Title: Using AI and Assistive Technologies to Advance Personalised Care in Learning Disability Nursing

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Abstract:

The accelerating integration of digital technologies into healthcare presents both significant opportunities and complex challenges for nursing practice, particularly in addressing the needs of people with learning disabilities. This presentation provides a structured and critical overview of Artificial Intelligence (AI) and Assistive Technology (AT), conceptualising them as complementary approaches that can enhance communication, support decision-making, promote independence, and improve patient safety. AI are systems that utilise data to identify patterns, generate insights, and support clinical decision-making (Topol, 2019; WHO, 2021), while Assistive Technology encompasses devices, applications, and digital tools that enable individuals to communicate, learn, and live more independently (Cook and Polgar, 2025; WHO, 2022). Within this framework, the presentation examines the relevance of these technologies in reducing communication barriers, enhancing comprehension, promoting autonomy, and addressing persistent health inequalities experienced by people with learning disabilities. Drawing on contemporary policy and research, the presentation explores key challenges affecting this population, including communication difficulties, reduced capacity to process complex information, barriers to navigating healthcare systems, and risks of digital exclusion (NHS England, 2024; National Institute for Health and Care Research [NIHR] School for Social Care Research, 2025–2027). Practice-based examples are used to illustrate how AI-enabled solutions such as automated simplification of clinical information, predictive analytics, and digital triage tools, alongside assistive technologies including speech-generating devices, wearable health monitors, and smart home systems, can mitigate these challenges and improve access to care (Umucu, 2025). Central to this discussion is the principle of co-production, ensuring that technological solutions are person-centred, meaningful, and aligned with individual preferences and needs. The implications for nursing practice are considered in relation to enhanced communication, improved assessment and monitoring, and the implementation of reasonable adjustments that support inclusive, person-centred care. Ethical and safeguarding considerations are critically examined, including issues of informed consent, capacity, data privacy, and the potential risks of over reliance on technology at the expense of therapeutic relationships (Alan Turing Institute, 2024; Giansanti & Pirrera, 2025). In conclusion, the presentation highlights the necessity of

strengthening digital literacy among nurses, addressing barriers to equitable access, and fostering collaborative working with families and multidisciplinary teams. By equipping nurses with the knowledge, skills, and critical awareness required to evaluate and implement AI and assistive technologies appropriately, this work contributes to the development of inclusive, responsive, and future ready healthcare systems.

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