistical analyses: frequency distribution, mean values, ANOVA, chi-square test, and factor analysis. In some analyses, the number of responses is lower than 549, as the questionnaire did not require mandatory answers to avoid response fatigue. The respondents who answered fewer than two-thirds of the questions ($n = 45$) were excluded from the analysis.

2.3 Sample

A total of 549 individuals responded to most of the questionnaire items. Thirty-six participants did not provide their age, and one participant did not provide their gender. Data on the age and gender distribution of the respondents are presented in Table 1.

Table 1

Number of the respondents by gender and age/Število respondentov glede na spol in starost

<i>Age</i>	<i>Female</i>	<i>Male</i>	<i>Total</i>
15–30	28	7	35
31–50	176	21	197
51–70	196	37	233
Over 70	38	9	48
Total	438	74	513

3 Results

3.1 Sources of Health Information and Perceived Credibility

The participants were presented with a set of seven questions designed to evaluate the primary sources from which they most frequently obtain health-related information, the degree of trust placed in various information sources, the criteria used to assess the credibility of such information, the frequency with which they encounter comprehension difficulties, and the extent to which health information prompts behavioural change. Table 2 summarizes the responses from the sample population ($N = 549$) regarding the sources most commonly used to access health-related information. The participants were permitted to select multiple response options for this item.

Table 2

Information sources from which the respondents obtain health information/Viri zdravstvenih informacij iz katerih respondenti pridobivajo zdravstvene informacije

<i>Information sources</i>	<i>N</i>	<i>%</i>
Online articles	348	63.4
Friends, colleagues, relatives	280	51.0
Healthcare professionals	277	50.5
Health-related magazines	191	34.8
Radio, television	182	33.2
Online forums and social networks	177	32.2
Health-related workshops	136	24.8
Daily newspapers and magazines	128	23.3

As indicated in Table 2, the most commonly reported source of health-related information was online articles, cited by approximately two-thirds of the participants. Approximately 50% of the respondents reported obtaining health information from healthcare professionals, as well as from personal contacts such as friends, colleagues, and family members. Around one-third of the participants identified health-focused magazines, broadcast media, and internet forums as frequent sources. Fewer than 25% reported relying on daily newspapers, general-interest magazines, or health-related workshops. These results suggest that internet-based sources – excluding forums and social media platforms – constitute the primary avenue for accessing health information among the majority of the respondents.

Table 3

The degree of trust in the source of information reflected by the average score/Stopnja zaupanja v vir informacij, ki jo odraža povprečna ocena

<i>Information sources</i>	<i>$\bar{X}$</i>	<i>SD</i>
Written professional sources	3.90	0.74
Healthcare professionals	3.84	0.82
Trusted individuals (friends/family)	3.42	0.66
Social networks	2.68	0.71
Celebrities	2.57	0.87

Legend/Legenda: $\bar{X}$ – average value/aritmetična sredina/povprečje, SD – standard deviation/standardni odklon

As shown in Table 3, the participants rated the written professional sources as the most trustworthy, followed by healthcare professionals. The mean trust ratings for both sources were close to 4.0, corresponding to the response category “I trust it quite a lot.” the respondents also reported a relatively high level of trust in health-related information provided by close and trusted individuals ($M = 3.42$). In contrast, lower mean trust scores were observed for social networks ($M = 2.68$) and information disseminated by celebrities ($M = 2.57$), indicating trust levels between “moderately trust” and “mostly do not trust.”

A further statistical analysis revealed no significant differences in trust levels across educational attainment for most information sources. However, trust in written professional sources was significantly higher among the participants with higher educational attainment than among those with lower educational attainment ($F = 6.23$, $p < 0.001$). Table 4 displays the mean scores and standard deviations for the responses, evaluating the extent to which each criterion influences the participants' judgments regarding the credibility of health-related information sources.

Table 4

The average score of the influence of criteria on the judgment about the credibility of the obtained health information/Povprečna ocena vpliva kriterijev na presojo o verodostojnosti pridobljenih zdravstvenih informacij

<i>Credibility assessment criterion</i>	$\bar{X}$	<i>SD</i>
Justification of the truthfulness of information	4.14	0.80
Clarity of information	4.12	0.78
Credibility of the source of the information	3.76	0.91
Persuasiveness of the person giving information	3.31	0.94
Popularity of the information source	2.53	0.97
Widespread dissemination of the information	2.49	0.96
Likeability of the person giving information	2.47	0.99

Legend/Legenda: $\bar{X}$ – average value/aritmetična sredina/povprečje, *SD* – standard deviation/standardni odklon

Two criteria were most influential in the evaluations of health-information reliability: justification of accuracy and clarity, followed by perceived source reliability. The weighting of these criteria varied significantly by educational level. The participants with a higher education relied more strongly on source credibility ($F = 9.49$, $p < 0.001$), justification ($F = 4.64$, $p < 0.001$), and communicator persuasiveness ($F = 3.25$, $p = 0.004$) than those with lower educational attainment.

Of the total sample, 417 respondents (76%) reported on difficulties understanding health information, while 132 (24%) did not respond. Among the respondents, 44% reported occasional difficulty, 46% reported rare or no difficulty, and 9% reported frequent or constant difficulty.

Regarding the behavioural impact, 543 participants responded. Approximately two-thirds reported attempting to change their behaviour based on the trusted health information, though not consistently. An additional 22.7% ($n = 123$) reported occasional recall and action. Few respondents indicated no behavioural influence ($n = 21$; 3.9%) or consistent behaviour change ($n = 33$; 6.1%).

3.2 Interest in Health Education

The participants' interest in health-related topics was assessed across four thematic domains: nutrition, physical activity, management of health-related situations, and mental health and personal development.

Overall, interest in nutrition-related topics was moderate to high (all $M > 3$). The highest-rated items concerned the role of nutrition in health ($M = 4.11$, $SD = 0.78$) and healthy meal preparation ($M = 3.90$, $SD = 0.84$), whereas lower interest was observed for eating disorders ($M = 3.33$, $SD = 1.01$) and dietary habits ($M = 3.52$, $SD = 0.94$).

Topics related to physical activity were rated highly, with mean scores approaching 4. The greatest interest was expressed in identifying suitable forms of exercise ($M = 4.04$, $SD = 0.87$), understanding the health benefits of physical activity ($M = 3.99$, $SD = 0.88$), and integrating physical activity into daily life ($M = 3.96$, $SD = 0.89$).

The domain of managing health-related situations elicited substantial interest, particularly first aid ($M = 4.14$, $SD = 0.82$) and everyday health maintenance ($M = 4.02$, $SD = 0.83$). Interest in mental health and personal development topics was generally moderate. Stress management ($M = 3.51$, $SD = 1.34$), emotional regulation ($M = 3.49$, $SD = 1.37$), and conflict resolution ($M = 3.44$, $SD = 1.33$) were rated highest, while addiction management received the lowest interest rating ($M = 2.16$, $SD = 1.51$).

3.3 Connections Between Thematic Areas of Interest as a Basis for Developing Educational Modules

Next, we explored how individual interest variables in different health-related topics are connected. The factor analysis using the principal component method with Varimax rotation revealed that the topics group into four domains, as originally defined in the questionnaire: nutrition, physical activity, managing health-related situations, and mental health with personal development. Only one item, sleep, shifted categories. While it was theoretically placed under prevention, the analysis showed that it is more closely related to topics from the "Physical activity" domain. This finding suggests that the topic "The effect of sleep on health" could be placed under "Physical activity," as people interested in physical activity are also interested in sleep, and vice versa, those uninterested in physical activity are also not interested in the impact of sleep on health (Table 5).

Table 5

Results of factor analysis with the Varimax Rotated Component Matrix/Rezultati faktorrske analize z rotirano komponentno matriko Varimax

<i>Variables</i>	<i>Components (factors)</i>			
	<i>Mental Health</i>	<i>Physical Exercises</i>	<i>Nutrition</i>	<i>Prevention</i>
How to communicate effectively and resolve conflicts?	0.831	0.188	0.110	0.143
How to recognize, accept, and regulate emotions?	0.815	0.272	0.086	0.164
How to become more self-confident?	0.775	0.086	0.125	0.099
How to become more self-focused (mindfulness)?	0.755	0.208	0.131	0.140
How to motivate myself (work, study, sports...)?	0.750	0.125	0.187	0.227
How to manage stress?	0.729	0.300	0.097	0.166
How to avoid or manage addiction?	0.623	0.018	0.199	0.223
How to include physical activity in daily life?	0.205	0.771	0.268	0.127
What physical/sport activities are suitable for me?	0.239	0.767	0.313	0.133
Why is physical activity important for my health/well-being?	0.181	0.737	0.245	0.281
How can I take care of my health daily?	0.244	0.673	0.347	0.222
How to adjust my diet to my physical activity?	0.204	0.543	0.380	0.158
How does sleep affect my health?	0.289	0.532	0.106	0.509
How to prepare a healthy meal?	0.110	0.307	0.762	0.010
How to eat healthily without giving up foods?	0.107	0.269	0.738	0.027
What in nutrition is crucial for health?	0.155	0.317	0.710	0.201
What are different dietary habits?	0.152	0.236	0.702	0.243
How do dietary supplements affect health?	0.205	0.091	0.603	0.253
What are eating disorders?	0.154	0.095	0.458	0.457
How to navigate the healthcare system?	0.173	0.104	0.109	0.756
Which preventive programs and education are available in Slovenia?	0.256	0.103	0.224	0.750
How to provide first aid in various situations?	0.195	0.101	0.057	0.655
How to avoid infectious diseases?	0.112	0.386	0.138	0.654
What are the most common chronic diseases and how to reduce the risk?	0.146	0.475	0.254	0.630
<i>Cronbach's alpha</i>	0.825	0.863	0.866	0.906

4 Discussion

4.1 Sources of Health Information and Their Perceived Credibility

The initial phase of the study examined the sources from which the participants obtain health information, their perceived credibility, the criteria used to assess reliability, and the influence of information on health-related behaviour. This analysis was guided by the framework proposed by Sørensen et al. (2012), which emphasizes the abilities to access, understand, appraise, and apply health information, and was further informed by theories of critical thinking (Paul et al., 1989; Ennis, 1985).

The findings indicate that the participants most frequently rely on the digital sources of health information, particularly the internet articles, while the professional sources, such as healthcare experts and specialized publications, are used less often. This pattern is concerning, as digital environments, especially social media and online forums, enable the dissemination of unverified and potentially misleading information. Despite this, approximately one-quarter of the respondents identified such platforms as important sources of health information. As noted by Van Kessel et al. (2022), this underscores the growing importance of digital and health literacy, which are essential for critically evaluating online health content in contemporary information environments. Although not the most commonly utilized sources of health information, professional publications and healthcare experts are perceived as the most credible, receiving the highest mean trust ratings. On average, the participants reported trust levels close to 4, corresponding to the response “I trust quite a lot.” However, it is important to note that the individuals with lower levels of health literacy tend to place less trust in the information provided by the healthcare professionals and more trust in sources such as television, social media, and blogs, maintained by celebrities, friends, and pharmaceutical companies (Chen et al., 2019). The participants also expressed a relatively high trust in the health information received from close personal contacts. While such sources may be well-intentioned and emotionally supportive, they are not necessarily accurate or evidence-based, and may primarily serve to reduce psychological discomfort rather than convey factual content. Despite somewhat lower average ratings, the trust placed in the health information disseminated through social media platforms and by celebrities remains, from the standpoint of critical thinking theory, concerningly high. The mean responses approached the category of “moderate trust,” suggesting a limited understanding of the principles underpinning source credibility. Notably, except for professional sources, no statistically significant differences were observed in trust levels across educational attainment. As expected, individuals with higher education reported significantly greater trust in professional sources – a likely consequence of the role of education in fostering critical thinking and a stronger orientation toward scientific authority. Within this context, the concept of critical health literacy becomes particularly salient. As noted by Sadar and Erjavec (2021), critical health literacy is essential in an era characterized by the constant and ubiquitous availability of diverse information sources. The ability to assess the credibility, relevance,

and accuracy of such information is a fundamental competency for informed health decision-making in the digital age.

In our sample, the primary criteria influencing the individuals' assessments of information reliability were clarity, justification of truth, and source credibility. These align with the key constructs in the critical thinking theory, which emphasize such factors in evaluating credibility. A recent meta-analysis by Ou & Ho (2024) identified message quality, source credibility, and message fluency as the most influential factors in credibility judgments. Our findings are consistent with this, as the participants in our study reported a relatively high trust in information that was clear and came from credible sources. A notable finding is the comparatively lower average scores assigned to other criteria; however, these scores remain relatively high in absolute terms, nearing the threshold of "moderately influential." According to the established theoretical frameworks in critical thinking, factors such as source popularity, widespread dissemination, and the likeability of the information provider are not considered valid indicators of credibility. Further analysis revealed that the perceived importance of specific criteria was associated with the participants' educational attainment. Individuals with higher levels of education attributed a significantly greater importance to the credibility of the source of information, justification of information, and persuasiveness of the person giving the information than those with lower educational backgrounds. The first two criteria are exactly those central to professional education and are consistently employed by experts across diverse domains. When evaluating information credibility, experts tend to prioritize content-specific features and draw upon domain-specific or scientific knowledge. In contrast, non-experts (or laypersons) are more likely to rely on superficial cues, such as surface characteristics or social endorsement (Ou & Ho, 2023). Based on these findings, it is recommended that the development of a critical attitude toward health-related information be prioritized as a core objective in publicly endorsed health and healthy lifestyle education programs (in Slovenia). In particular, the concept of credibility of information should be explicitly addressed, and learners should be equipped with skills for evaluating the trustworthiness of health information as a key objective and strategy for enhancing informed decision-making regarding health.

4.2 Interest in Health Education Among Adult Users of Public's Universities Programs – Thematic Relevance of the Proposed Modules

The publicly recognized adult education program on health, healthy lifestyles, and personal development was designed using a modular structure, following the established guidelines for adult education program development (Dovžak et al., 2020). The program was based on the presumed needs and challenges of the adult population. Four modules were envisioned: Healthy Nutrition, Physical Health and Disease Prevention, Exercise for Health, and Mental Health with a Focus on Personal Development. In the second phase of the study, we examined the perceived relevance and interest in the proposed modules among the potential program participants. The results indicate that the proposed modules and their thematic content – formulated as

specific questions in the survey, which the modules would address – elicited a considerable interest. On average, participant ratings approached 4 on a 5-point Likert scale (“I am quite interested”), suggesting a high potential for engagement among the users of adult education (folk high school) programs.

Given that poor nutrition is a recognized risk factor for numerous chronic non-communicable diseases – such as type 2 diabetes, cardiovascular disease, and certain cancers (Musaiger & Al-Hazzaa, 2012) – we developed the Healthy Nutrition module. The most highly rated topics in this module included: What aspects of nutrition are most important for health? How to prepare a healthy meal? and How to eat healthily without giving up favourite foods? The lowest-rated topic concerned eating disorders, though even this item received an average rating above 3 (“moderately interested”). These findings affirm the appropriateness and relevance of the selected topics for this module. In the Exercise for Health module, all proposed topics received exceptionally high ratings. The participants expressed the greatest interest in questions such as: What types of physical or sports activities are appropriate for me? and Why is exercise important for health and well-being? These results underscore a strong demand for content in this area. Particularly for older adults, physical activity is considered a key factor in maintaining health and overall well-being (Chia et al., 2023).

Considering that the general health literacy in Slovenia remains relatively low – with two-thirds of the population demonstrating limited navigational health literacy (Vrdelja et al., 2022) – we developed the Physical Health and Preventive Activities module, which encompasses a broad range of relevant topics. The average scores for all items within this module exceeded 3.6. The most interest was shown in the following topics: first aid knowledge, the concept of healthy living, the impact of sleep on health, and strategies for reducing the risk of chronic diseases, with mean scores approaching or exceeding 4. Additional interest was observed in areas related to preventive health programs in Slovenia and navigating the healthcare system, indicating that the module aligns well with the participant needs and interests.

Finally, based on the findings by Cybulski et al. (2015), who reported that biopsychosocial challenges reduce the quality of life in older adults, we developed the Personal Development module. Although this module received the lowest overall interest ratings compared to the others, the average scores for most topics remained above 3, indicating a moderate interest. The highest-rated topics included: How to manage stress, How to recognize, accept, and regulate emotions, and How to communicate effectively and resolve conflicts. The lowest-rated topic pertained to addiction management, which received a mean score slightly above 2, corresponding to “mostly not interested.” This may suggest that the individuals who participate in voluntary adult education programs either do not identify with addiction-related issues or perceive them as less personally relevant.

The factor analysis also shows that there are two thematic clusters that can be placed in two modules – next to the module in which we placed it in the program or in the prevention module – namely, sleep and eating disorder. This provides a justification for placing both contents in the context of different modules.

4.3 Practical Implications

Given that the public adult education programs are grounded in voluntary participation, the curriculum design should be aligned with the actual interests, needs, and motivational determinants of prospective participants. The findings of the present study provide an important empirical basis for future curriculum development, enabling the design of educational content that is both relevant and engaging for adult learners.

The results further offer the guidelines for the continued development of programs aimed at strengthening health literacy. A particular emphasis should be placed on fostering the awareness of the credibility of information sources, as well as on developing the competencies for the critical evaluation of the reliability and validity of health-related information.

At the content level, the study indicates a consistently high level of interest across all the examined health domains, including physical activity, healthy nutrition, prevention of chronic diseases, and mental health.

4.4 Limitations of the Study

Several limitations should be considered when interpreting the findings of this study. The sample was limited to the participants in non-formal education programs at people's universities (adult education institutions/lifelong learning centres) in Slovenia, which may limit the generalizability of the findings to the wider adult population. The study was conducted using an online questionnaire, which may have excluded individuals with limited digital literacy or access to digital tools. While the questionnaire covered a broad range of health topics and informational behaviours, it did not explore deeper qualitative aspects, such as personal meaning, motivation, or barriers to behaviour change. The cross-sectional nature of the study does not allow for causal conclusions, and future longitudinal or mixed-methods research would be valuable in confirming and expanding upon these results.

5 Conclusion

This study highlights the predominance of digital sources in the acquisition of health information, alongside notable variations in perceived credibility across information sources. While healthcare professionals and professional publications were identified as the most trusted sources, the relatively high level of trust placed in social media and celebrity sources indicates a limited understanding of source credibility among parts of the population. These findings underscore the importance of strengthening critical health literacy as a central component of public health education.

The results further demonstrate a strong interest in structured, non-formal health education programs, particularly in areas related to nutrition, physical activity, preventive health, and personal development. To ensure quality and effectiveness, such programs should be based on evidence-based content, delivered by healthcare professio-

nals, and designed to promote clarity, relevance, and critical evaluation of information sources. By addressing these criteria, public health education initiatives can play a key role in supporting informed health decision-making and improving the population's health outcomes.

Dr. Tanja Rupnik Vec, dr. Tamara Štemberger Kolnik

Viri zdravstvenih informacij, sposobnost ocenjevanja njihove verodostojnosti in zanimanje za vsebine, povezane z zdravjem

Zdravju povezano vedenje ni rezultat zgolj individualne izbire, temveč ga oblikuje preplet osebnih, socialnih, okoljskih in sistemskih dejavnikov (Marks idr., 2021; Tapper, 2021). To kompleksnost pojasnjujejo različni modeli spreminjanja zdravstvenega vedenja (Ajzen, 1991; Fisher idr., 2003; Abraham in Sheeran, 2015; Prentice-Dunn in Rogers, 1986). Ker posamezni modeli pojasnijo le del variabilnosti zdravstvenega vedenja, je potrebno večdimenzionalno razumevanje odločanja o zdravju (Marks idr., 2021; Tapper, 2021). Raziskava se osredotoča na dva sklopa dejavnikov: kognitivne vidike zdravstvene pismenosti, predvsem dostopanje do informacij, zaupanje v vire in presojo njihove verodostojnosti, ter motivacijski vidik, izražen kot interes odraslih za različne zdravstvene vsebine. Zdravstvena pismenost je razumljena po Nutbeamovem modelu, ki razlikuje med funkcionalno, interaktivno in kritično zdravstveno pismenostjo (Nutbeam, 2000). Posebej pomembna je kritična zdravstvena pismenost, saj omogoča presojo kakovosti, zanesljivosti in uporabnosti informacij. Presoja zdravstvenih informacij je povezana s kritičnim mišljenjem, ki vključuje vrednotenje dokazov, argumentov, virov in logične utemeljenosti informacij (Facione, 2011; Ennis, 1985; Halpern, 2014; Paul in Elder, 2006). V digitalnem okolju, kjer so zdravstvene informacije množično dostopne, vendar različno zanesljive, postaja kritična presoja eden ključnih pogojev za varno odločanje o zdravju. Van Kessel idr. (2022) zato digitalno zdravstveno pismenost opredeljujejo kot pomemben dejavnik zdravja. Interes za zdravstvene vsebine predstavlja motivacijski pogoj za vključevanje odraslih v izobraževalne programe.

Namen raziskave je bil ugotoviti, katere vire zdravstvenih informacij odrasli uporabljajo, koliko jim zaupajo, katere kriterije uporabljajo pri presoji zanesljivosti, v kolikšni meri informacije vplivajo na njihovo vedenje ter katere zdravstvene vsebine jih najbolj zanimajo.

Izvedena je bila kvantitativna raziskava z deskriptivno in kavzalno-neeksperimentalno metodo. Uporabljen je bil strukturiran vprašalnik s tremi sklopi: viri zdravstvenih informacij, njihova zaznana kredibilnost in vpliv na vedenje; interes za zdravstvene vsebine ter demografski podatki. Večina postavk je bila oblikovana na petstopenjski Likertovi lestvici. Vprašalnik je pripravila interdisciplinarna skupina devetih strokovnjakov, njegova notranja konsistentnost pa je bila visoka (Cronbach $\alpha = 0,933$). Vpra-

šalnik je bil izveden elektronsko aprila 2023 med odraslimi, vključenimi v neformalne oziroma javnoveljavne programe izobraževanja odraslih na ljudskih univerzah. Podatki so bili obdelani s programom SPSS; uporabljene so bile frekvenčne porazdelitve, aritmetične sredine, analiza variance, hi-kvadrat test in faktorska analiza. Vzorec je obsegal 549 oseb. Med respondenti, ki so navedli spol in starost, je bilo 438 žensk in 74 moških. Največ respondentov je bilo starih od 51 do 70 let.

Prva ključna ugotovitev je, da odrasli zdravstvene informacije najpogosteje pridobivajo iz digitalnih virov. Spletne članke je kot vir navedlo 63,4 % respondentov. Približno polovica informacije pridobiva od prijateljev, sodelavcev in sorodnikov ter od zdravstvenih delavcev. Tretjina uporablja zdravstvene revije, radio in televizijo ter spletne forume oziroma družbena omrežja, manj kot četrtnina pa zdravstvene delavnice in dnevno časopisje. Druga ključna ugotovitev je razkorak med pogostostjo uporabe in zaznano verodostojnostjo virov. Čeprav so spletni viri najpogosteje uporabljeni, respondenti najvišjo stopnjo zaupanja pripisujejo pisnim strokovnim virom ($M = 3,90$) in zdravstvenim delavcem ($M = 3,84$). Relativno visoko zaupanje je bilo izraženo tudi do informacij zaupanja vrednih oseb ($M = 3,42$). Nižje, vendar ne zanemarljivo zaupanje je bilo izkazano do družbenih omrežij in javnih osebnosti. Zaupanje v pisne strokovne vire je bilo statistično značilno višje pri višje izobraženih respondentih ($F = 6,23$; $p < 0,001$). Pri presoji zanesljivosti zdravstvenih informacij sta bila najpomembnejša kriterija utemeljenost resničnosti informacije ($M = 4,14$) in razumljivost informacije ($M = 4,12$), sledila je zanesljivost vira. Nižje so bili ocenjeni prepričljivost osebe, popularnost vira, razširjenost informacije in všečnost vira, vendar ti kriteriji pri delu respondentov še vedno vplivajo na presojo. Višje izobraženi respondenti so statistično značilno večji pomen pripisali zanesljivosti vira ($F = 9,49$; $p < 0,001$), utemeljenosti informacij ($F = 4,64$; $p < 0,001$) in prepričljivosti osebe, ki informacijo posreduje ($F = 3,25$; $p = 0,004$). Tretja ključna ugotovitev je, da ima pomemben delež odraslih težave z razumevanjem zdravstvenih informacij in s prenosom informacij v vedenje. Med respondenti jih je 44 % navedlo, da zdravstvene informacije včasih težko razumejo, 46 % jih ima takšne težave redko ali nikoli, 9 % pa pogosto ali vedno. Približno dve tretjini skuša na podlagi zaupanja vrednih informacij spremeniti vedenje, vendar jim to ne uspe vedno. Le 6,1 % jih je navedlo, da vedenje zagotovo spremenijo, 3,9 % pa, da zdravstvene informacije na njihovo vedenje ne vplivajo. Drugi del raziskave je pokazal visok interes za izobraževalne vsebine s področja zdravja. Največ zanimanja je bilo izraženega za pomen prehrane za zdravje, pripravo zdravih obrokov, zdravo prehranjevanje brez občutka odrekanja, izbiro ustreznih oblik gibanja, pomen gibanja za zdravje, vključevanje gibanja v vsakdanje življenje, prvo pomoč in vsakodnevno skrb za zdravje. Vsebine duševnega zdravja in osebnostnega razvoja so bile ocenjene nekoliko nižje, vendar je bil izražen zmeren interes za obvladovanje stresa, uravnavanje čustev ter učinkovito komunikacijo in reševanje konfliktov.

Faktorska analiza je potrdila štiri vsebinska področja interesa: prehrana, gibanje, preventiva oziroma obvladovanje zdravstvenih situacij ter duševno zdravje z osebnostnim razvojem. Spanje se je statistično močnejše povezalo s področjem gibanja.

Rezultati potrjujejo, da digitalni viri predstavljajo osrednji kanal pridobivanja zdravstvenih informacij, vendar to odpira vprašanje zanesljivosti, razumljivosti in strokovne ustreznosti informacij. V skladu z Van Kessel idr. (2022) je treba digitalno zdravstveno pismenost razumeti kot pomemben javnozdravstveni dejavnik. Razkorak med pogostostjo uporabe spletnih virov in večjim zaupanjem v strokovne vire kaže, da dostopnost informacij še ne pomeni njihove zaznane verodostojnosti ali uporabnosti. Ugotovitve so skladne z raziskavo Chen idr. (2019), ki kaže, da posamezniki z nižjo zdravstveno pismenostjo pogosteje zaupajo manj strokovnim virom, kot so televizija, družbeni mediji, blogi znanih osebnosti in neformalna družabna omrežja. V tej raziskavi se je pokazalo, da višje izobraženi respondenti bolj zaupajo pisnim strokovnim virom in pri presoji informacij v večji meri uporabljajo kriterije, povezane z verodostojnostjo vira in utemeljenostjo informacij. Razumljivost informacij in njihova dokazna utemeljenost sta bila prepoznana kot ključna kriterija presoje. To je skladno s teorijami kritičnega mišljenja, ki poudarjajo jasnost, relevantnost, argumentiranost in kredibilnost informacij (Ennis, 1985; Halpern, 2014; Paul in Elder, 2006). Tudi Ou in Ho (2024) ugotavljata, da na zaznavo kredibilnosti vplivajo kakovost sporočila, kredibilnost vira in jasnost sporočanja. Vpliv popularnosti, razširjenosti in všečnosti vira pri delu respondentov pa kaže, da je treba v izobraževalne programe vključiti vsebine o presoji verodostojnosti zdravstvenih informacij. Raziskava potrjuje ustreznost modularno zasnovanega programa za odrasle. Visok interes za prehrano je pomemben z vidika preprečevanja kroničnih nenalezljivih bolezni, pri katerih je neustrezna prehrana pomemben dejavnik tveganja (Musaiger in Al-Hazzaa, 2012). Visok interes za telesno dejavnost je skladen z ugotovitvami, da je gibanje ključno za ohranjanje zdravja in kakovosti življenja, zlasti pri starejših odraslih (Chia idr., 2023). Interes za prvo pomoč, preventivo in orientacijo v zdravstvenem sistemu je pomemben glede na ugotovitve o omejeni zdravstveni pismenosti prebivalcev Slovenije, zlasti na področju navigacije po zdravstvenem sistemu (Vrdelja idr., 2022). Vsebine duševnega zdravja in osebnostnega razvoja ostajajo pomembne zaradi vpliva psihosocialnih dejavnikov na kakovost življenja odraslih in starejših oseb (Cybulski idr., 2015).

Raziskava kaže, da odrasli zdravstvene informacije najpogosteje pridobivajo iz digitalnih virov, vendar največ zaupanja pripisujejo strokovnim virom in zdravstvenim delavcem. Pomemben delež respondentov ima vsaj občasne težave pri razumevanju zdravstvenih informacij, del respondentov pa pri presoji zanesljivosti upošteva tudi manj ustrezne kriterije, kot so popularnost, razširjenost in všečnost vira. Odrasli izražajo visok interes za izobraževalne vsebine s področja prehrane, gibanja, preventive, prve pomoči in vsakodnevne skrbi za zdravje, kar potrjuje ustreznost razvoja modularno zasnovanih javnoveljavnih programov za odrasle. Izobraževalni programi za odrasle naj zato ne vključujejo zgolj posredovanja zdravstvenih informacij, temveč tudi sistematičen razvoj kritične in digitalne zdravstvene pismenosti, presoje verodostojnosti virov ter prenosa znanja v vsakodnevno vedenje. Takšni programi lahko prispevajo k bolj informiranemu odločanju, večji samostojnosti posameznikov pri skrbi za zdravje in dolgoročnemu izboljšanju javnozdravstvenih izidov.

Izjava o dostopnosti raziskovalnih podatkov

Članek temelji na raziskovalnih podatkih, ki se hranijo v 1ka sistemu in niso javno dostopni oziroma so dostopni pri avtorju na osnovi utemeljene prošnje.

LITERATURE

1. Abraham, C., & Sheeran, P. (2015). The health belief model. In M. Conner & P. Norman (Eds.), *Predicting and changing health behaviour: Research and practice with social cognition models* (3rd ed., pp. 30–70). Open University Press.
2. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
3. Chen, X., Orom, H., Hay, J. L., Waters, E. A., Schofield, E., Li, Y., & Kiviniemi, M. T. (2019). Differences in rural and urban health information access and use. *The Journal of Rural Health*, 35(3), 405–417. <https://doi.org/10.1111/jrh.12335>
4. Chia, F., Huang, W. Y., Huang, H., & Wu, C. E. (2023). Promoting healthy behaviors in older adults to optimize health-promoting lifestyle: An intervention study. *International Journal of Environmental Research and Public Health*, 20(2), Article 1628. <https://doi.org/10.3390/ijerph20021628>
5. Cybulski, M., Krajewska-Kulak, E., & Jamiolkowski, J. (2015). Preferred health behaviors and quality of life of the elderly people in Poland. *Clinical Interventions in Aging*, 10, 1555–1564. <https://doi.org/10.2147/CIA.S92650>
6. Dahlgren, G., & Whitehead, M. (2021). The Dahlgren-Whitehead model of health determinants: 30 years on and still chasing rainbows. *Public Health*, 199, 20–24. <https://doi.org/10.1016/j.puhe.2021.08.009>
7. Dovžak, K., Bandelj, E., Dolgan, T., Grželj, A., Kump, S., Možina, E., Možina, T., Muršak, J., Perme, E., Radinovič Hajdič, M., Rozman Zgonc, B., & Žalec, N. (2020). Izhodišča za pripravo javnoveljavnih izobraževalnih programov za odrasle. Andragoški center Slovenije.
8. Ennis, R. H. (1985). Goals for a critical thinking curriculum. In A. Costa (Ed.), *Developing minds: A resource book for teaching thinking* (pp. 54–57). Association for Supervision and Curriculum Development.
9. Facione, P. A. (2011). Critical thinking: What it is and why it counts. Insight Assessment.
10. Fisher, W. A., Fisher, J. D., & Harman, J. (2003). The information-motivation-behavioral skills model: A general social psychological approach to understanding and promoting health behavior. In J. Suls & K. A. Wallston (Eds.), *Social psychological foundations of health and illness* (pp. 82–106). Wiley. <https://doi.org/10.1002/9780470753552.ch4>
11. Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking* (5th ed.). Psychology Press.
12. Kompare, A., & Rupnik Vec, T. (2016). Kako spodbujati razvoj mišljenja? Od temeljnih miselnih procesov do argumentiranja. Zavod RS za šolstvo.
13. Marks, D. F., Murray, M., & Estacio, E. V. (2021). *Health psychology: Theory, research and practice* (6th ed.). SAGE.
14. Musaiger, A. O., & Al-Hazzaa, H. M. (2012). Prevalence and risk factors associated with nutrition-related noncommunicable diseases in the Eastern Mediterranean region. *International Journal of General Medicine*, 5, 199–217. <https://doi.org/10.2147/IJGM.S29663>
15. Nutbeam, D. (2000). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, 15(3), 259–267. <https://doi.org/10.1093/heapro/15.3.259>
16. Ou, M., & Ho, S. S. (2024). Factors associated with information credibility perceptions: A meta-analysis. *Journalism & Mass Communication Quarterly*, 101(2), 346–372. <https://doi.org/10.1177/10776990231222556>

17. Ou, M., & Ho, S. S. (2023). Does knowledge make a difference? Understanding how the lay public and experts assess the credibility of information on novel foods. *Public Understanding of Science*, 33(2), 241–259. <https://doi.org/10.1177/09636625231191348>
18. Paul, R., Binker, A. J. A., Jensen, K., & Kreklau, H. (1989). *Critical thinking handbook: High school*. Center for Critical Thinking and Moral Critique, Sonoma State University.
19. Paul, R., & Elder, L. (2006). *The miniature guide to critical thinking concepts and tools*. Foundation for Critical Thinking.
20. Prentice-Dunn, S., & Rogers, R. W. (1986). Protection motivation theory and preventive health: Beyond the health belief model. *Health Education Research*, 1(3), 153–161. <https://doi.org/10.1093/her/1.3.153>
21. Resolucija o Nacionalnem programu izobraževanja odraslih v Republiki Sloveniji za obdobje 2022–2030 (ReNPIO 22–30). (2022). Ministrstvo za vzgojo in izobraževanje. <https://pisrs.si/pregledPredpisa?id=RESO138>
22. Sadar, M., & Erjavec, K. (2021). Zdravstvena pismenost med slovenskimi srednješolci. *Pedagoška obzorja*, 36(2), 93–108.
23. Sørensen, K., Van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., Brand, H., & HLS-EU Consortium Health Literacy Project European. (2012). Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health*, 12(1), Article 80. <https://doi.org/10.1186/1471-2458-12-80>
24. Tapper, K. (2021). *Health psychology and behaviour change: From science to practice*. Macmillan Education.
25. Van Kessel, R., Wong, B. L. H., Clemens, T., & Brand, H. (2022). Digital health literacy as a super determinant of health: More than simply the sum of its parts. *Internet Interventions*, 27, Article 100500. <https://doi.org/10.1016/j.invent.2022.100500>
26. Vrdelja, M., Vrbovšek, S., & Berzelak, J. (2022). Rezultati Nacionalne raziskave zdravstvene pismenosti v Sloveniji (HLS-SI19). Nacionalni inštitut za javno zdravje.

Dr. Tanja Rupnik Vec, Psychologist with a university degree, Slovenian Institute for Adult Education, Associate Professor at the Faculty of Health Sciences in Celje

E-mail: tanja.rupnik.vec@acs.si

ORCID: <https://orcid.org/0009-0000-7054-4749>

Dr. Tamara Štemberger Kolnik, Associate Professor at the Faculty of Health Sciences in Celje

E-mail: tamara.stemberger-kolnik@fzvce.si

ORCID: <https://orcid.org/0000-0002-8241-0550>