The Impact of Integrating Pharmacist and Social Worker Services in Discharge Planning: Reducing Medication-Related Hospital Readmissions

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Abstract

Hospital readmissions due to medication-related issues are a significant burden on healthcare systems. This study aimed to evaluate the effectiveness of integrating pharmacist and social worker services in discharge planning to reduce 30-day hospital readmissions. Conducted at a tertiary hospital with 300 high-risk patients, 150 received collaborative discharge planning involving both pharmacists and social workers, while 150 received standard care. The intervention group had a significantly lower readmission rate (13.3%) compared to the control group (30.0%) (p < 0.05). Medication adherence and patient satisfaction were also significantly higher in the intervention group. The results suggest that collaborative discharge planning, addressing both clinical and social determinants of health, is effective in reducing hospital readmissions. This approach highlights the importance of multidisciplinary care in discharge planning.

Keywords: pharmacist, social worker, discharge planning, hospital readmissions, medication adherence, multidisciplinary care, social determinants of health.

Introduction

Hospital readmissions are a significant issue in healthcare, leading to increased healthcare costs and poorer patient outcomes. Many readmissions, particularly within 30 days of discharge, are linked to medication-related problems, including medication errors, poor adherence, and inadequate patient education regarding their medication regimen (Kripalani et al., 2007). This issue is particularly pronounced in patients with complex medication needs, who may experience confusion or difficulty managing their medications after discharge, resulting in preventable complications (Coleman et al., 2004). Effective discharge planning has been identified as a key strategy to prevent these readmissions, yet traditional approaches often overlook the critical importance of comprehensive medication management and social support services (Naylor et al., 2011).

Pharmacists play a pivotal role in discharge planning by ensuring medication reconciliation, educating patients on proper medication use, and identifying potential drug interactions (Beuscart et al., 2021). Meanwhile, social workers address social determinants of health by providing emotional support, coordinating care, and connecting patients with community resources (Lillis et al., 2020). Despite their essential roles, these professionals often work independently, missing opportunities for collaborative efforts that could lead to more effective discharge planning and reduced readmission rates.

The integration of pharmacists and social workers into a collaborative discharge planning process has the potential to significantly improve patient outcomes by addressing both the clinical and social aspects of post-discharge care. This study aims to investigate the effectiveness of such a collaborative approach in reducing hospital readmissions due to medication-related issues. Specifically, we will explore whether involving both pharmacists and social workers in discharge planning results in better medication adherence, improved patient satisfaction, and lower rates of readmission compared to traditional discharge practices.

Literature Review

Hospital readmissions, particularly those occurring within 30 days of discharge, have garnered significant attention as indicators of the quality of care. Numerous studies have pointed to medication-related issues as a leading cause of these readmissions, particularly in patients with chronic diseases or those requiring complex medication regimens (Koehler et al., 2009). A growing body of research suggests that enhancing discharge planning, particularly with a focus on medication reconciliation and social support, can help mitigate these risks (Kripalani et al., 2007).

1. Medication-Related Readmissions

Research indicates that medication-related issues, including non-adherence, incorrect medication administration, and lack of proper patient education, contribute significantly to preventable hospital readmissions (Coleman et al., 2005). For example, a study by Budnitz et al. (2007) found that adverse drug events account for a substantial proportion of 30-day readmissions among older adults. Medication reconciliation, which ensures that patients' medication lists are accurate and complete upon discharge, is widely considered a key strategy in addressing this issue (Beuscart et al., 2021).

Despite the availability of guidelines on medication reconciliation and patient education, implementation in many healthcare settings remains inconsistent. Studies have identified barriers such as time constraints, fragmented care, and the absence of an interdisciplinary approach to discharge planning (Cloonan et al., 2013). As a result, patients are often discharged with incomplete or inaccurate information regarding their medications, heightening their risk for readmission.

2. Role of Pharmacists in Discharge Planning

Pharmacists have been increasingly recognized for their vital role in discharge planning, particularly in the realm of medication management. Their responsibilities typically include medication reconciliation, patient education, and post-discharge follow-up, all of which are aimed at minimizing medication errors and enhancing adherence (Victor,2018). A study by Mekonnen et al. (2016) highlighted the effectiveness of pharmacist-led medication reconciliation in reducing medication discrepancies and adverse drug events post-discharge.

Moreover, several studies have demonstrated the benefits of pharmacist involvement in transitional care. For instance, a randomized controlled trial by Hansen et al. (2015) found that patients who received discharge counseling and follow-up from pharmacists were significantly less likely to experience a 30-day readmission compared to those who did not receive such services. These findings underscore the value of pharmacist-driven interventions in reducing medication-related readmissions.

3. Role of Social Workers in Discharge Planning

Social workers also play a crucial role in discharge planning by addressing the non-medical aspects of patient care, including social determinants of health. They assist patients with navigating the healthcare

system, coordinating community services, and providing emotional and psychological support (Lillis et al., 2020). Research has shown that patients with complex social needs—such as those who face housing instability, financial difficulties, or limited social support—are at higher risk for readmission (Harrison et al., 2011). By helping patients overcome these barriers, social workers can facilitate smoother transitions from hospital to home and contribute to better overall outcomes (Fox et al., 2013).

Several studies highlight the importance of integrating social work services into discharge planning. For example, a study by Alper et al. (2017) demonstrated that incorporating social workers into interdisciplinary discharge teams led to improved patient satisfaction and reduced readmissions, particularly among high-risk populations. These findings suggest that addressing both the clinical and social aspects of patient care is critical to preventing hospital readmissions.

4. Interdisciplinary Collaboration in Discharge Planning

Interdisciplinary collaboration between healthcare professionals has been identified as a key strategy in improving patient outcomes. The integration of pharmacists and social workers into discharge planning teams holds particular promise for reducing readmissions by addressing both clinical and social factors simultaneously (Naylor et al., 2011). Studies have shown that collaborative care models, where multiple healthcare professionals work together to coordinate care, can lead to significant improvements in patient outcomes and satisfaction (Bosworth et al., 2011).

For instance, a study by Bryant-Lukosius et al. (2015) found that patients receiving care from interdisciplinary teams experienced fewer medication errors, lower readmission rates, and higher satisfaction with their care. Similarly, research by Pogue (2007) found that when pharmacists and social workers collaborated in discharge planning, patients were more likely to understand their medications and were less likely to face social barriers that could lead to readmission. Despite these findings, more research is needed to explore the specific mechanisms through which collaboration between pharmacists and social workers can reduce hospital readmissions, particularly in diverse patient populations.

5. Gaps in Current Research

While there is a growing body of evidence supporting the roles of pharmacists and social workers in discharge planning, relatively few studies have focused specifically on the effectiveness of their collaboration in preventing medication-related readmissions. Much of the current literature addresses these professionals' contributions independently, but there is limited research examining the combined impact of their services on patient outcomes (Harrison et al., 2011). Moreover, existing studies tend to focus on short-term outcomes such as 30-day readmissions, with less attention paid to long-term patient outcomes and quality of life post-discharge.

Given the increasing complexity of healthcare delivery and the rise in multimorbidity among hospitalized patients, there is a need for more comprehensive studies that evaluate the effectiveness of interdisciplinary discharge planning approaches, particularly those that integrate both clinical and social support services. Such research could provide valuable insights into how healthcare teams can better support patients in managing their medications and navigating the challenges they face after discharge.

Methodology

Study Design

This research employed a prospective cohort study design to investigate the effectiveness of integrating pharmacist and social worker services into the discharge planning process in reducing hospital readmissions due to medication-related issues. The study was conducted at tertiary care facility, over a 12-month period. The study focused on patients with high risk for readmission, specifically those with chronic illnesses requiring complex medication regimens.

Study Setting and Participants

The study was conducted in the medical and surgical units of Tertiary Hospital. The inclusion criteria for participants were adult inpatients (aged 18 years and older) identified as at high risk for readmission based on their medical history, including those with chronic conditions such as heart failure, chronic obstructive pulmonary disease (COPD), diabetes, and multiple comorbidities. Patients were excluded if they were transferred to other facilities or refused to participate.

A total of 300 patients were included in the study, with 150 assigned to the intervention group (receiving integrated pharmacist and social worker discharge planning services) and 150 assigned to the control group (receiving standard discharge care). Patients were enrolled consecutively upon admission to the hospital, and group assignments were based on hospital discharge unit availability and resources.

Intervention

The intervention involved a collaborative discharge planning process, integrating both pharmacists and social workers. For the intervention group, the discharge process was structured as follows:

1. Pharmacist Involvement:
   - Pharmacists conducted a comprehensive medication reconciliation for each patient before discharge. They reviewed the patient's medication list, ensured accuracy, and identified potential drug interactions or duplications.
   - Pharmacists provided individualized patient education, explaining the purpose, dosage, and potential side effects of each medication. They also addressed any questions or concerns the patient or their family had about the medications.
   - Pharmacists followed up with patients 7 days post-discharge via phone to assess medication adherence and identify any emerging issues.

2. Social Worker Involvement:
   - Social workers assessed the patient's social determinants of health, such as housing stability, transportation needs, financial concerns, and access to community resources.
   - They coordinated post-discharge services, including home health support, caregiver resources, and follow-up appointments.
   - Social workers conducted post-discharge calls to ensure patients had access to necessary social and medical services and assisted in troubleshooting any barriers to care, such as financial issues or difficulty accessing medications.

In the control group, discharge planning was handled through the hospital's standard discharge protocol, with limited pharmacist and social worker involvement.

Data Collection

Data were collected through electronic medical records (EMRs) and structured interviews. The primary outcome measure was the rate of hospital readmissions within 30 days of discharge. Secondary outcome measures included medication adherence, patient satisfaction, and the identification of barriers to care.

1. Readmission Rates: Readmission rates were tracked using the hospital's EMR system, and data were collected for both the intervention and control groups.

2. Medication Adherence: Medication adherence was assessed during follow-up calls conducted by pharmacists, using a self-reported measure and pharmacy refill records.

3. Patient Satisfaction: Patient satisfaction with discharge planning and post-discharge care was measured using a validated survey tool administered via phone calls 14 days post-discharge.

4. Barriers to Care: During follow-up, social workers documented any social or financial barriers patients faced post-discharge and how they were addressed.

Data Analysis

The collected data were analyzed using SPSS. Descriptive statistics were used to summarize baseline characteristics of the study population. Chi-square tests were employed to compare categorical variables such as readmission rates between the intervention and control groups, while independent t-tests were used for continuous variables like patient satisfaction scores.

A Kaplan-Meier survival analysis was conducted to assess the time to readmission for both groups, with a log-rank test used to determine statistical significance. Logistic regression analysis was performed to identify independent predictors of readmission, controlling for potential confounding variables such as age, comorbidities, and social determinants of health.

Results

The results of the intervention demonstrated a statistically significant reduction in 30-day readmission rates in the intervention group compared to the control group ($p < 0.05$). Medication adherence was also higher in the intervention group, with patients reporting fewer issues with understanding or obtaining their medications. Additionally, patient satisfaction scores were significantly higher in the intervention group, with patients expressing greater confidence in their post-discharge care.

Ethical consideration:

Study approval was obtained from the ethics committee.

Findings

The study aimed to evaluate the effectiveness of integrating pharmacist and social worker services in discharge planning in reducing 30-day hospital readmissions due to medication-related issues. A total of 300 patients were included in the study, with 150 patients assigned to the intervention group and 150 to the control group. The findings are presented below, with detailed analyses of readmission rates, medication adherence, patient satisfaction, and barriers to care.

1. Hospital Readmission Rates

The primary outcome measure was the 30-day readmission rate. Patients in the intervention group, who received collaborative discharge planning, had significantly lower readmission rates compared to those in the control group.

Group	Number of Patients	Readmission Rate	P-value
Intervention (n=150)	150	20 (13.3%)	< 0.05
Control (n=150)	150	45 (30.0%)	

Patients in the intervention group had a readmission rate of 13.3%, compared to 30.0% in the control group. The difference between the two groups was statistically significant (p < 0.05), indicating that collaborative discharge planning significantly reduced readmissions due to medication-related issues.

2. Medication Adherence

Medication adherence was assessed through follow-up phone calls with patients 7 days post-discharge. Patients in the intervention group reported higher levels of medication adherence compared to the control group.

Group	Number of Patients	High Adherence (%)	Moderate Adherence (%)	Low Adherence (%)	P-value
Intervention (n=150)	150	100 (66.7%)	40 (26.7%)	10 (6.7%)	< 0.05
Control (n=150)	150	60 (40.0%)	50 (33.3%)	40 (26.7%)	

As seen in Table 2, 66.7% of patients in the intervention group reported high medication adherence, compared to only 40.0% in the control group. Additionally, the percentage of patients with low adherence was significantly lower in the intervention group (6.7% vs. 26.7%, p < 0.05).

3. Patient Satisfaction

Patient satisfaction was assessed using a validated survey administered 14 days post-discharge. The results indicated that patients in the intervention group were significantly more satisfied with their discharge process than those in the control group.

Satisfaction Domain	Intervention Group Mean Score (±SD)	Control Group Mean Score (±SD)	P-value
Medication Education	4.8 ±0.4	3.9 ±0.7	< 0.05
Post-Discharge Support	4.7 ±0.5	3.6 ±0.8	< 0.05
Overall Satisfaction	4.9 ±0.3	3.8 ±0.9	< 0.05

Table 3 illustrates the mean satisfaction scores across several domains. Patients in the intervention group reported higher satisfaction in terms of medication education (mean score 4.8 vs. 3.9), post-discharge

support (mean score 4.7 vs. 3.6), and overall satisfaction (mean score 4.9 vs. 3.8), all of which were statistically significant ($p < 0.05$).

4. Barriers to Care

During follow-up calls, social workers identified several barriers to care that could have contributed to readmissions in the control group. These barriers included lack of transportation, financial challenges in obtaining medications, and poor social support.

Barrier	Intervention Group (n=150)	Control Group (n=150)
Financial Challenges	15 (10%)	35 (23.3%)
Transportation Issues	8 (5.3%)	25 (16.7%)
Lack of Social Support	12 (8%)	30 (20%)

As shown in Table 4, patients in the control group faced significantly more barriers to care than those in the intervention group. Financial challenges were reported by 23.3% of control group patients compared to 10% in the intervention group. Similarly, transportation issues and lack of social support were reported more frequently in the control group.

Summary of Key Findings
- Readmission Rates: The intervention group had a significantly lower readmission rate (13.3%) compared to the control group (30.0%).
- Medication Adherence: Patients in the intervention group demonstrated higher levels of medication adherence (66.7% vs. 40.0%).
- Patient Satisfaction: Overall satisfaction with the discharge process was significantly higher in the intervention group, particularly regarding medication education and post-discharge support.
- Barriers to Care: The control group experienced more barriers, particularly financial challenges, transportation issues, and lack of social support, compared to the intervention group.

These findings suggest that integrating pharmacists and social workers in discharge planning can significantly reduce hospital readmissions and improve patient outcomes, particularly in terms of medication adherence and satisfaction with care.

Discussion

The findings from this study demonstrate the significant impact of integrating pharmacist and social worker services into discharge planning on reducing hospital readmissions due to medication-related issues. The intervention group, which received collaborative discharge planning involving both pharmacists and social workers, had a notably lower 30-day readmission rate compared to the control group. Additionally, patients in the intervention group reported higher medication adherence and satisfaction with their discharge experience. These results highlight the importance of a multidisciplinary approach in improving discharge outcomes, particularly for patients at high risk of readmission.

1. Reduction in Readmission Rates

The results indicate that the collaborative discharge planning intervention reduced 30-day readmission rates from 30.0% in the control group to 13.3% in the intervention group. This finding is consistent with previous research that emphasizes the role of pharmacists in ensuring accurate medication reconciliation and patient education (Beuscart et al., 2021; Mekonnen et al., 2016). The inclusion of social workers, who addressed social determinants of health such as transportation and financial challenges, likely contributed to this

reduction by ensuring that patients had the necessary support and resources to manage their care post-discharge (Lillis et al., 2020).

The significant reduction in readmissions suggests that many of these rehospitalizations are preventable when patients receive comprehensive support addressing both clinical and non-clinical factors. Previous studies have indicated that patients with complex needs, such as those managing multiple medications or chronic conditions, are particularly vulnerable to readmissions due to poor medication adherence, confusion over medication regimens, or a lack of social support (Hansen et al., 2011). By involving both pharmacists and social workers, this study demonstrates the effectiveness of addressing these issues in a coordinated manner.

2. Improved Medication Adherence
Medication adherence was significantly higher in the intervention group, with 66.7% of patients reporting high adherence compared to only 40.0% in the control group. This finding aligns with previous research showing that pharmacist-led interventions, such as patient education and follow-up, improve adherence (Victor, 2018). The intervention's effectiveness in enhancing adherence can be attributed to pharmacists' role in ensuring that patients understood their medication regimens, the purpose of each medication, and potential side effects.

In contrast, the control group, which did not receive individualized pharmacist counseling, had a higher proportion of patients reporting low adherence (26.7% vs. 6.7%). This discrepancy suggests that the standard discharge process, which often lacks sufficient focus on medication education, leaves many patients ill-prepared to manage their medications effectively. The post-discharge follow-up conducted by pharmacists in the intervention group further supported adherence, as it allowed for the identification and resolution of any issues that arose after patients returned home.

3. Increased Patient Satisfaction
The intervention group also reported significantly higher satisfaction with their discharge process, particularly in terms of medication education and post-discharge support. The mean satisfaction scores were higher across all domains, indicating that patients felt more confident and supported in managing their care after discharge. This finding is in line with previous studies that highlight the importance of clear communication and patient education in improving satisfaction and health outcomes (Naylor et al., 2011).

Patients who received collaborative discharge planning benefited not only from enhanced clinical support but also from the emotional and logistical support provided by social workers. By addressing patients' broader social needs, social workers likely contributed to the higher satisfaction scores in the intervention group. For example, patients who had their transportation or financial challenges resolved were likely more satisfied with their overall care experience.

4. Addressing Barriers to Care
Another important finding of this study is the significant difference in the barriers to care reported by patients in the control group compared to those in the intervention group. The control group faced more challenges related to financial difficulties, transportation, and social support, which likely contributed to their higher readmission rates. These results underscore the importance of addressing social determinants of health in discharge planning.

Social workers in the intervention group played a critical role in identifying and mitigating these barriers, ensuring that patients had the necessary resources to adhere to their medication regimens and follow-up appointments. Previous research has shown that social determinants such as housing instability, lack of social support, and financial difficulties are key predictors of poor health outcomes, including readmissions (Fox et al., 2013). By addressing these factors, social workers contributed to the improved outcomes observed in the intervention group.

5. Implications for Practice

The findings of this study have important implications for hospital discharge planning practices. First, they suggest that integrating pharmacists and social workers into the discharge process can significantly reduce medication-related readmissions and improve patient outcomes. Hospitals, particularly those with high rates of readmissions, should consider adopting a multidisciplinary discharge planning model that includes both clinical and social support.

Moreover, the study highlights the need for structured follow-up after discharge. Pharmacist-led follow-up calls, which addressed medication adherence issues and provided additional education, were crucial in ensuring that patients remained on track with their treatment regimens. This suggests that discharge planning should not end at the hospital door; rather, it should continue into the post-discharge period to prevent complications and readmissions.

6. Limitations and Future Research

While this study provides valuable insights into the effectiveness of integrating pharmacist and social worker services in discharge planning, it has several limitations. The study was conducted in a single tertiary hospital, which may limit the generalizability of the findings to other healthcare settings. Additionally, the study's follow-up period was limited to 30 days, and future research could explore the long-term effects of this intervention on readmissions and overall patient outcomes.

Further research is also needed to explore the cost-effectiveness of implementing a multidisciplinary discharge planning model. While the results suggest improved patient outcomes, it is important to evaluate whether the benefits of reduced readmissions outweigh the costs associated with hiring additional staff and providing follow-up services.

Conclusion

The integration of pharmacists and social workers into discharge planning significantly reduced 30-day readmission rates and improved medication adherence and patient satisfaction. This collaborative approach addresses both clinical and social barriers to care, providing a more comprehensive solution to prevent medication-related readmissions. These findings underscore the importance of multidisciplinary care in ensuring successful transitions from hospital to home and call for broader implementation of such models in healthcare settings.

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