Using a Bed Sensor Array to Monitor Sleep
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ABSTRACT

Introduction

Fall is a major cause of injury and death among older adults and can also lead to increased emotional distress. Home-based monitoring using an array of sensors has been shown to detect early signs of falls more accurately than traditional methods, suggesting a potential for better management of this risk. This paper proposes a method for monitoring sleep quality and exploring the link between sleep quality and the risk of falls using a bed sensor array.

Methods

Participants: A total of 60 participants, aged 65 and over, were recruited for the study. The participants were divided into two groups: a control group and a treatment group. The control group received standard care, while the treatment group received additional sleep monitoring through the use of the bed sensor array.

Data Collection: The bed sensor array was placed under the participants' beds, capturing data on sleep patterns, including sleep latency, sleep duration, and sleep efficiency. The data was collected for a period of one week. The data was then transferred to a computer for analysis.

Results

The results showed a significant difference in sleep quality between the two groups. Participants in the treatment group had a lower average sleep latency and higher sleep efficiency compared to the control group. The data also showed a lower risk of falls among participants in the treatment group during the study period.

Conclusion

The study demonstrates the potential of using bed sensor arrays for monitoring sleep quality and predicting the risk of falls. Further research is needed to validate these findings and to explore the potential of using such technology in real-world settings.

INTRODUCTION

- Falls are a major cause of injury and death among older adults.
- Sleep quality is a significant factor in the risk of falls.
- Home-based monitoring using a bed sensor array can detect early signs of falls.

REFERENCES


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