MOMO IS WATCHING YOU - A SPECIALIZED SYSTEM FOR PATIENT MONITORING IN A HOSPITAL

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MONTREAL
ICN CONGRESS
1-5 JULY 2023
Nurses together: a force for global health

Patients in geriatric wards often experience limited mobility due to their underlying diseases and therapeutic interventions. Consequently, they face an elevated risk of falls or the development of pressure ulcers. While standard care protocols aim to address these risks, individual cases may still suffer from either excessive or inadequate attention [1].

To address this issue, the Center of Implementing Nursing Care Innovations Freiburg Germany implemented the Mobility Monitor (MoMo) sensor system. This system records and visualizes patients' movements while in bed, providing real-time information to nurses regarding the frequency of movements and occurrences of bed exits. By monitoring these parameters, the nursing staff can promptly intervene if a patient remains immobile in an unsupportive position for a predefined duration or if an actual or imminent bed exit is detected. The study presented here primarily focuses on exploring the advantages and challenges associated with utilizing bed exit information.

There is no clear definition of the nursing benefit or the benefit of using technological innovations for nurses and patients. User value is not only generated based on positive outcomes related to the goals of an intervention.

It arises through intricate interplay of potentials and potential risks (barriers) within various domains, such as the technological, organizational and individual [2].

The research project was designed as a monocentric exploratory evaluation study with a mixed-methods approach, conducted on a geriatric ward at the University Medical Center Freiburg. The study duration spanned 24 weeks and was divided into two data collection phases. One of the applied methods was a group discussion, which was conducted at the beginning of the use and at the end in each case to explore the study's target criteria. The analysis of the group discussions employed a structuring content analysis [3] and, selectively, the documentary method [4] to capture dynamics within the discussions.

The results suggest that the implementation of a symptom-oriented utilization algorithm could be a potential strategy to better respond to the heterogeneity within the group of patients. The development of routines, not only among nursing staff but also other professional groups, and technological improvements such as adjustable day and night modes, as well as ubiquitous access to detailed notifications (e.g., via mobile devices), could enhance the added value of the EPS from the perspective of the nurses and contribute to long-term utilization.

2 focus group discussions with N=6 participants

Potentials

Technology:
- High reliability in detecting micro and meso movements.
- High reliability in detecting bed exits and immobility.
- High usability.

Adopters:
- Sense of security.
- Personalization of pressure ulcer prevention.
- Fall prevention.
- The perspective of care takes priority, with economic considerations being secondary.

Organisation:
- It was a helpful addition for approximately half of the patients.
- During the night: targeted positioning, better medication adjustment, which interestingly seems to provide the most significant benefit.
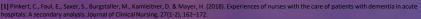
Barriers

Technology:
- Individual repositioning by caregivers was not detected.
- Some false alarms regarding bed edge information.
- Requires a certain amount of training/practice.
- No option to run the software on mobile devices.

Adopters:
- Partial alarm fatigue (in case of the wrong target group and during daytime - especially in the beginning due to lack of training, later often triggered by other professional groups).
- Individual customization of alarms is only partially implemented, with the initial settings mostly being retained.

Organisation:
- High cost of the systems.
- Difficult to measure effectiveness and relevance.
- Coordination with the transportation service and other professional groups.
- No integration with the documentation system.

" […] And what I find great about the device is that you don't have to wake people unnecessarily to reposition them. This way, they can sleep through if you see that they are moving sufficiently."

"The problem lies specifically with one professional group, the physiotherapists. They are working on three other wards where these devices are not available, and then we have two patients down here, and they simply don't think about it. Either they need much more time, or we need many more of these devices everywhere."

"When it comes to falls, there is a certain level of security because the notification always comes through, and you don't have to constantly maintain eye contact or regularly go into the room. There is definitely a feeling of security that lets you know, 'Okay, the patient is currently not at risk in terms of falls or similar incidents.'"

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