

PRIMARY PREVENTION OF ONCOLOGICAL DISEASES AMONG YOUNG ADULTS IN THE CZECH REPUBLIC: A PILOT STUDY

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Abstract

Cancer remains a major public health challenge, with incidence rates continuing to rise despite advances in diagnostics and treatment. As a substantial proportion of cancer cases is considered preventable, primary prevention and cancer-related health literacy are particularly important in young adulthood, a period when long-term health behaviors are formed. The aim of this pilot study was to map the level of health literacy, awareness of cancer and its symptoms, and knowledge of preventive strategies including awareness of human papillomavirus (HPV) among young adults in the Czech Republic. The study employed an exploratory quantitative design based on a one-time questionnaire survey. The first part of the survey collected demographic data and explored previous health education in the family, the presence of health-oriented role models, and respondents' self-assessment of healthy lifestyle adherence. Three validated instruments were used: the Cancer Awareness Measure (CAM), the Health Literacy Survey 2019 (HLS19-Q12), and the HPV Knowledge Measure. The research sample included 164 participants aged 18–30 years ($M = 22.48$, $SD = 2.13$), comprising 106 women (64.2%) and 58 men (35.2%). The results showed a generally low level of health literacy, with 44.3% of respondents categorized as having inadequate and 32.9% as problematic health literacy. Gender differences emerged in lifestyle behaviors: women demonstrated greater adherence to healthy eating and sufficient sleep, while men reported higher engagement in physical activity. Respondents showed limited awareness of cancer and its symptoms, as well as very low knowledge of HPV-related risks and prevention. Identified barriers to seeking medical help included embarrassment, lack of time, and fear of diagnosis. This study highlights critical gaps in cancer-related health literacy and prevention awareness among young Czech adults, emphasizing the need for targeted, gender-sensitive educational campaigns and comprehensive public health interventions aimed at strengthening primary prevention efforts.

Keywords: *Health literacy, primary prevention, risk factors, oncological diseases, young adulthood.*

1. Introduction

Cancer has increasingly come to the forefront of public health discussions due to its rising incidence and substantial societal impact. Despite progress in diagnostics and treatment, incidence continues to rise, placing a growing burden on individuals and healthcare systems. As 30–50% of cancer cases are preventable (Soerjomataram & Bray, 2021), the role of primary prevention is therefore particularly significant, as it targets behavioral and environmental risk factors while promoting protective health behaviors. These considerations are especially relevant in young adulthood, a key yet often overlooked period for prevention, during which individuals gain increasing independence, establish long-term health habits, and frequently engage in risky behaviors while making limited use of preventive services (Daw et al., 2017; Harris et al., 2006).

The present study examines health literacy, cancer awareness, and HPV-related knowledge among young adults aged 18–30 in the Czech Republic, with the aim of identifying key informational gaps that may support the development of targeted preventive strategies.

2. Method

The study employed a quantitative, exploratory, one-time questionnaire design. The sample consisted of 164 young adults aged 18–30 ($M = 22.48$, $SD = 2.13$); 106 were women (64.2%) and 58 men (35.2%). Inclusion criteria were Czech nationality and age within the specified range. Participants were recruited online through convenience and partial snowball sampling.

Data were collected via an online questionnaire comprising demographic items and three validated self-report measures. Cancer awareness was assessed using the Cancer Awareness Measure (CAM), covering warning signs, risk factors, screening awareness, and help-seeking barriers. In addition to general domains, the CAM also includes items targeting awareness of specific high-incidence cancers, such as breast, prostate, and colorectal cancer (Cancer Research UK, 2008). The measure was translated and culturally adapted to the Czech sociocultural context using a forward–backward translation procedure. Health literacy was measured with the 12-item Health Literacy Survey 2019 (HLS19-Q12; HLS19 Consortium of the WHO Action Network M-POHL, 2021). Knowledge of HPV, HPV testing, and vaccination was examined using the HPV Knowledge Measure (Waller et al. 2012), which was also translated and linguistically validated.

Participants were informed about the study aims, anonymity, and their right to withdraw. Data were analyzed using descriptive statistics, independent samples t-test for gender comparison, and frequency-based content analysis for open-ended responses.

3. Results

Most participants reported having been encouraged to follow a healthy lifestyle in their family (79.3%) and having at least one close person who adheres to healthy habits (90.2%). Women more frequently reported sufficient sleep and adherence to healthy eating habits, while men more commonly reported regular engagement in physical activity.

3.1. Health literacy

Of 164 participants, 133 provided complete data. The mean health literacy score was $M = 50.93$ ($SD = 9.69$). Following HLS19-Q12 criteria (Pelikan et al., 2022), 43.3% were classified as inadequate and 32.9% as problematic, while only 4.9% showed sufficient health literacy. Another 18.9% could not be categorized due to frequent non-responses. The most difficult items concerned finding information on managing psychological problems and locating professional help, rated as difficult or very difficult by over 70% of respondents.

Gender differences in health literacy were examined using an independent samples t-test after checking normality with the Shapiro–Wilk test. Men scored slightly higher ($M = 52.97$, $SD = 10.74$) than women ($M = 49.86$, $SD = 8.97$), but the difference was not statistically significant, $t(131) = 1.77$, $p = .078$, Cohen's $d = 0.32$.

3.2. Cancer awareness

Knowledge varied across CAM domains. Awareness of common warning signs was relatively high, whereas less salient symptoms produced greater uncertainty. Participants correctly identified breast cancer as most common in women, but fewer recognized prostate cancer as most common in men. Screening awareness was highest for breast and cervical cancer, but fewer than half knew about colorectal cancer screening.

Help-seeking intentions indicated potential delays: 56.7% of respondents would wait longer than one week before consulting a doctor for a potentially serious symptom. Barriers were assessed with the CAM help-seeking subscale, using a four-point response scale (“yes, often”; “yes, sometimes”; “no”; “don't know”). The most frequently endorsed obstacles were “having too many other things to worry about” (18.9% “yes, often”, 40.2% “yes, sometimes”), embarrassment (14.0% “yes, often”, 34.1% “yes, sometimes”), and fear of diagnosis (23.2% “yes, sometimes”). These patterns suggest that psychological rather than practical factors are the main obstacles to timely help-seeking.

3.3. Knowledge of HPV

HPV knowledge was generally low, with a mean correct response rate of 39.63%. Following the approach of Breitkopf et al. (2016), scores at or above the 75th percentile ($\geq 68.97\%$ correct answers) were classified as high knowledge. Only 25.6% of respondents reached this level, while 74.4% showed low HPV knowledge. Respondents frequently selected “don't know” in items concerning HPV transmission, testing, vaccination, and vaccine availability. Overall, 32.3% of the sample reported having been vaccinated against HPV.

4. Discussion and conclusion

The findings of this study indicate that young adults in the Czech Republic show generally low health literacy, with most respondents classified as inadequate or problematic. Compared with findings by

Kučera et al. (2023), the level observed here is markedly higher. Cancer awareness was uneven: while common warning signs were recognized, uncertainty remained around less salient symptoms. The CAM subscale showed that lack of time, embarrassment, and fear of diagnosis were the most common barriers, indicating psychological factors that may delay help-seeking, consistent with Tarkang and Zotor (2015). HPV-related knowledge was also low, with substantial uncertainty regarding testing, vaccination, and basic characteristics of HPV infection, which aligns with findings by Marlow et al. (2013).

These results highlight the need for clearer and more accessible preventive communication for young adults. Strengthening health literacy, improving understanding of cancer risks, and addressing psychological barriers to help-seeking may support earlier detection and healthier behavior. Tailored educational interventions, personalized approaches, and accessible preventive information could play an essential role in reducing the burden of future cancer within this age group.

However, these findings should be interpreted with caution due to the small, non-probability sample and reliance on self-report measures, which limit generalizability.

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