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CAN WEARABLE TECHNOLOGY BE USED TO TRACK PATIENT BEHAVIOUR AND PROVIDE INSIGHTS TOGETHER WITH PATIENT REPORTED OUTCOMES?

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Introduction / Objectives:

Wearable technology applications in health care have been designed for prevention of disease and maintenance of health and can directly impact clinical decision making (1).

The aim of this pilot study was to test to if wearables could track physiological data and to assess the willingness of patients to participate in the use of smart technology (combination of an iPhone 2020 SE, AppleTM Watch 6.0, PolarTM H10 chest strap plus bespoke app) to collect clinical data in women who perform clean intermittent self-catheterisation.

Methods:

The physiological data stored in the AppleTM Health Kit (heart rate, heart rate variability (HRV), blood oxygen) was collected with a special interest in the HRV measurement as a potential marker of anxiety when self-catheterising routinely compared to when they are switched onto a new product.

The data collected throughout the pilot study included self-reported:

- Fluid intake diary
- Anxiety
- Reason for catheterisation
- Discomfort on insertion and removal of catheters
- Exercise

The watch collected sound files for potential correlation with urine volume.

Results:

11 women completed the 6-week pilot. Data was successfully collected. For example, the reasons “Normal desire to empty,” “Routine Catheterisation” and “Urgency” were chosen 150, 100 and 137 times, respectively - out of 405 instances for this variable. Discomfort on insertion and removal of catheters was collected in 392 instances. HRV and other HealthKit data was successfully collected.

Adherence is key to successful self-catheterisation outcomes. Participants exhibited a high interest in successfully using the wearables indicting wearables may be used to track adherence.

Conclusions:

This pilot provided insights into wearables for data collection. There were challenges of data loss and creating more visibility during the trial with respect to data collection and data monitoring. For future studies, an emphasis placed on simplification for patients is recommended.

Reference:

1. Wu, M. and Luo, J., 2019. Wearable technology applications in healthcare: a literature review. Online J. Nurs. Inform, 23(3).