Chronological Impact of Social Determinants of Health Affecting Patient Adherence to Chronic Wound Follow-Up After Discharge

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Introduction

Chronic wounds remain overlooked as a pathology associated with highly prevalent comorbidities, affecting 4.5 to 6 million people in the United States alone. Standardized, multi-disciplinary treatment protocols have been established as the gold standard for wound care, however, care reception by patients falls short. Identifying social determinants of health and clinical factors influencing patient follow-up adherence may shorten the gap between trial-reported versus real-world healing outcomes.

Objective: To identify the impact and timing of social determinants of health and clinical factors on the patient decision process for wound care follow-up adherence.

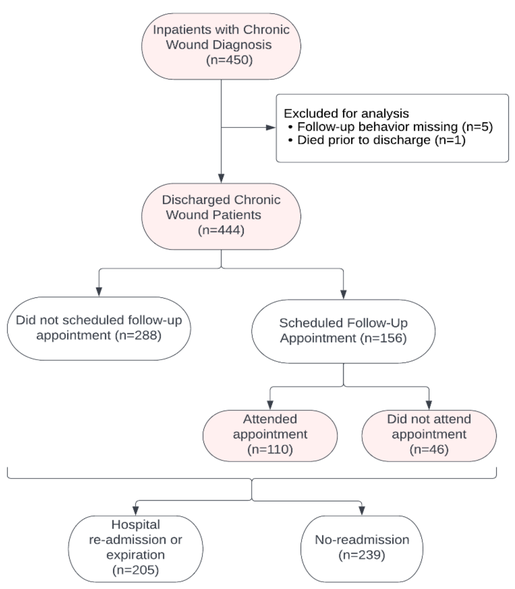

Figure 1. Study enrollment flowchart for chronic wound patients acquired from inpatient admission and subsequent follow-up adherence behavior.

Methods

All hospitalized patients who consulted an in-house wound care staff at a primary medical facility between August 2017 to June 2020 were retrospectively reviewed, regardless of primary admission diagnosis. Comorbid conditions were standardized with the Charlson Comorbidity index. Referred patients received standardized care from a multi-disciplinary team at an outpatient wound care facility. Follow-up efficacy on patient outcomes was assessed through 90-day hospital readmission rates. Primary endpoints were pre-discharge scheduling and follow-up rates to identify the impact and timing of social determinants of health and clinical factors on the patient decision process for follow-up adherence.

Results

Of the 444 patients, 205 (46.2%) were readmitted to the hospital or expired within 90-days. Adjusted analysis identified reception of follow-up care as an independent predictor of hospital readmission during the timeframe (adjusted hazard ratio, 2.39; CI, 1.45-3.89, p<0.001).

Of the 156 (35.1%) patients who scheduled a follow-up, 110 (70.5%) patients adhered to their appointment.

Compared with patients that scheduled, patients that did not schedule a follow-up were older (median age, 79 [interquartile range (IQR), 64-89] vs 70 years[IQR, 58-79], P<0.001), had a greater Asian proportion (5.21% vs 1.3%, P=0.04), longer hospital stay (median days, 9 [IQR, 5-15.5] vs 6 [IQR, 3-11], P<0.0001), and more discharged to skilled nursing facilities (47.6% vs 26.3%, P<0.0001).

Among patients who scheduled follow-up, skilled nursing home residents were less likely to be follow-up adherent (odd's ratio, 0.3; 95% CI, 0.14-0.65, P<0.01). Additional factors impacting the likelihood of follow-up scheduling did not appear to affect follow-up adherence.

Table 1: Demographic and clinical factors associated with patient re-admission into the hospital or expiration within 90-days of discharge for chronic wound complications. [a]type of wound information missing for one patient (n=443). [b]Medicaid group included all patients with Medicaid, medicare patients included patients possessing Medicare with or without supplemental private insurance, and private insurance patients included all other insurances; totaling n=383.

Factor	Total Sample (n = 444)	Re-Admission or Expired (n = 205)	No Re-Admission (n = 239)	OR [95% CI]	p-value
Age					0.14
Years, median (IQR)	75 (62, 86)	74 (61, 84)	76 (63, 89)	-	
Sex, n (%)					**0.047**
Male	233 (52.5)	118 (57.6)	115 (48.1)	1.5 [1.00-2.12]	
Female	211 (47.5)	87 (42.4)	124 (51.9)	-	
Race, n (%)					
White	293 (66.0)	131 (63.9)	162 (67.8)	*ref.*	
Black	75 (16.9)	35 (17.1)	40 (16.7)	1.1 [0.64-1.80]	0.76
Asian	17 (3.8)	10 (4.9)	7 (2.9)	1.8 [0.63-4.57]	0.26
Other	59 (13.3)	29 (14.1)	30 (12.6)	1.2 [0.70-2.06]	0.53
Ethnicity, n (%)					0.65
Hispanic	33 (7.4)	14 (6.8)	19 (7.9)	0.8 [0.41-1.76]	
Not Hispanic	411 (92.6)	191 (93.2)	220 (92.1)	-	
Charlson Comorbidity Index					**<0.001**
Score, median	4 (3, 5)	4 (3, 6)	4 (2, 5)	-	
CHF	135	75	60	1.7 [1.15-2.57]	**0.01**
No CHF	309	130	179	-	
Wound Type, n (%)					0.09
PU	179 (40.4)	80 (39.2)	99 (41.4)	*ref.*	-
Venous	133 (30.0)	68 (33.3)	65 (27.2)	1.3 [0.83-2.03]	0.30
Trauma	38 (8.6)	11 (5.4)	27 (11.3)	0.5 [0.23-1.07]	0.10
Surgical	33 (7.5)	16 (7.8)	17 (7.1)	1.2 [0.55-2.43]	0.71
DFU	18 (4.1)	12 (5.9)	6 (2.5)	2.5 [0.90-6.81]	0.08
Other	42 (9.5)	17 (8.3)	25 (10.5)	0.8 [0.43-1.62]	0.73
Health insurance[b], n (%)					
Medicaid	148 (38.6)	71 (41)	77 (36.6)	*ref.*	
Medicare	139 (36.2)	55 (31.7)	84 (40)	0.7 [0.45-2.24]	0.16
Private	96 (25)	47 (27.1)	49 (23.3)	1.0 [0.62-1.75]	0.89
Discharge to follow-up Latency, Distance to clinic,					0.76
Miles, median (IQR)	8.8 (5.3, 12.9)	8.8 (5.1, 12.9)	9.0 (5.4, 12.9)	-	

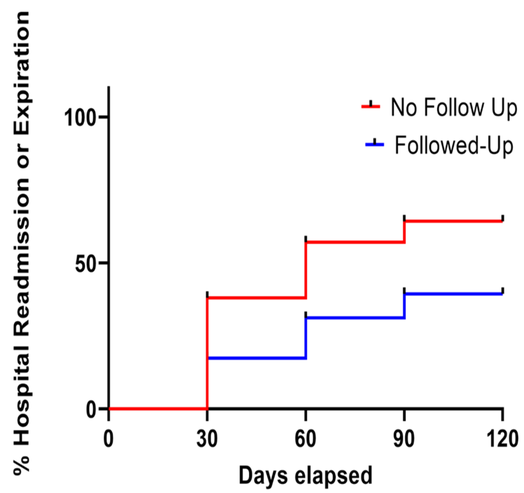

Figure 2. Kaplan-Meier survival curve analysis of patients with follow-up and no follow-up 90-days after hospital discharge, (hazard ratio, 2.58, 95% CI, 1.440-4.75) Patients not hospitalized post-90 days were considered not hospitalized or expired within this study.

Table 2. Examination of follow-up adherence behavior on hospital readmission or expiration within 90-days post-discharge.

Factor	Total Sample (n = 444)	Re-Admission or Expired (n = 205)	No Re-Admission (n = 239)	OR [95% CI]	p-value
Follow-up appointment made					
Yes	156 (35.1)	75 (36.6)	81 (33.9)	1.1 [0.76-1.67]	0.55
No	288 (64.9)	130 (63.4)	158 (66.1)	-	
Received follow-up care					
Yes	110 (24.8)	44 (58.6)	66 (81.4)	0.3 [0.15-66]	**0.002**
No	334 (75.2)	31 (41.3)	15 (18.5)	-	

Conclusion

Pre-hospital discharge communication for follow-up scheduling may not be optimal for patient decision-making in wound management outcomes.

Social determinants of health and post-discharge lifestyle should be considered in patient comprehension of outpatient wound management.