



Guest Editorial

Artificial Intelligence in psychiatry

Shabbir Amanullah¹

¹Division of Geriatric Psychiatry, Queen's University, Kingston, Ontario, Canada.



***Corresponding author:**

Shabbir Amanullah,
Division of Geriatric Psychiatry,
Queen's University, Kingston,
Ontario, Canada.

shabbir.amanullah@queensu.ca

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Artificial Intelligence (AI) has taken the world by storm, and like the impact of the internet we saw in the 1990s, it is reshaping the world we live in dramatically. Commonly defined as the ability of computers to perform tasks that are commonly associated with human beings, the definition assumes AI's ability to "learn" and generate answers.

However, while there are some similarities in the learning process, there are many more differences, and some of these are key in its impact on Psychiatry as a field. It is indeed a complex area that covers cognition, executive functioning, and judgment, amongst others, but with emotional health being a major component.

Emotions cover everything from joy and happiness to misery and sadness and the many different hues in between. How does one tease out the subtle differences between sadness with intact reactivity and sadness with loss of reactivity? Or hostility with little emotional expression and hostility with sarcasm? Are there biological correlates for each of these emotional states, or are they just "normal" expressions of the human mind? We know well how passing an examination gives us joy while failure provides us with a sense of sadness and despondence. There are emotional states that can be very subtle and are not often elicited in routine clinical examinations due to time constraints or cultural factors.

A recent study on the use of ChatGPT with a team in Chennai was very revealing about the power of AI in coming to an accurate diagnosis in psychiatry based on DSM, but it was not as impressive in areas that required "complex" learning based on emotional needs when looking at recommendations.^[1]

As with all technologies, one needs to keep in mind its rapid evolution, and given its ability to learn, the growth will likely be exponential. Whether it will serve to replace individuals who work in the field by becoming easily available or being non-judgmental, less expensive, easily accessible with a smartphone, and with no risk of countertransference is something we can only wait and see, but also it's an area we need to study actively. What will be fascinating is to see if machine learning results in AI developing counter transference in the course of its 'learning' from humans.

However, this growth in technology will need safeguards in place to protect it from being misused. As with the internet and the predatory behavior we have seen online, AI can both be a boon and a problem. Internet and telephone scams have become the bane of many countries, along with identity theft. Voice recognition software can easily be used to impersonate people but can also be used in grief work and therapy.

AI creates a platform, on the other hand, unlike any we have seen before and can be used to target the vulnerable, as we saw in the 'blue whale challenge'. We need to recognize that the

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elderly can be targeted via sophisticated, deep, fake videos, voice reproductions, and fake receipts, invoices, or requests from messages left on their phones. In the elderly, cognitive decline makes them especially vulnerable. While financial abuse can become more prevalent, AI can also be used to identify if the source may be fake or, indeed, if the received text/email/ invoice is fake. This will require law enforcement to be empowered to recognize, develop, and enforce laws that need enactment to protect the elderly. The same goes for children and those who target them. Child and adolescent mental health practitioners will need to be ahead of the curve to prevent children from falling prey by educating parents, youth, and peers alike. The more technology advances, we find the prevalence of loneliness increases. In the West, there are now ministers of loneliness as we see in the UK. As to whether the absence of meaningful relationships is what results in the shift to 'befriend' chatbots or AI needs to be studied.^[2-4]

How man will cope with stress in the coming years and whether AI will become the next 'man's best friend' is something we will need to wait and see. During COVID, buying pets to combat loneliness was common. Yet, post-pandemic, many pets were abandoned, and more recently, with the rising price of food and cost of living, animal shelters are struggling to handle the increasing numbers.^[5] Does this mean we will see more people adopting AI as a cheaper, more accessible, and less challenging "companion?"

Current trends show that India, the UK, Brazil, Germany, and the US are the highest users of chatbots. The data raises many interesting questions, including questions about what drives its use in these countries. While there are significant cultural differences between India and the West, it is challenging to understand how a culture like India's that lays great emphasis on social interaction would lead to a need for chatbots. In the West, where there is a lot of importance given to privacy, 'self', and being independent, it is possible that this 'social isolation' can lead to loneliness or at least an increased sense of it. Its impact on advertising efficiency was highlighted recently, but it is clear that AI is here to stay, and its impact on the world, from claims of "unique" cures to false promotions of the benefits of certain therapies, will be profound.^[6] Learning how to use it for the common benefit of mankind will require legislation to contain its misuse and protect the vulnerable.

In the realm of biological psychiatry, we are already seeing significant developments in imaging technology and the use of AI in interpreting scans, etc. However, drug trials, which used to cost 100's of millions of dollars, will now be done at a fraction of the cost with much faster patient recruitment, data transfer, and data interpretation while addressing varied patient populations to make trials more reflective of the

real-world. AI will likely be able to generate patient models that could potentially be trial subjects rather than exposing humans to emergent treatments that may be dangerous. Patient education on medication side effects will play a beneficial role, and AI will play an important role in patient education around illness and treatment options while helping physicians with their learning needs by generating simulation models around illness and newer interventions for complex cases. This will help with meeting the requirements of local regulatory bodies.

While predicting forensic risk has always been a challenge, AI could help, but it runs the risk of having more people incarcerated by way of the algorithms used. We need to be at the forefront of studying its role and possible and potential impact on an inaccurate interpretation of possible risk by AI. It can be a support in decision-making, but it will require human intelligence with kindness and compassion that allows for its safe and appropriate use.

In conclusion, the benefits and risks of AI will be one of humanity's greatest scientific journeys. Advancements we have seen take place over decades will likely happen over months and years. While predicting the future and limiting its potential to what is mentioned above is reductionist, attempting to do so and being prepared for the potential impact and possible eventualities are critically important in integrating its use safely in psychiatry.

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