Implementation Issues AI - Mental Healthcare

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Issues in the implementation of AI in mental healthcare practice

- Big data confidentiality (Aafjes-van Doorn et al., 2021)
- Black box problems Chekroud et al. (2021)
- In addition, black-box predictive models combined with (similarly complex) explanatory methods may yield complicated decision pathways that increase the likelihood of human error (Chekroud et al., 2021)
- ethical challenges:
  - responsibility (Chekroud et al., 2021)
  - dehuminization (Chekroud et al., 2021)
  - in clinical settings: transparency highly values - opposing black box problem (Chekroud et al., 2021)
  - erronous outcomes for underrepresented groups (Chekroud et al., 2021)
  - misuse of personal and sensitive data (Chekroud et al., 2021)

Issues in intervention studies

- few studies test algorithms in independent samples Chekroud et al. (2021)
- when randomizing patients to algorithm-informed care or usual care, clinicians may override algorithm recommendations and choose alternative treatments (Chekroud et al., 2021)
- Patients may refuse the algorithm-recommended treatment, or have restrictions to its use that were not contemplated by the decision support tool (e.g., prohibitive cost of therapy) (Chekroud et al., 2021)
- In light of this, effect sizes for these interventions will often vary when applied in different settings (Chekroud et al., 2021)
- the development of data-driven decision tools should be informed by extensive consultation and coproduction with the intended users, in order to implement models that maximize acceptability and compatibility with other clinical guidelines (i.e., risk

management procedures, norms about safe dosage or titration of medications) (Chekroud et al., 2021)

- fear of being substituted by AI systems?

Ways out and forward

- Thus, it will be important for psychotherapy researchers to become better-versed in the ML methods and how to interpret this research literature (Chekroud et al., 2021)
- Accessible ML education and tool development is required to facilitate understanding and usage in the wider clinical research community. Besides formal education on ML in psychology graduate programs, it might also be helpful for psychotherapy researchers to attend (online and freely available) courses on ML (Chekroud et al., 2021)
- When conducted with care for ethical considerations, ML research can become an essential complement to traditional psychotherapy research (Chekroud et al., 2021)
- highlight AI as a chance and addition to commoon practice (supporting, not substituting):
  - It is important to highlight that none of the identified ML applications were developed to replace the therapist, but instead were designed to advance the therapists' skills and treatment outcome (Chekroud et al., 2021)
  - ML methods provide an opportunity for multimodal analyses of patient and therapist moment-bymoment changes in word use, speech, body movements, and physiological states, that are not (yet) usually considered in clinical decision making (Chekroud et al., 2021)

References

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