The disruptive power of Artificial Intelligence. Ethical aspects of gerontechnology in elderly care

The main points of the paper:

➢ Gerontechnology based on Artificial Intelligence (AI) will transform structures and practices of elderly care substantially.
➢ Explaining P4 medicine; preventive, predictive, personalized and participatory.
➢ Discussion and recommendations: how to avoid the 4d-elderly care.
➢ Human–computer interaction (HCI) increase quality of life of end users, and enable them to lead an active, healthy, and independent life.
➢ Big Data-applications could be used for predictive analysis of disease progression and health risks.
➢ The permanent collection and use of large data sets could lead to a loss of control over one's own data and open the door to data misuse.

The benefits of AI elderly care: towards actualizing the 4p-ideal:

➢ The predictive aspect of AI-based systems is fall detection.
➢ The personalized aspect of the technology is to collect and process data from the context of everyday living and combine it with scientific data.
➢ The preventive aspect measures can be taken for example a dementia patient, the system may detect unusual sleep patterns signifying bad sleep, unusual activity and movement patterns, or an unusual use of gas or water.
➢ The participatory aspect of the technology lies in the fact that with many applications and systems. Patients can take their own blood pressure or blood sugar level, read out data from wearable sensors, physicians through various channels.

The risks of AI in elderly care: the 4ds:

➢ Depersonalizing effect of technology that negatively affects the nursing relationship. The increased use of technology in nursing with its focus on the patient as body may undermine the holistic approach to nursing practice and limit the ability of nurses to integrate the patient's individual experience of illness into the clinical process.
➢ The application of AI and Big Data analytics in elderly care also implies the use of social information and may thus lead to the discrepancy between virtual social identity and actual social identity as described by Goffman.

- Dehumanization, defined as the estrangement of human beings from their practices and from each other as well as the loss of human interaction, is a concept used in various philosophical and sociological theories of technology use.
- Disciplination is a risk of AI in elderly care, since monitoring and surveillance are crucial aspects of care at home facilitated by AI-based gerontechnology. Bed sensors, wearable sensors for vital functions, floor sensors, and sensors for measuring the use of electricity.