Empowering Informal Caregivers with the RemindMe App for Pressure Injury Prevention: A Pilot study

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Background

Pressure injuries (PIs), also known as pressure ulcers or bedsores, are a significant concern in healthcare, particularly among individuals with limited mobility.[1] Repositioning is a key intervention for preventing PI by relieving pressure on high-risk sites and maintaining tissue perfusion. Maintaining frequent repositioning remains a challenge both in the acute care and community care setting. Some of the commonly reported reasons include high caregiver workload, lack of PI knowledge, and forgetfulness. [2,3]

Aim

To evaluate the usability of *RemindMe*, a tablet-based application designed to assist informal caregivers in repositioning patients with or at-risk of pressure injuries during hospitalisation.

Methods

A cross-sectional study was conducted in an acute tertiary hospital. Informal caregivers, including family members or foreign domestic helpers of patients with limited mobility, were recruited. Caregivers received a tablet equipped with the *RemindMe* application, which provided 2-hourly repositioning reminders from 8:00 AM to 8:00 PM for up to 4 days. The app featured an audible alarm to signal repositioning times and a pictorial guide highlighting high-risk pressure areas. Utilization information was collected from the app's log report. Caregivers' feedback on the app's usefulness and ease of use on a Likert scale, and suggestions for improvements were gathered via an open-ended survey and analyzed using content analysis.

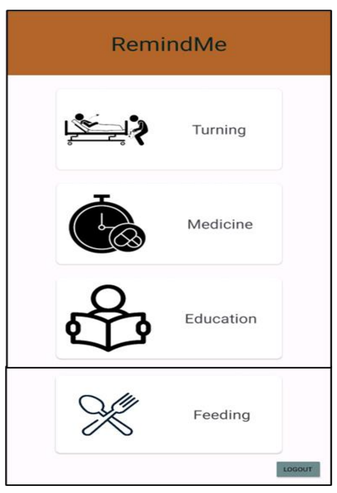


Figure 1: Landing page of the *RemindMe* app

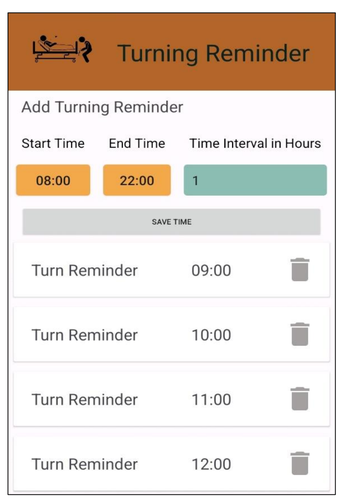


Figure 2: Setting the frequency of repositioning

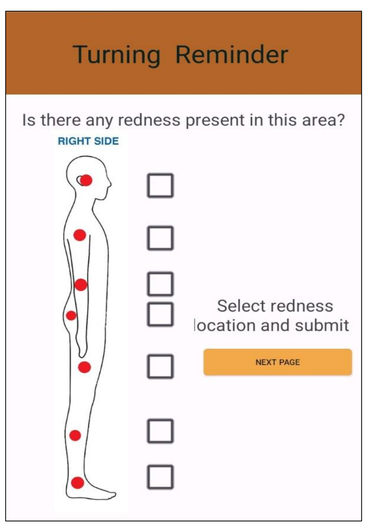


Figure 3: App features a pictorial guide for caregivers to check and indicate for any redness when alarm rings



Figure 4: Education Tab information on Pressure Injuries

Results

A total of 40 informal caregivers were recruited, with one dropout. Of the 39 remaining, 37 (93%) were foreign domestic helpers. The mean age was 38 years (SD = 9.3). The app utilization rate was 16.7% to 61.1%. Twelve caregivers (30%) found the RemindMe app extremely useful, and 14 (35%) found it easy to use. All caregivers found the pictorial guide clear and easy to follow. Suggestions included adding educational content on bed exercises, oral suctioning, tracheostomy, and catheter care. Two caregivers recommended a larger screen and multilingual support.

Results

Variables	Caregiver (n=40)	Patient (n=40)
Mean Age (SD) Min, Max	37.7 (9.3) 25.69	80.8 (12.5) 55, 104
Female (%)	39 (97.5)	27 (67.5)
Relationship to Patient (%) FDH Spouse	 37 (92.5) 3 (7.5)	
Nationality (%) Singaporean Indonesian India Filipino Burmese	 3 (7.5) 24 (60.0) 2 (5.0) 3 (7.5) 8 (20.0)	
Has Pressure Injuries (%) Yes No	 	 21 (52.5) 19 (47.5)
Ease of use (%) Extremely not easy Not easy Easy Very easy Extremely easy	 1 (2.6) 0 (0) 3 (23.1) 4 (41.0) 5 (35.9)	
Usefulness of the app (%) Extremely not useful Not useful Useful Very useful Extremely useful	 0 (0) 0 (0) 3 (23.1) 4 (48.8) 5 (30.8)	

Table 1: Basic Demographic and Caregiver's Feedback on the *RemindMe* Application

Number of days used[a]	Total*
1 day	9
2 days	23
3 days	5
4 days	2

Utilisation of the App	Total	Min, Max
Total number of opportunities[b]	492	2, 24
Total number of times used[c]	305	1, 33
Utilisation rate (%)	61.1%	

Table 2: Utilisation Data of the *RemindMe* App (n=39)
Footnote:
a= no. of days caregiver using the *RemindMe* app
b= no. of opportunities available to use the *RemindMe* app
c= no. of times caregiver used the app during hospitalisation
*= total no. of caregivers

Discussion

This study highlighted the potential of leveraging technology to empower caregivers in actively participating in PI prevention during hospitalization. The app demonstrated reasonable levels of use and usability among caregivers, with most reporting it as effective in supporting repositioning reminders and guiding them in monitoring early signs of PIs. The utilization rate of the RemindMe app in this study (16.7% to 61.1%) was comparable to similar mobile interventions with reminder alerts.[4] systematic review on the adherence to mHealth apps for prevention or management of noncommunicable diseases reported an average adherence rate of 56% (SD = 24).[5] Therefore, consistent with prior findings, the present results suggest that adherence remains a persistent challenge. This underscores the importance of identifying barriers to engagement and exploring strategies that go beyond simple reminders, such as tailored education or real-time support, to improve adherence.

Conclusion

The *RemindMe* app was well-received by caregivers, who found it useful and easy to use. Enhancements such as educational content, multilingual support, and larger screens may improve usability and engagement.

References

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