

# Trust in Artificial Intelligence-generated health information and recommendations: a cross-sectional survey of 514 overweight and obese outpatients

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## ABSTRACT

**Aims:** To evaluate the perceptions of overweight and obese patients attending an outpatient clinic regarding the use of Artificial Intelligence (AI) for health-related issues, their trust in AI-generated information on obesity-related musculoskeletal complaints, and their attitudes toward receiving exercise and nutrition recommendations from AI.

**Methods:** This cross-sectional, anonymous survey included 514 overweight and obese patients attending outpatient clinics. The questionnaire consisted of demographic questions and six items related to AI. Associations between demographic characteristics and survey responses were analyzed.

**Results:** Overall, 49.4% of participants reported having used AI for health-related purposes at least occasionally. The most common response regarding trust in AI-generated health information was "I'm not sure" (59.3%). Participants were significantly more willing to receive nutrition recommendations than exercise recommendations from AI. Nearly half of the participants (49.4%) believed that physicians would continue to play an essential role in healthcare despite advances in AI. AI use, perceived usefulness of AI, and trust in AI were significantly associated with both age and educational level (all  $p < 0.01$ ). By gender, only willingness to receive AI-generated exercise recommendations differed significantly ( $p = 0.017$ ).

**Conclusion:** Patients were generally inclined to accept AI as a supportive tool under physician supervision, particularly for nutritional guidance and health information. However, they expressed greater reservations about AI-generated exercise recommendations and demonstrated a clear preference for professional validation. Age and educational level were significantly associated with these attitudes.

**Keywords:** Artificial Intelligence, chatbot, obesity, musculoskeletal system, patient attitudes, trust

## INTRODUCTION

Artificial Intelligence (AI) technologies, particularly large language models (LLMs) and natural language processing-based chatbots, have become increasingly prominent in healthcare in recent years.<sup>1,2</sup> These systems enable patients to access health-related information more quickly, easily, and comprehensively and have considerable potential for simplifying and explaining medical terminology, enhancing patient education, facilitating behavior change, and personalizing exercise and nutritional recommendations.<sup>3,4</sup> However, concerns remain regarding the accuracy, personalization, clinical appropriateness, and ethical acceptability of the information generated by AI-powered tools.<sup>5,6</sup>

The successful integration of AI into healthcare depends not only on its technological performance and accessibility but also on patients' trust in these technologies. Current evidence suggests that patients' attitudes toward AI are influenced by several factors, including trust, perceived risk, acceptance, expectations regarding transparency, and the presence of clinician oversight.<sup>7-9</sup> Patients generally prefer AI to function as a complementary decision-support tool rather than an autonomous substitute for physicians, and their trust increases when AI systems demonstrate high performance, transparency, and clinician involvement.<sup>8,10</sup> In addition, demographic characteristics, particularly age and educational level, have been shown to influence patients' acceptance and adoption of AI.<sup>8,11</sup> Therefore, understanding patients'

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expectations, concerns, and patterns of AI use is essential for the development of patient-centered AI applications.<sup>7,9</sup>

Obesity-related musculoskeletal disorders represent an important setting for the application of AI-assisted health education. Effective obesity management relies on nutritional counseling, physical activity, behavioral modification, and long-term patient adherence, all of which can be supported by AI-based chatbots and virtual health coaches through scalable, accessible, and personalized interventions.<sup>4,12-14</sup> However, recommendations for exercise and rehabilitation require careful consideration of individual clinical characteristics, pain severity, comorbidities, and functional capacity.<sup>15</sup> Although large language models such as ChatGPT have been shown to generate information that is largely consistent with evidence-based musculoskeletal rehabilitation guidelines, concerns remain regarding the consistency, completeness, and clinical nuance of their responses.<sup>5</sup> In patients with musculoskeletal disorders, successful treatment depends not only on medical or surgical interventions but also on adherence to exercise programs, understanding activity restrictions, weight management, lifestyle modification, and engagement in the rehabilitation process.<sup>16-18</sup> While AI-generated exercise recommendations have been shown to be relatively safe when appropriately evaluated, expert review by a physician or physiotherapist remains essential before their implementation in clinical practice.<sup>15,16</sup> Therefore, understanding how patients perceive AI, the areas in which they are willing to use it, and the factors that limit their trust is crucial for the development of patient-centered digital health interventions and future AI-assisted patient education strategies.

The aim of this study was to evaluate the use of AI for health-related purposes, patients' trust in AI-generated health information regarding obesity-related musculoskeletal disorders, and their attitudes toward receiving exercise and nutritional recommendations from AI among overweight and obese patients attending an outpatient clinic. In addition, the study examined the associations of demographic characteristics, including gender, age group, and educational level, with AI use, trust in AI-generated health information, and preferences for AI-generated exercise and nutritional recommendations.

## METHODS

These studies were conducted with the approval of the Scientific and Ethical Review Board for Medical Researches at Ankara Bilkent City Hospital (Date: 22.04.2026, Decision No: TABED 1/2470/2026). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. Written informed consent was obtained from all individual participants prior to their inclusion in the study.

This cross-sectional, questionnaire-based study was conducted between April 25 and June 25, 2026, among overweight and obese patients attending the outpatient clinics of the study hospitals with musculoskeletal complaints. Consecutive patients presenting to the outpatient clinic during the study period were invited to participate.

The study's inclusion criteria included adults aged 18 years or older with a self-reported body-mass index (BMI) of 25 kg/m<sup>2</sup> or higher, who voluntarily consented to complete the questionnaire. The BMI of the participants was determined on the basis of their self-reported height and weight. Patients who declined to participate, exhibited reading or comprehension difficulties, or returned incomplete questionnaires were excluded from the study. During the study period, 556 volunteer patients completed the questionnaire. Following the exclusion of 42 questionnaires due to noncompliance with the established eligibility criteria or the presence of incomplete responses, the final analysis encompassed data from 514 participants. No formal sample size or power calculation was performed because this was an exploratory cross-sectional survey.

The questionnaire was completed anonymously, and no personally identifiable information was collected. Participants completed the questionnaire independently while attending the outpatient clinic. Investigators were available only to clarify procedural questions and did not influence participants' responses. This study did not aim to establish a causal relationship between obesity and musculoskeletal disorders or to confirm specific clinical diagnoses. Instead, it included overweight and obese individuals who reported musculoskeletal pain or complaints and assessed their knowledge, perceptions, and healthcare-seeking behaviors regarding these complaints using a structured questionnaire. Musculoskeletal complaints were identified based on participants' self-reported responses, and no independent verification through clinical examination or medical record review was performed.

The questionnaire was developed for this study by two orthopedic surgeons and two bariatric surgeons. These surgeons had previous experience in questionnaire-based research and were actively involved in the management of patients with obesity and obesity-related musculoskeletal disorders. The questionnaire was developed in Turkish following a comprehensive review of the extant literature on AI, digital health, patient trust, and obesity-related musculoskeletal disorders.

Prior to the initiation of the primary study, the preliminary version of the questionnaire was subjected to a pilot testing phase involving 50 patients. This pilot testing phase was conducted with the objective of evaluating the clarity, comprehensibility, feasibility, and completion time of the questionnaire. The participants were encouraged to provide feedback regarding the clarity and comprehensibility of the questionnaire. Considering the commentary, minor revisions were implemented to enhance the readability and comprehensibility of the questionnaire prior to its finalization. The data obtained during the pilot study were not included in the final analysis.

The final questionnaire was composed of two sections. The initial section of the questionnaire solicited demographic information, encompassing gender (female/male), age group (19-30, 31-64, and ≥65 years), and educational qualification (below secondary education, high school, and undergraduate/postgraduate education). Participants were categorized

into three age groups to represent young adulthood, middle adulthood, and older adulthood, respectively, thereby enabling comparisons across clinically meaningful life stages. The second section of the study comprised six closed-ended questions that evaluated participants' experiences and attitudes toward AI in healthcare. (1) previous use of AI for health-related purposes; (2) the perceived usefulness of AI in understanding obesity-related musculoskeletal disorders; (3) trust in AI-generated health information regarding obesity and obesity-related musculoskeletal disorders; (4) willingness to receive AI-generated exercise recommendations; (5) willingness to receive AI-generated nutritional recommendations; and (6) opinions regarding whether AI could replace physicians in the future. Each inquiry incorporated predetermined response alternatives. The final Turkish-language questionnaire was administered in paper-based format. Printed questionnaires were distributed to eligible patients during their outpatient visit and were to be completed independently by the participants prior to being returned to the investigators.

### Statistical Analysis

The data were performed using IBM SPSS Statistics for Windows, version 26.0 (IBM Corp., Armonk, NY, USA). Categorical variables were summarized as frequencies and percentages. The associations between demographic characteristics (gender, age group, and educational level) and responses to the AI-related questionnaire items were evaluated using the Pearson Chi-square test, and Fisher's exact test when appropriate. All statistical tests were two-tailed, and a p-value of <0.05 was considered statistically significant.

## RESULTS

A total of 514 patients were included in the study, comprising 260 female (50.6%) and 254 male (49.4%). Most participants were 31-64 years of age (77.0%). Regarding educational attainment, 39.5% had undergraduate or postgraduate education, 30.4% had below secondary education, and 30.2% had completed high school. Overall, 49.4% of participants reported having used AI for health-related purposes at least occasionally, whereas 30.5% had never used AI. Half of the participants (50.6%) reported that they had never used AI to obtain information about obesity-related musculoskeletal disorders. The most common response regarding trust in AI-generated health information was "not sure" (59.3%), whereas 37.4% reported partial or complete trust and only 3.3% reported no trust. While 63.6% of participants were willing to receive AI-generated nutritional recommendations, only 8.6% were willing to accept AI-generated exercise recommendations without professional oversight (Table 1).

Gender was significantly associated only with willingness to receive AI-generated exercise recommendations ( $p=0.017$ ), with men being more willing than women to accept such recommendations. No significant gender-related differences were observed in AI use, perceived usefulness, trust in AI-generated health information, willingness to receive nutritional recommendations, or opinions regarding the future role of AI (all  $p>0.05$ ) (Table 2).

**Table 1.** Participant characteristics and overall responses to the AI-related questionnaire (n=514)

|                                                                                                                                                                          | n (%)      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Please indicate your gender</b>                                                                                                                                       |            |
| Female                                                                                                                                                                   | 260 (50.6) |
| Male                                                                                                                                                                     | 254 (49.4) |
| <b>Please indicate your age group</b>                                                                                                                                    |            |
| 19-30 years                                                                                                                                                              | 62 (12.1)  |
| 31-64 years                                                                                                                                                              | 396 (77.0) |
| >65 years                                                                                                                                                                | 56 (10.9)  |
| <b>Please indicate your level of education</b>                                                                                                                           |            |
| Below secondary                                                                                                                                                          | 156 (30.4) |
| High school                                                                                                                                                              | 155 (30.2) |
| Under/post-graduate                                                                                                                                                      | 203 (39.5) |
| <b>Have you previously consulted AI regarding a health-related issue (e.g. obtained health information from an application or an AI-based tool online)?</b>              |            |
| Frequently                                                                                                                                                               | 102 (19.8) |
| Occasionally                                                                                                                                                             | 152 (29.6) |
| Considering                                                                                                                                                              | 103 (20)   |
| Never                                                                                                                                                                    | 157 (30.5) |
| <b>Did the information you obtained from AI help you better understand your obesity-related musculoskeletal problems?</b>                                                |            |
| Very                                                                                                                                                                     | 52 (10.1)  |
| Somewhat                                                                                                                                                                 | 116 (22.6) |
| Not                                                                                                                                                                      | 57 (11.1)  |
| Misleading                                                                                                                                                               | 29 (5.6)   |
| Never used                                                                                                                                                               | 260 (50.6) |
| <b>To what extent do you trust the information provided by AI regarding obesity and related musculoskeletal conditions (e.g., need for surgery, diet, and exercise)?</b> |            |
| Completely                                                                                                                                                               | 305 (59.3) |
| Partially                                                                                                                                                                | 60 (11.7)  |
| None                                                                                                                                                                     | 132 (25.7) |
| Not sure                                                                                                                                                                 | 11 (3.3)   |
| <b>Would you be willing to receive exercise recommendations from AI?</b>                                                                                                 |            |
| Yes                                                                                                                                                                      | 44 (8.6)   |
| Need approval                                                                                                                                                            | 245 (47.7) |
| No                                                                                                                                                                       | 225 (43.8) |
| <b>Would you be willing to receive dietary recommendations from AI?</b>                                                                                                  |            |
| Yes                                                                                                                                                                      | 327 (63.6) |
| Need approval                                                                                                                                                            | 109 (21.2) |
| No                                                                                                                                                                       | 78 (15.2)  |
| <b>Do you believe that AI could replace physicians in the future?</b>                                                                                                    |            |
| Yes                                                                                                                                                                      | 72 (14)    |
| Physicians will endure                                                                                                                                                   | 254 (49.4) |
| No                                                                                                                                                                       | 65 (12.6)  |
| Not sure                                                                                                                                                                 | 123 (23.9) |
| AI: Artificial Intelligence                                                                                                                                              |            |

Age was significantly associated with AI use, perceived usefulness, trust in AI-generated health information, and willingness to receive AI-generated exercise recommendations (all  $p<0.05$ ) (Table 3). Younger participants reported more frequent AI use, greater perceived usefulness, higher levels

**Table 2.** Distribution of responses to the AI-related questionnaire according to gender

|                                                                                                                                                                   | Female, n (%) | Male, n (%) | p     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|-------|
| Have you previously consulted AI regarding a health-related issue (e.g. obtained health information from an application or an AI-based tool online)?              |               |             |       |
| Frequently                                                                                                                                                        | 45 (17.3)     | 57 (22.4)   | 0.284 |
| Occasionally                                                                                                                                                      | 81 (31.2)     | 71 (28.0)   |       |
| Considering                                                                                                                                                       | 58 (22.3)     | 45 (17.7)   |       |
| Never                                                                                                                                                             | 76 (29.2)     | 81 (31.9)   |       |
| Did the information you obtained from AI help you better understand your obesity-related musculoskeletal problems?                                                |               |             |       |
| Very                                                                                                                                                              | 17 (6.5)      | 35 (13.8)   | 0.070 |
| Somewhat                                                                                                                                                          | 66 (25.4)     | 50 (19.7)   |       |
| Not                                                                                                                                                               | 28 (10.8)     | 29 (11.4)   |       |
| Misleading                                                                                                                                                        | 15 (5.8)      | 14 (5.5)    |       |
| Never used                                                                                                                                                        | 134 (51.5)    | 126 (49.6)  |       |
| To what extent do you trust the information provided by AI regarding obesity and related musculoskeletal conditions (e.g., need for surgery, diet, and exercise)? |               |             |       |
| Completely                                                                                                                                                        | 28 (10.8)     | 32 (12.6)   | 0.884 |
| Partially                                                                                                                                                         | 66 (25.4)     | 66 (26.0)   |       |
| None                                                                                                                                                              | 8 (3.1)       | 9 (3.5)     |       |
| Not sure                                                                                                                                                          | 158 (60.8)    | 147 (57.9)  |       |
| Would you be willing to receive exercise recommendations from AI?                                                                                                 |               |             |       |
| Yes                                                                                                                                                               | 16 (6.2)      | 28 (11.0)   | 0.017 |
| Need approval                                                                                                                                                     | 116 (44.6)    | 129 (50.8)  |       |
| No                                                                                                                                                                | 128 (49.2)    | 97 (38.2)   |       |
| Would you be willing to receive dietary recommendations from AI?                                                                                                  |               |             |       |
| Yes                                                                                                                                                               | 163 (62.7)    | 164 (64.6)  | 0.895 |
| Need approval                                                                                                                                                     | 56 (21.5)     | 53 (20.9)   |       |
| No                                                                                                                                                                | 41 (15.8)     | 37 (14.6)   |       |
| Do you believe that AI could replace physicians in the future?                                                                                                    |               |             |       |
| Yes                                                                                                                                                               | 29 (11.2)     | 43 (16.9)   | 0.145 |
| Physicians will endure                                                                                                                                            | 130 (50.0)    | 124 (48.8)  |       |
| No                                                                                                                                                                | 39 (15.0)     | 26 (10.2)   |       |
| Not sure                                                                                                                                                          | 62 (23.8)     | 61 (24.0)   |       |
| n: Number of volunteers, p: Statistical significance value, AI: Artificial Intelligence                                                                           |               |             |       |

n: Number of volunteers. p: Statistical significance value. AI: Artificial Intelligence

of trust, and greater willingness to receive AI-generated exercise recommendations than older participants. However, willingness to receive nutritional recommendations and opinions regarding AI replacing physicians in the future did not differ significantly across age groups (both  $p>0.05$ ).

Educational level was significantly associated with AI use, perceived usefulness, trust in AI-generated health information, willingness to receive nutritional recommendations, and opinions regarding AI replacing physicians in the future (all  $p<0.05$ ) (**Table 4**). Participants with higher educational attainment reported greater AI use, higher trust in AI-generated health information, and greater willingness to receive nutritional recommendations, whereas uncertainty regarding the future role of AI decreased with increasing educational level. No significant association was observed between educational level and willingness to receive AI-generated exercise recommendations ( $p=0.189$ ).

**Table 3.** Distribution of responses to the AI-related questionnaire according to age groups

|                                                                                                                                                                   | 19–30 years<br>n (%) | 31–64 years<br>n (%) | >65 years<br>n (%) | p      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|--------------------|--------|
| Have you previously consulted AI regarding a health-related issue (e.g. obtained health information from an application or an AI-based tool online)?              |                      |                      |                    |        |
| Frequently                                                                                                                                                        | 27 (43.5)            | 70 (17.7)            | 5 (8.9)            | <0.001 |
| Occasionally                                                                                                                                                      | 24 (38.7)            | 123 (31.1)           | 5 (8.9)            |        |
| Considering                                                                                                                                                       | 4 (6.5)              | 86 (21.7)            | 13 (23.2)          |        |
| Never                                                                                                                                                             | 7 (11.3)             | 117 (29.5)           | 33 (58.9)          |        |
| Did the information you obtained from AI help you better understand your obesity-related musculoskeletal problems?                                                |                      |                      |                    |        |
| Very                                                                                                                                                              | 13 (21.0)            | 38 (9.6)             | 1 (1.8)            | <0.001 |
| Somewhat                                                                                                                                                          | 19 (30.6)            | 93 (23.5)            | 4 (7.1)            |        |
| Not                                                                                                                                                               | 11 (17.7)            | 43 (10.9)            | 3 (5.4)            |        |
| Misleading                                                                                                                                                        | 8 (12.9)             | 19 (4.8)             | 2 (3.6)            |        |
| Never used                                                                                                                                                        | 11 (17.7)            | 203 (51.3)           | 46 (82.1)          |        |
| To what extent do you trust the information provided by AI regarding obesity and related musculoskeletal conditions (e.g., need for surgery, diet, and exercise)? |                      |                      |                    |        |
| Completely                                                                                                                                                        | 12 (19.4)            | 44 (11.1)            | 4 (7.1)            | 0.002  |
| Partially                                                                                                                                                         | 21 (33.9)            | 106 (26.8)           | 5 (8.9)            |        |
| None                                                                                                                                                              | 3 (4.8)              | 12 (3.0)             | 2 (3.6)            |        |
| Not sure                                                                                                                                                          | 26 (41.9)            | 234 (59.1)           | 45 (80.4)          |        |
| Would you be willing to receive exercise recommendations from AI?                                                                                                 |                      |                      |                    |        |
| Yes                                                                                                                                                               | 12 (19.4)            | 28 (7.1)             | 4 (7.1)            | 0.030  |
| Need approval                                                                                                                                                     | 30 (48.4)            | 191 (48.2)           | 24 (42.9)          |        |
| No                                                                                                                                                                | 20 (32.3)            | 177 (44.7)           | 28 (50.0)          |        |
| Would you be willing to receive dietary recommendations from AI?                                                                                                  |                      |                      |                    |        |
| Yes                                                                                                                                                               | 38 (61.3)            | 250 (63.1)           | 39 (69.6)          | 0.531  |
| Need approval                                                                                                                                                     | 16 (25.8)            | 81 (20.5)            | 12 (21.4)          |        |
| No                                                                                                                                                                | 8 (12.9)             | 65 (16.4)            | 5 (8.9)            |        |
| Do you believe that AI could replace physicians in the future?                                                                                                    |                      |                      |                    |        |
| Yes                                                                                                                                                               | 10 (16.1)            | 53 (13.4)            | 9 (16.1)           | 0.314  |
| Physicians will endure                                                                                                                                            | 28 (45.2)            | 204 (51.5)           | 22 (39.3)          |        |
| No                                                                                                                                                                | 10 (16.1)            | 50 (12.6)            | 5 (8.9)            |        |
| Not sure                                                                                                                                                          | 14 (22.6)            | 89 (22.5)            | 20 (35.7)          |        |

n: Number of volunteers. p: Statistical significance value. AI: Artificial Intelligence

## DISCUSSION

In this cross-sectional study, approximately half of the participants reported using AI for health-related purposes at least occasionally. However, uncertainty prevails regarding the reliability of AI-generated health information, indicating that while AI has become a prevalent source of health information, confidence in its outputs remains limited. The participants exhibited a substantially higher level of acceptance of AI-generated nutritional recommendations in comparison to exercise recommendations, for which the majority expressed a preference for approval from a healthcare professional. Furthermore, approximately half of the study's participants expressed the opinion that physicians would continue to play an essential role in healthcare despite the advancements made in the field of AI. These findings are consistent with the results of previous studies, which demonstrated that patients'

**Table 4.** Distribution of responses to the AI-related questionnaire according to level of education

|                                                                                                                                                                   | Below<br>secondary, n (%) | High school<br>n (%) | Under/post-<br>graduate, n (%) | p      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------|--------------------------------|--------|
| Have you previously consulted AI regarding a health-related issue (e.g. obtained health information from an application or an AI-based tool online)?              |                           |                      |                                |        |
| Frequently                                                                                                                                                        | 21 (13.5)                 | 31 (20.0)            | 50 (24.6)                      | <0.001 |
| Occasionally                                                                                                                                                      | 32 (20.5)                 | 44 (28.4)            | 76 (37.4)                      |        |
| Considering                                                                                                                                                       | 24 (15.4)                 | 41 (26.5)            | 38 (18.7)                      |        |
| Never                                                                                                                                                             | 79 (50.6)                 | 39 (25.2)            | 39 (19.2)                      |        |
| Did the information you obtained from AI help you better understand your obesity-related musculoskeletal problems?                                                |                           |                      |                                |        |
| Very                                                                                                                                                              | 9 (5.8)                   | 14 (9.0)             | 29 (14.3)                      | <0.001 |
| Somewhat                                                                                                                                                          | 24 (15.4)                 | 32 (20.6)            | 60 (29.6)                      |        |
| Not                                                                                                                                                               | 8 (5.1)                   | 22 (14.2)            | 27 (13.3)                      |        |
| Misleading                                                                                                                                                        | 12 (7.7)                  | 7 (4.5)              | 10 (4.9)                       |        |
| Never used                                                                                                                                                        | 103 (66.0)                | 80 (51.6)            | 77 (37.9)                      |        |
| To what extent do you trust the information provided by AI regarding obesity and related musculoskeletal conditions (e.g., need for surgery, diet, and exercise)? |                           |                      |                                |        |
| Completely                                                                                                                                                        | 13 (8.3)                  | 15 (9.7)             | 32 (15.8)                      | 0.043  |
| Partially                                                                                                                                                         | 35 (22.4)                 | 37 (23.9)            | 60 (29.6)                      |        |
| None                                                                                                                                                              | 4 (2.6)                   | 4 (2.6)              | 9 (4.4)                        |        |
| Not sure                                                                                                                                                          | 104 (66.7)                | 99 (63.9)            | 102 (50.2)                     |        |
| Would you be willing to receive exercise recommendations from AI?                                                                                                 |                           |                      |                                |        |
| Yes                                                                                                                                                               | 14 (9.0)                  | 10 (6.5)             | 20 (9.9)                       | 0.189  |
| Need approval                                                                                                                                                     | 65 (41.7)                 | 74 (47.7)            | 106 (52.2)                     |        |
| No                                                                                                                                                                | 77 (49.4)                 | 71 (45.8)            | 77 (37.9)                      |        |
| Would you be willing to receive dietary recommendations from AI?                                                                                                  |                           |                      |                                |        |
| Yes                                                                                                                                                               | 99 (63.5)                 | 101 (65.2)           | 127 (62.6)                     | 0.007  |
| Need approval                                                                                                                                                     | 35 (22.4)                 | 41 (26.5)            | 33 (16.3)                      |        |
| No                                                                                                                                                                | 22 (14.1)                 | 13 (8.4)             | 43 (21.2)                      |        |
| Do you believe that AI could replace physicians in the future?                                                                                                    |                           |                      |                                |        |
| Yes                                                                                                                                                               | 21 (13.5)                 | 17 (11.0)            | 34 (16.7)                      | <0.001 |
| Physicians will endure                                                                                                                                            | 66 (42.3)                 | 83 (53.5)            | 105 (51.7)                     |        |
| No                                                                                                                                                                | 13 (8.3)                  | 19 (12.3)            | 33 (16.3)                      |        |
| Not sure                                                                                                                                                          | 56 (35.9)                 | 36 (23.2)            | 31 (15.3)                      |        |
| n: Number of volunteers, p: Statistical significance value. AI: Artificial Intelligence                                                                           |                           |                      |                                |        |

n: Number of volunteers, p: Statistical significance value. AI: Artificial Intelligence

acceptance of AI is conditional and is strongly influenced by trust, transparency, and clinician involvement.<sup>6-10</sup>

The predominance of uncertainty regarding trust in AI (59.3%) and the strong preference for professional oversight of AI-generated exercise recommendations support previous evidence indicating that patients perceive AI primarily as a decision-support tool rather than an autonomous replacement for physicians. Kühne et al.<sup>8</sup> demonstrated that public acceptance of AI decreases as AI autonomy increases and transparency declines, whereas trust is strengthened by human oversight and transparent decision-making. Similarly, several studies have shown that patients view AI as complementary to clinical decision-making and that transparency, ethical considerations, and clinician

involvement are major determinants of acceptance.<sup>6,7,9</sup> The finding that nearly half of the participants in this study believed physicians would continue to play an essential role further supports the perception of AI as an adjunct rather than a replacement for healthcare professionals. In alignment with this perspective, conversational AI systems such as ChatGPT have been proposed as valuable complementary tools for orthopedic patient education, particularly in settings with limited resources.<sup>19</sup>

A salient finding of the present study was the marked difference between acceptance of AI-generated nutritional and exercise recommendations. The study found that approximately two-thirds of the participants were inclined to receive nutritional recommendations directly from AI, while only a small minority accepted exercise recommendations without professional oversight. This discrepancy is likely attributable to the perception that nutritional guidance is relatively general and low risk, whereas exercise prescription necessitates consideration of pain severity, comorbidities, functional capacity, and other patient-specific clinical characteristics. Consequently, the provision of inappropriate recommendations may pose a significant health risk to patients. This assertion is reinforced by contemporary evidence that demonstrates the efficacy of AI-based chatbots and virtual health coaches in promoting healthy eating, physical activity, and weight management behaviors.<sup>3,4,12-14,20</sup> Conversely, the implementation of AI-generated exercise recommendations necessitates meticulous clinical evaluation. Griefahn et al.<sup>15</sup> reported that AI-generated exercise programs rarely posed identifiable safety risks; however, these assessments were performed under the supervision of a physiotherapist. Likewise, Safran and Yıldırım<sup>5</sup> demonstrated that ChatGPT-generated rehabilitation recommendations were generally consistent with evidence-based guidelines but remained limited in terms of consistency, completeness, and clinical reasoning. Conversely, randomized controlled trials have shown that appropriately designed and supervised AI-assisted exercise interventions can improve musculoskeletal outcomes.<sup>16,21</sup> Collectively, these findings suggest that participants' cautious attitudes toward AI-generated exercise recommendations are well aligned with the current evidence, which supports AI as a complementary rather than independent clinical tool. In a similar vein, individuals with obesity have been documented to anticipate personalization and human-like interaction from physical activity chatbots.

The utilization, perceived usefulness of AI, and willingness to receive AI-generated exercise recommendations were found to be significantly associated with both age and educational level. In the present study, participants who were younger and had higher levels of education reported greater use of AI, higher levels of trust, and lower levels of uncertainty. These findings support the concept that digital literacy and disparities in access to digital technologies, otherwise known as the digital divide, play an important role in AI adoption. Cinalioglu et al.<sup>11</sup> reported a greater acceptance of AI among older adults in certain contexts. However, this apparent discrepancy may reflect the distinction between general attitudes toward AI and actual AI use and trust. In the present

cohort, the observed age-related disparities are presumably attributable to variations in digital literacy and familiarity with AI technologies. Kühne et al.<sup>8</sup> also demonstrated that sociodemographic characteristics significantly influence attitudes toward AI. These findings suggest that future AI literacy initiatives and patient education programs should particularly target older adults and individuals with lower educational attainment, while AI applications should be designed to maximize accessibility across diverse patient populations. The decline in uncertainty regarding the replacement of physicians with increasing educational level further suggests that greater knowledge may enable patients to form more definitive opinions about the future role of AI in healthcare.

From a clinical perspective, our findings indicate that patients with obesity-related musculoskeletal disorders are receptive to AI as a source of health information and nutritional guidance but continue to expect clinician oversight, particularly for exercise-related recommendations. AI has considerable potential to deliver scalable patient education and lifestyle support,<sup>3,4</sup> yet its integration into musculoskeletal care should emphasize collaboration with physicians and physiotherapists rather than replacement of clinical expertise.<sup>15,16,21,22</sup> Designing AI systems with transparent decision-making processes and a human-in-the-loop approach is likely to be essential for improving patient trust and facilitating broader adoption.<sup>8,9</sup>

## Limitations

This study has several limitations. First, although this was a multicenter study, all participating hospitals were located within the similar geographic and sociocultural region. Therefore, the findings may not be fully generalizable to populations from other geographic regions with different demographic and sociocultural characteristics. Second, most participants were between 31 and 64 years of age, which may have influenced the observed attitudes toward AI. Third, all data, including BMI and obesity-related musculoskeletal complaints, were based on self-report and are therefore subject to recall and social desirability bias. Fourth, although the questionnaire was specifically developed for this study and underwent pilot testing, it was not subjected to formal psychometric validation. Finally, although the questionnaire was carefully developed based on the literature and pilot tested prior to use, no formal assessment of its validity or reliability was performed. Therefore, the findings should be interpreted with appropriate caution. In addition, the cross-sectional design precludes causal inference, and the wording of the item regarding whether AI could replace physicians may have introduced conceptual overlap between response options, potentially affecting interpretation. Future multicenter studies using formally validated questionnaires and longitudinal designs are warranted to confirm and extend these findings.

## CONCLUSION

Patients attending outpatient clinics demonstrated moderate use of AI for health-related purposes but expressed predominantly cautious and uncertain trust in AI-generated health information. While they were generally receptive to

AI-generated nutritional recommendations, they remained reluctant to accept exercise recommendations without healthcare professional oversight. Age and educational level were significantly associated with AI use, trust, and acceptance. These findings support the integration of AI as a transparent, clinician-supervised tool for patient education and lifestyle support in the management of obesity-related musculoskeletal disorders, particularly among older adults and individuals with lower educational attainment.

## ETHICAL DECLARATIONS

### Ethics Committee Approval

These studies were conducted with the approval of the Ankara Bilkent City Hospital Medical Researches Ethics Committee (Date: 22.04.2026, Decision No: TABED 1/2470/2026).

### Informed Consent

Written informed consent was obtained from all individual participants prior to their inclusion in the study. Participants were fully informed about the study's aims, procedures, potential risks and benefits, and their rights-including the right to withdraw at any time without consequence. All participants voluntarily signed a written informed consent form.

### Peer Review Process

This manuscript was subject to external peer review.

### Conflict of Interest

The authors declare no conflicts of interest related to this study.

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### Author Contributions

Concept: FT, EE, SS, AY; Design: FT, ENG, EE, SS; Control: ENG, SS, AY, ÖD; Data Collection and/or Processing: EE, SS, AY, ÖD; Analysis and/or Interpretation: FT, ENG, EE, ÖD; Literature Review: FT, ENG, SS, AY; Article Writing: FT, ENG, EE, SS, AY; Critical Review: All Authors.

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