

SUPPLEMENTARY MATERIALS

Methods

A cross-sectional, anonymous survey was conducted between November 2025 and December 2025 among 150 respondents representing the medical community. Participants had the option to complete the questionnaire either electronically or on paper. The electronic version was accessible via a link shared on social media and through a QR code scan using a smartphone, whereas the paper version was distributed by researchers in 4 different hospitals in Poland. Individuals included in the study were those working in healthcare or studying medical disciplines, who provided consent to participate and completed all mandatory sections of the questionnaire. A proprietary questionnaire was used, consisting of six sections: 1) demographic data, 2) knowledge and experience regarding artificial intelligence (AI), 3) attitudes toward AI, 4) concerns and ethical issues, 5) future prospects and expectations regarding AI in medicine, and optional open-ended questions. For the purposes of this study, “perceptions of artificial intelligence” were defined as a composite construct encompassing (1) attitudes toward AI (evaluative judgments regarding its usefulness and impact), (2) trust in AI systems (confidence in AI-generated outputs and perceived safety), and (3) views on the role of AI in healthcare practice and education. The demographic section collected information on age, gender, professional status, and, depending on the group, year and field of study, clinical experience, physicians’ professional advancement, specialization, and workplace. The knowledge and experience section assessed, among other factors, self-reported level of AI knowledge, sources of information, participation in training, and the use of AI-based tools in clinical practice. Attitudes toward AI were evaluated using a five-point Likert scale, measuring the degree of agreement with statements (1 indicated complete disagreement, and 5 indicated full agreement). Items assessed included the perceived impact of AI on healthcare quality, patient safety, the future of the medical profession, and trust in AI-based systems. The concerns section included multiple-choice questions addressing ethical, legal, and professional aspects of implementing AI in medicine. The fifth section included multiple-choice questions on potential areas of AI development in medicine and closed-ended questions regarding the anticipated impact of AI on medicine and patient safety. The final section contained open-ended questions concerning expectations for AI development and the competencies of future physicians. Closed-ended questions employed nominal scales and five-point Likert scales. The questionnaire was conducted in Polish and is included as Supplementary Material S2.

The study has several limitations. First, its cross-sectional design precludes causal inference. Second, a non-probability convenience sample was used, and information regarding the number of invited individuals, refusals, and response rate was unavailable. Third, the category of “other healthcare professionals” was heterogeneous and included multiple professional groups that could not be analyzed separately due to limited subgroup sizes. Fourth, the study employed an author-developed questionnaire that was not pilot-tested or psychometrically validated. Fifth, several variables were based on self-reported responses and may therefore be subject to reporting bias. Finally, no correction for multiple testing was applied; therefore, the findings should be interpreted as exploratory and require confirmation in larger studies.

Statistical analysis

Qualitative variables were presented as counts and percentages. Ordinal variables were analyzed using medians and interquartile ranges. Comparisons between two independent groups were performed using the Mann–Whitney U test, while comparisons involving more than two groups were conducted using the Kruskal–Wallis test followed by post hoc analysis. Statistical analyses were carried out using PQStat software (version 1.8.6.126). A p-value of < 0.05 was considered statistically significant. As the survey was intended for exploratory purposes and included multiple thematic domains rather than a single latent construct, no composite score was calculated.

Results - characteristics of the groups

Of the total of 150 responses, 38 came from paper questionnaires and 112 from online questionnaires. Within the sample, the largest groups were physicians (N = 72) and other healthcare professionals (N = 50). Among the physicians, 37 individuals (51.39 percent) were specialists, 19 (26.39 percent) were interns, and 16 (22.22 percent) were residents in training. Within the group of other healthcare professionals, the largest proportions were nurses (N = 25; 50 percent) and paramedics (N = 11; 22 percent). The remaining respondents in this group included: midwives (N = 3; 6 percent), physiotherapists (N = 3; 6 percent), medical secretaries (N = 2; 4 percent), caregivers (N = 2; 4 percent), laboratory diagnosticians (N = 2; 4 percent), sterilization technicians (N = 1; 2 percent), and surgical instrument technicians (N = 1; 2 percent). The small size of some subgroups made it impossible to carry out more detailed occupational analyses, which is why a group labelled “other healthcare professionals” was created.

The survey included 22 medical students. The distribution by year of study was as follows: 6th year – 10 students (45.45 percent), 3rd year – 4 students (18.18 percent), 5th year – 3 students (13.64 percent), 4th year – 3 students (13.64 percent), 2nd year – 1 student (4.55 percent), and 1st year – 1 student (4.55 percent). In this group, 13 students (59.09 percent) reported limited clinical experience (e.g., student internships), 6 (27.27 percent) reported other forms of experience (e.g., volunteering, assisting a physician), and 3 (13.64 percent) indicated no clinical experience.

Students of other medical disciplines comprised a group of 6 individuals. Their fields of study included nursing (N = 2; 33.33 percent), emergency medical services (N = 1; 16.67 percent), optometry (N = 1; 16.67 percent), physiotherapy (N = 1; 16.67percent), and medical analytics (N = 1; 16.67 percent). Four students in this group (66.67 percent) were in their 1st year, one (16.67 percent) in the 3rd year, and one (16.67 percent) in the 5th year. Two students (33.33 percent) reported limited clinical experience, whereas four (66.67percent) had no clinical experience.