Youth Perspectives on Generative Artificial Intelligence and Its Use in Healthcare

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Abstract

Background: Generative artificial intelligence (GAI) has become increasingly prevalent throughout healthcare, with GAI tools being applied to clinical decision support, medical documentation, patient-provider communication, and more. Youth and adolescents are more likely to adopt GAI technologies.

Objective: In this nationwide qualitative survey, we characterize the attitudes of youths aged 14-24 years towards GAI and its related healthcare applications.

Methods: Study participants were respondents of MyVoice, a nationwide text message survey that collects perspectives from youths aged 14-24 years. Five open-ended questions related to GAI were texted to participants. Responses were reviewed, coded, and summarized using descriptive statistics.

Results: Of 758 participants, 624 (82.3%) responded to at least one question. 592 respondents (95.6%) endorsed prior knowledge of GAI, with 62 participants (10.0%) sharing a positive opinion of GAI and 46 participants (7.4%) expressing disapproval. Of the 624 total respondents, 66 respondents (10.6%) mentioned health applications, with 27 (40.9%) citing specific health-related applications and 42 (63.6%) expressing concerns.

Conclusions: Respondents who discussed GAI in the context of healthcare primarily focused on concerns about medical decision making and medical errors, highlighting the importance of transparency and disclosure when using GAI tools to treat adolescents and young adults. Self-diagnosis is not currently a primary focus of youth using GAI tools. Rather, youth more frequently voice concern with safeguarding medical processes against error and ensuring human input is retained in medical decision-making.

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Study Type: Survey Study

Introduction

Generative artificial intelligence (GAI) has become increasingly prevalent throughout healthcare, with GAI tools being applied to clinical decision support, medical documentation, patient-provider communication, and more[1, 2]. GAI is unique in its widespread adoption by the general public, not just among technical professionals[3]. In particular, younger individuals are more likely to adopt GAI technologies[4]. In this nationwide qualitative survey, we characterize the attitudes of youths aged 14-24 years towards GAI technology. We then extract and present potential implications of applying GAI to healthcare for adolescent and young adults.

Methods

Study participants were respondents of MyVoice, a nationwide text message survey that collects perspectives from youths aged 14-24 years. Five open-ended questions related to general GAI use were texted to participants in March 2024 (Appendix) [5, 6]. Using content analysis, two investigators reviewed responses by question, developed a codebook, and independently applied codes. Discrepancies were resolved via discussion. Code frequency and demographic data, including age, sex, ethnicity, zip code, and socioeconomic status (defined as low if respondents ever utilized the Supplemental Nutrition Assistance Program) were summarized using descriptive statistics (Table 1) [5]. Zip codes were aggregated into geographic regions outlined by the American Community Survey [5]. Themes identified in the survey responses, including those specific to healthcare, were coded across all questions and summarized in Table 2. Participants' responses could count towards multiple categories.

Results

Of 758 eligible youth, 624 (82.3%) responded to at least one question. On average, respondents were 20.3 (±2.6) years old (Table 1). A majority (52.6%) identified as female. About half (50.6%) of

respondents were white, 12.2% were black, and 13.6% were Hispanic. 25.7% of respondents experienced low

Table 1: Demographic Characteristics of 624 Youth Respondents in the MyVoice Survey on Generative Artificial Intelligence

Demographic Variable	N (%)
Age (years), mean (STD)	20.3 (2.6)
Gender Identity	
Male	210 (33.7)
Female	328 (52.6)
Transgender	35 (5.6)
Nonbinary/Other	51 (8.2)
Race	
White	361 (57.9)
Black	86 (13.8)
Asian	103 (16.5)
Mixed race	48 (7.7)
Other race	26 (4.2)
Hispanic	
Yes	85 (13.6)
No	539 (86.4)
Highest education level	
Less than high school	123 (19.7)
High school graduate	79 (12.7)
Some college or technical school	236 (37.9)
Associate's or technical degree	41 (6.6)
Bachelor's degree or higher	144 (23.1)
Region	
Midwest	203 (32.6)
Northeast	127 (20.4)
South	164 (26.3)
West	129 (20.7)
SNAP use	
Current	51 (9.0)
Previous	94 (16.7)
Never	419 (74.3)

Abbreviations: SNAP, Supplemental Nutrition Assistance Program; STD, standard deviation

Table 2: Survey Themes, Responses, and Representative Quotations from the MyVoice Survey on Generative Artificial Intelligence

Theme	Responses[a] (%)	Representative Quotes
Current Patterns of GAI Usage		
Boosting efficiency	159 (27)	“Helping to automate tedious tasks”
Academics (school)	95 (16.1)	"Yes, primarily as a research tool for school"
Health-related activities	27 (4.6)	“I've heard of [GAI] being used … to [alert] Healthcare workers to potential outcomes.”
Meal Ideas	9 (33.3)	“Make(s) it easier to find recipes for cooking”
Managing Disabilities	4 (12.1)	“I am disabled, it helps me with tasks such as drafting emails (and where)…it matters how you come across.”
Exercise	3 (11.1)	“Basically a free personal trainer”
Concerns Regarding GAI Usage		
Misinformation	159 (28.8)	“[GAI] can blur the lines between reality and fiction.”
Job security	148 (26.8)	“I am concerned it is going to take jobs.”
Excessive dependence	92 (16.6)	“[GAI] can be a crutch, and make people overdependent on technology. It may also be used to stifle creativity…”
Medical concerns	3 (0.5)	“[GAI] can become dangerous when used in medical situations…”
Circumstances in which GAI should not be used		
School	180 (31.7)	“Writing academic papers or doing school assignments...”
Unethical activities	103 (18.2)	“It should NEVER be used to create images/ videos/… of people without consent”
Supplanting human creativity	115 (20.3)	“AI shouldn't be used for artistic purposes because art is intrinsically rooted in human emotion and experience”
Healthcare (generally)	40 (7.1)	“The thought of [GAI] in the medical field is unsettling”
Complex scenarios in healthcare	5 (0.9)	“Medicine/healthcare - too many components that I wouldn't trust the machine to handle”
Healthcare because of the need for human input	12 (2.1)	“Healthcare industry jobs that require human consideration, life or death care I guess”
Concern for mistakes or biases in healthcare settings	8 (1.4)	“It should not be used to answer serious questions such as legal or medical advice since it can cause fatal errors.”
High-stakes situations in healthcare	5 (0.9)	“It's simple for [GAI] to make a simple mistake that can result in someone's life being on the line.”

Abbreviations: AI, artificial intelligence; GAI, generative artificial intelligence

[a] Survey responses were coded across all themes. A single response could count toward multiple categories

socioeconomic status. 592 respondents (95.6%) endorsed prior knowledge of GAI, with 62 participants (10.0%) sharing a positive opinion of GAI, 46 participants (7.4%) expressing disapproval, and 516 (82.7%) expressing neither. 194 participants (31.3%) found GAI useful.

A majority of participants, 467 (77.2%), endorsed use of GAI as a study aid, writing tool, or efficiency booster (Table 2). Of the 145 respondents (24.0%) who had not used GAI, frequently cited reasons included a lack of need or interest (31.7%), ethical concerns (20.7%), and authenticity concerns surrounding GAI (12.4%). Notably, only 10 respondents (2.1%) expressed explicit dislike of GAI after use.

Across all survey responses, 66 respondents (10.6%) mentioned health applications, with 27 (40.9%) citing specific health-related applications (e.g. creating meal plans, designing exercise regimens, refining medical diagnoses, and improving healthcare systems) and 42 (63.6%) expressing concerns. These concerns primarily focused on the need for human input in medical-decision making [n=12 (30%)] and the importance of avoiding medical errors [n=8 (20%)].

Discussion

Our study found that GAI adoption among American youth (77.2%) is high compared to the general population (39.5%), consistent with previous research [7, 8]. Use of GAI among adolescents and young adults ranged across many fields, including academics, healthcare, and daily efficiency. Despite the widespread GAI adoption among American youth, many remain uncomfortable with GAI use in healthcare settings at a rate similar to that of adult patients [9]. Respondents who discussed GAI in the context of healthcare primarily focused on concerns about medical decision making and medical errors, highlighting the importance of transparency

and disclosure when using GAI tools to treat adolescents and young adults.

Interestingly, the use of GAI platforms to address personal health concerns was not mentioned by participants in this study. This finding suggests that self-diagnosis is not currently a primary focus of youth using GAI tools. Rather, youth more frequently voice concern with safeguarding medical processes against error and ensuring human input is retained in medical decision-making.

In summary, youth remain wary of GAI applications in healthcare despite widespread adoption for other use cases. Healthcare professionals can build trust and rapport with adolescents and young adults by acknowledging and addressing their concerns as the use of GAI becomes more prevalent in healthcare. Further research studying ways to meaningfully apply GAI to youth health is warranted to guide successful implementation of this novel technology.

Author Contributions: Tammy Chang and Marika Waselewski have full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Waselewski, Chang

Acquisition, analysis, or interpretation of data: All authors.

Drafting of the manuscript: Schaaff, Bains, Waselewski, Chang, Wong.

Critical review of the manuscript for important intellectual content: Waselewski, Chang, Wong.

Administrative, technical, or material support: All authors.

Supervision: Waselewski, Chang, Wong.

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Use of Generative AI Statement: No generative artificial intelligence algorithm was employed in the preparation of this manuscript.

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Supplementary Files

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Multimedia Appendixes

Supplemental Table: Probing Survey Questions with Corresponding Response Rate from the MyVoice Survey on Generative Artificial Intelligence.
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