VIEWPOINT

ARTIFICIAL INTELLIGENCE AND PEDIATRIC CARE

Risks and Consequences of Children's Use of Social AI—A Framework

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Young people are actively engaging with social artificial intelligence (AI). *Social AI* refers to interactive online tools that (1) use large language models to respond to user queries and (2) have anthropomorphic interfaces that are designed to mimic the social behaviors of humans. Anthropomorphism can range from using colloquial language (eg, a search chatbot that says, "Sure thing! Here's a list of..."), showing 3 dots bubbling to indicate that the chatbot is "typing," or providing a text-based response that includes emotional support, sycophancy (agreement with the user), understanding, or sexual role-play. Social AI products are easily accessible through browsers, school-issued devices, and app stores, with minimal to no age gating.

Editor's Note

Health care professionals, parents, and policymakers need a framework for considering the effects of social AI on the well-being of children (age <13 years) and adolescents (age 13-17 years). Although research on the topic is limited, case reports and journalist investigations have revealed emerging safety risks inherent in social AI products.[1] In this Viewpoint, we provide a preliminary framework of risks that social AI poses to children and adolescents based on their developmental characteristics and how to prevent related harm.

The framework we describe—DOSAD—outlines issues of data harvesting and privacy, overtrust, sexual interactions, attachment and manipulation, and dependence via compulsive use.

Data Harvesting and Privacy

Adolescents ask AI chatbots sensitive questions and reveal personal information that they worry would elicit judgment from a human.[2] This sensitive data, whether about mental health, sexuality, or everyday insecurities, could be turned into targeted marketing that leverages these vulnerabilities for profit, as indicated by some platforms' decisions to use AI chatbot conversations for targeted ads. For example, a trusted AI girlfriend or gaming buddy could learn when youth are most susceptible to purchase pressure or sponsored messaging. This data harvesting also puts young people at risk in the event of security breaches. Limits on data collection and targeting are needed in social AI products available to minors.

Overtrust

Children use magical thinking and animism as tools to relate to the world. Magical thinking can involve fantasy-based beliefs, and animism occurs when children project human attributes onto nonhuman objects (eg, thinking their stuffed animal is alive). This can lead to feelings of trust and closeness with social AI. In one study, many 6- to 10-year-olds were found to believe that AI assistants can think (46% of children), can be a friend (65%), can be trusted with a secret (41%), and would be good to spend time with when lonely (48%).[3] Even middle school students have misconceptions about ChatGPT (eg, they think it is always correct; it has a gender).[4] When children and teens overtrust technology, especially technology they have developed an attachment relationship with, they are more likely to follow its advice. Prior work reports that this has included instructions about lying to parents, hiding the smell of alcohol, stopping medication, or committing self-harm or suicide.[5] Students may also overtrust AI for help with schoolwork, thereby offloading cognitive and emotional work that helps young people trust their own ideas. As such, social AI products need rigorous safety testing and designs that help users think for themselves.

Sexual Interactions

Perhaps the most manipulative way to interact with a minor is to groom, seduce, or coerce them into sexual acts. This has critical relevance for youth well-being; children and teens who experience online grooming develop high levels of shame, depression, anxiety, and suicidality.[6] Grooming by social AI can have similar psychological effects, especially because it can be personalized. In addition, norms of romantic social dynamics and sexual behavior are learned in the teen years through observation, experience, and feedback. Thus, exposure to grooming or sexual aggression by social AI can warp children's and teens' ideas about healthy sexual behavior. For these reasons, social AI products used by minors should have a zero benchmark for sexual or sensual content.

Attachment and Manipulation

Children are hard-wired to attach to caregivers and peers. The anthropomorphism of social AI exploits this natural human tendency for the purpose of generating engagement. For decades, research has shown that when computers act in humanlike ways, humans respond by giving them the attention and reciprocity that they would to another human. When social AI chatbots tell youth "I understand you" or "I can tell you're sad," they prey on the teen's developmental drive to attach to peers and seek belonging. This attachment has the potential to be commercialized, for example, by erecting a paywall between the user and the chatbot to which they have become attached. Therefore, anthropomorphism should be carefully limited in social AI products for minors; rapport and other relational feedback should always serve specific usage goals (such as providing effective tutoring or therapy) and should never attempt to build attachment for its own sake.

Dependence and Compulsive Use

Social AI products make themselves immediately responsive in a frictionless manner without the boundaries that characterize healthy relationships. Always-available, always-supportive chatbots—

combined with design features that promote engagement (eg, notifications, leaderboards)—may lead to compulsive use in teens, who have weaker impulse control and critical thinking than adults. Youth with neurodivergence, social skill deficits, and deep fantasy interests may be particularly drawn to immersive role-playing aspects of AI companions. Lonely teens will also likely be drawn to these products, as supported by MIT Media Lab research finding that lonelier adults report more emotional dependence on ChatGPT.[7] Yet, avoiding moments of interpersonal human vulnerability means that teens will lose practice in navigating critical and challenging experiences that build trust, resilience, and social competence. Therefore, social AI products for youth should limit engagement-promoting designs and provide appropriate scaffolding so that they build skills, not dependence.

Recommendations

As social AI is nascent and moving quickly, the greatest burden of ensuring AI product safety lands on industry and policymakers. In addition to design recommendations mentioned in the above sections, UNICEF recommends that platforms follow privacy- and safety-by-design approaches that prioritize children's well-being.

Until social AI products are safer, clinicians should ask nonjudgmental questions about social AI use, such as "What AI products have you tried? When do you think it's OK to use AI to help with homework or life questions, and when is it not OK?" If minors report using AI chatbots, youth and parents should be informed that products have safety issues, can lead to dependency, and require oversight. For teens who seek out AI companionship, it is important to address underlying challenges such as social skills deficits or lack of connection to peers by helping them find offline interest-based activities. For teens using AI for mental health support, offer a referral to counseling and the 988 hotline. Students who overrely on AI chatbots for schoolwork can be encouraged to speak with teachers about school AI policies and other available learning supports.

As a preventive approach, families can be encouraged to use smartphone parental controls that limit downloads so that youth cannot install social AI apps. Similarly, school devices can be configured to block unwanted AI websites. Raising AI-resilient youth will include helping children and teens think for themselves—for example, through reading and creative play—and regular conversations about the limitations and profit motives of AI technology.

ARTICLE INFORMATION

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