Ethical Debate – Pro Side

Wearable health trackers make the collection of data very easy, and convenient. Relevant health data needed for the digital twinning system can be taken whenever and wherever. Wearable health trackers can save a lot of time as it is mentioned in the article by Lisa Bove for The Journal for Nurse Practitioners that “patients do not have to travel to centers to meet with experts but instead can transmit their data” (Bove). Wearable health trackers make it easy to collect data over a large period. Taking the example of an apple watch, it can be worn throughout the day therefore relevant health data like heart rate can be monitored and recorded continuously, which ensures that data is up to date. With data being constantly updated it “can help nurse practitioners diagnose issues more quickly and intervene sooner to prevent readmissions or negative sequelae” (Bove).

Pro-A health tracking device is a way to take all your data and put it together to form a meaningful picture of your overall lifestyle. In order for the health tracking device to determine all of your data, it needs to access it first, and that’s where data accessibility comes into play. One reason to why data accessibility is so beneficial when it comes to health tracking is because it allows people to know more about their health status. For example “In the healthcare field, patients’ data are being increasingly stored in electronic health records. In response to patients’ request to access their data, large hospitals have begun to provide patients with direct access to their data through personal health records” (Kim). Collecting self-tracking data is also used outside of hospitals for everyday life purposes. A very common use of this would be an Apple Watch, which is constantly tracking your bodies data. This allows “to help people collect, manage, and share their health and fitness data” (Kim). As technology keeps on advancing, more and more technology/applications are involving data accessibility. In the article “Investigating data accessibility of personal health apps” author Yoojung Kim did research on 45 different apps to see if they implemented data accessibility and the results were that “More than 90% of our sample apps (n = 41) provide some types of data access support, which include synchronizing data with a health platform (ie, Apple Health), file download, and application program interfaces”. This data is conveying that a benefit of data accessibility in health tracking is the common use of it in new technology.

# For digital twins, the Quantity of data is very important. Digital twin approaches in healthcare have the potential to increase the recognition rate of disease. Only by collecting enough data to form big data the accuracy of the digital twin can be improved, which will directly affect whether the digital twin can play a role in the healthcare system. In *Digital Twins in Health Care: Ethical Implications of an Emerging* mentioned that "Personal Digital Twins are an asymptotically data-intense scenario that clarifies the importance of governance concerning the production and use of personal biological and lifestyle data." (Bruynseels K, Santoni de Sio F, van den Hoven J., 2018). At the same time, comparing data from different populations can provide a clearer picture of health and disease, digital twins perfected by vast amounts of data have the potential to be used in healing. So quantity of data is very important for Digital twin, a large amount of data can help Digital twin improve recognition rate, accuracy, and after that use in healing.

Medical monitoring devices innovation is progressing rapidly, driven by advances in sensors, semiconductors, electrocardiograms and oscillometric blood pressure sensors. These gadgets can even transmit a user's health data in real time to a doctor or other medical professional. According to research from the Augusta University Medical Center, the use of this wearable device resulted in an 89% decrease in the number of patients who went into avoidable cardiac or respiratory arrest. This highlights how wearable technology might enhance patient outcomes and perhaps lighten staff workloads. (Phaneuf, 2022) In the coming years, the demand for wearables is expected to increase as more consumers express interest in sharing their wearable data with their service providers and insurers. There's no denying that when it comes to consumer wearables for healthcare, a fun, easy-to-use interface is a crucial factor to take into account. The market for wearable healthcare technology is expanding, and as it matures, more wearable technology will be available to US consumers and companies. Through 2022, the number of patients using health care apps will rise to 84 million, according to Insider Intelligence study. (Phaneuf, 2022)

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