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Cover Page Footnote

Dedication: To my family and friends, who inspired and encouraged me to become a nurse, and whose continued support has carried me through. Acknowledgments: I would like to thank my faculty chair, Dr. Smith, for her continued encouragement throughout this program. Your support, along with that of Dr. Moore, has bolstered my excitement for research and the vast opportunities associated with the DNP degree. My sincerest gratitude to my practicum preceptors, Shawn Craddock and Laurel Molloy. You have demonstrated strong leadership skills and have inspired me to continue to grow as a nurse and a scholar. Laurel, thank you specifically for introducing me to an entirely new side of healthcare. Your willingness to allow me to participate in projects and meetings has provided me with tremendous growth. Thank you to my family and friends. You have each encouraged and supported me throughout my education and nursing endeavors. I wish I could thank you each by name, but there is simply not enough room or words to describe my thankfulness for each of you. You all challenge me to be the best I can be and to work with excellence. I hope to continually make you proud. Lastly, thank you to my Lord and Savior, Jesus Christ, who apart from, I have and am nothing. But, who with, I have abundant life and joy eternally.

Comparison of Post Discharge Telephone Call Methods and Their Impact on Patient Outcomes and Satisfaction: An Integrative Review

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Abstract

Background: Discharge planning and education may directly influence patient outcomes, including patient satisfaction and readmission rates. Discharge processes and follow-up vary across departments and facilities. Follow-up telephone calls after patient discharge are commonly utilized; however, delivery techniques differ across healthcare areas. The purpose of this integrative review is to explore the various techniques of initiating post-discharge follow-up phone calls and their impact on patient outcomes and satisfaction. **Method:** A literature search across different Databases and the search engine Google Scholar yielded over 2,751 articles utilizing the Boolean phrases: (*follow up or follow-up or post-discharge or following discharge or discharge*) AND (*techniques or methods or strategies or interventions*) AND (*patient safety or patient outcomes or quality of care*) AND *telephone follow up*. Other search phrases included *follow up phone call methods* and *Re-Engineered Discharge (RED) discharge toolkit*. A final total of 22 studies were chosen for evaluation and analysis. **Results:** Methods examined were, calls by a registered nurse/advanced practice nurse or trained nonmedical personnel, communication via an automated short messaging system (SMS), and scripted or non-scripted methodology, with patient outcomes measured according to patient satisfaction and readmission rates. A literature review indicated that scripting may be beneficial for all follow-up methods. Calls from nonmedical staff and SMS/automated messages can supplement nurse-led follow-up. **Conclusion:** Improvement was found with post-discharge follow-up; however, no consistent findings indicate one follow-up method is more beneficial than another. Therefore, the impact of the various methods on healthcare costs should be considered when seeking the best practice.

Keywords: follow-up, post-discharge, techniques/methods, telephone follow-up, SMS/automated messaging, RED discharge toolkit, patient outcomes, readmission rates

Comparison of Post Discharge Telephone Call Methods and Their Impact on Patient Outcomes and Satisfaction: An Integrative Review

Discharge planning and education is defined as a transition of care, typically occurring following hospital/emergency department (ED) admission, outpatient procedure or inpatient units to home or a skilled facility (Patel & Bechmann, 2022). Discharge planning and education may directly influence patient outcomes, including critical measures such as patient satisfaction

and readmission rates. Follow-up methods after patient discharge vary. However, using a telephone call for discharge follow-up is touted as an effective method to manage patient needs, reduce readmissions, and improve patient satisfaction and approval ratings (Woods et al., 2019). Telephone follow-up calls have also proven effective in improving patient adherence to discharge instructions and attendance at scheduled follow-up appointments (Luciani-McGillivray et al., 2020). Despite post-discharge telephone follow-up calls being commonly utilized, delivery techniques differ across healthcare areas (Coffey et al., 2019). Techniques include non-scripted calls and using a discharge script such as the Re-Engineered Discharge (RED) toolkit developed by the Agency for Healthcare Research and Quality (AHRQ, 2013). The Agency for Healthcare Research and Quality designed the RED toolkit to effectively prepare the patient for discharge and support the patient following discharge to improve patient outcomes by reducing readmission rates and improving patient satisfaction. This toolkit prescribes a follow-up call initiated 48 hours following patient discharge utilizing a scripted approach. Telephone follow-up strategies also vary by the type of individual who initiated the call. Calls may be made by a registered nurse/advanced practice nurse (RN/APRN) or nonmedical personnel, or a message may be sent by an automated message or short messaging system (SMS). While there are different methods for administering a post-discharge telephone follow-up, evidence for the best approach is unknown.

The Problem of Unplanned Readmission and Cost

Ineffective discharge planning, insufficient education, and lack of follow-up are associated with poor patient outcomes, including decreased patient satisfaction ratings and increased readmission rates (Kim et al., 2021). Specifically, one-fifth of Medicare-coded hospital 30-day readmissions are attributed to ineffective discharge planning and follow-up (Beauvais et al., 2022; Mitchell, 2022). Such outcomes and readmissions create problems and concerns for the patient but also result in increased strain on and costs to the health care system.

It is estimated that the average hospital readmission costs a healthcare facility approximately \$15,200 (Beauvais et al., 2022). National readmission rates average over 14%, representing a significant need for improvement and reduction of readmissions. Healthcare facilities use ED and hospital readmission rates as a quality indicator (van Loon-van Gaalen et al., 2021). The Hospital Readmission Reduction Program, developed by the Centers for Medicare and Medicaid Services (2023), focuses on effective discharge planning and patient

engagement to reduce unplanned readmissions in specific patients. The Hospital Readmission Reduction Program influences hospital reimbursement and has the potential to result in a 3% reduction in payment related to 30-day readmission rates within a performance period. The average cost per readmission and the impact of patient readmissions on hospital reimbursement rates create a critical need to reduce such occurrences.

Ultimately, patient readmissions increase demand on hospital staff, add to an often already taxed patient census, and impact hospital reimbursement, thus increasing health care costs. Poor patient outcomes, such as sentinel events following discharge and poor patient satisfaction ratings, may also expose the healthcare facility and its care providers to litigation in extreme circumstances and negatively influence public perceptions and community, state, and federal support. Specifically, The Centers for Medicare and Medicaid Services (2023) collect and publish data regarding patient outcomes, including 30-day readmission rates, mortality rates, and patient experience ratings, for transparency with consumers and accountability for healthcare facilities.

The purpose of this integrative review is to explore the various techniques of initiating post-discharge follow-up phone calls and their impact on patient readmission outcomes and satisfaction following discharge from a hospital. The findings from this review may help inform current clinical practice to improve discharge processes and follow-up methods and promote positive patient outcomes.

The clinical question of focus is, “What methods and processes are used for post-discharge follow-up telephone calls, and what is their impact on patient satisfaction?” A subsequent question of interest is, “Is there a relationship between the method of follow-up telephone calls and patient outcomes?”

Method

For this review, the term ‘telephone follow-up call’ is defined as a method used to contact a patient after discharge. The calls by a registered nurse/advanced practice nurse or trained nonmedical personnel, communication via an automated short messaging system (SMS), and scripted or non-scripted methodology were included in the literature review. Patient outcomes are evaluated based on patients' satisfaction rates and the frequency of readmissions.

Search Terms, Databases, and Inclusion and Exclusion Criteria

The following keywords were used for the search: (*follow up* or *follow-up* or *post discharge* or *following discharge* or *discharge*) AND (*techniques* or *methods* or *strategies* or *interventions*) AND (*patient safety* or *patient outcomes* or *quality of care*) AND *telephone follow-up*. Google Scholar was also utilized for the literature search. Search phrases used in Google Scholar included *follow-up phone call methods* and the *RED discharge toolkit*.

Databases such as CINAHL, PubMed, ProQuest, and MEDLINE were accessed for the literature search. The search engine Google Scholar was also used to retrieve publications. Liberty University's Jerry Falwell Library was utilized for interlibrary loans to obtain articles with limited access through the primary database search.

Studies were included if they: (1) were published in English between 2019 and 2023, (2) involved adult participants, (3) utilized an RN, APRN, or SMS for follow-up contact, (4) used scripted follow-up methods, and (5) measured patient satisfaction or readmission rates as outcomes. The initial search yielded over 2,751 articles subsequently narrowed by full-text articles from peer-reviewed journals, written in English, and published between 2019 and 2023. Unpublished manuscripts and abstracts were eliminated. This search resulted in a total of 81 articles. Articles were then sorted based on topical relevance utilizing keywords and phrases such as *nurse-driven*, *non-medical personnel*, *telephone or SMS follow-up*, and *RED toolkit*. Studies involving physicians or other health professionals, such as pharmacists, were also excluded. Duplicate articles and studies with inconclusive findings were eliminated. A quality appraisal was performed based on informational significance and representation of current data (Whittemore & Knafl, 2005).

Conceptual Framework

According to Whittemore and Knafl (2005), developing a clearly defined topic of interest is critical to the overall success of the integrative review. The conceptual framework for an integrative review consists of problem identification, a literature search, data evaluation and analysis, and presentation of review findings (Whittemore & Knafl, 2005). This review was conducted using this framework.

A total of 22 articles were chosen for evaluation and analysis. A thematic analysis was conducted on the selected articles to identify strategies commonly utilized in patient telephone follow-up following hospital discharge. These consisted of calls made by nurses or trained

nonmedical personnel or a standardized messaging telephone follow-up, and the use of a script. Studies were also analyzed for outcomes related to patient satisfaction or hospital/ED readmission rates.

Toronto and Remington (2020) defined bias as “anything that systematically or predictably distorts the results of a study” (p. 46). Bias may occur throughout the various stages of research and has the potential to alter results and skew findings. The 22 articles utilized in this integrative review were evaluated for potential bias and study limitations, as seen in the Evidence Table in Appendix A. Studies demonstrating strong potential bias were excluded from this integrative review. The type of study, level of evidence, and relevance to this review are listed in detail in the Evidence Table found in Appendix A.

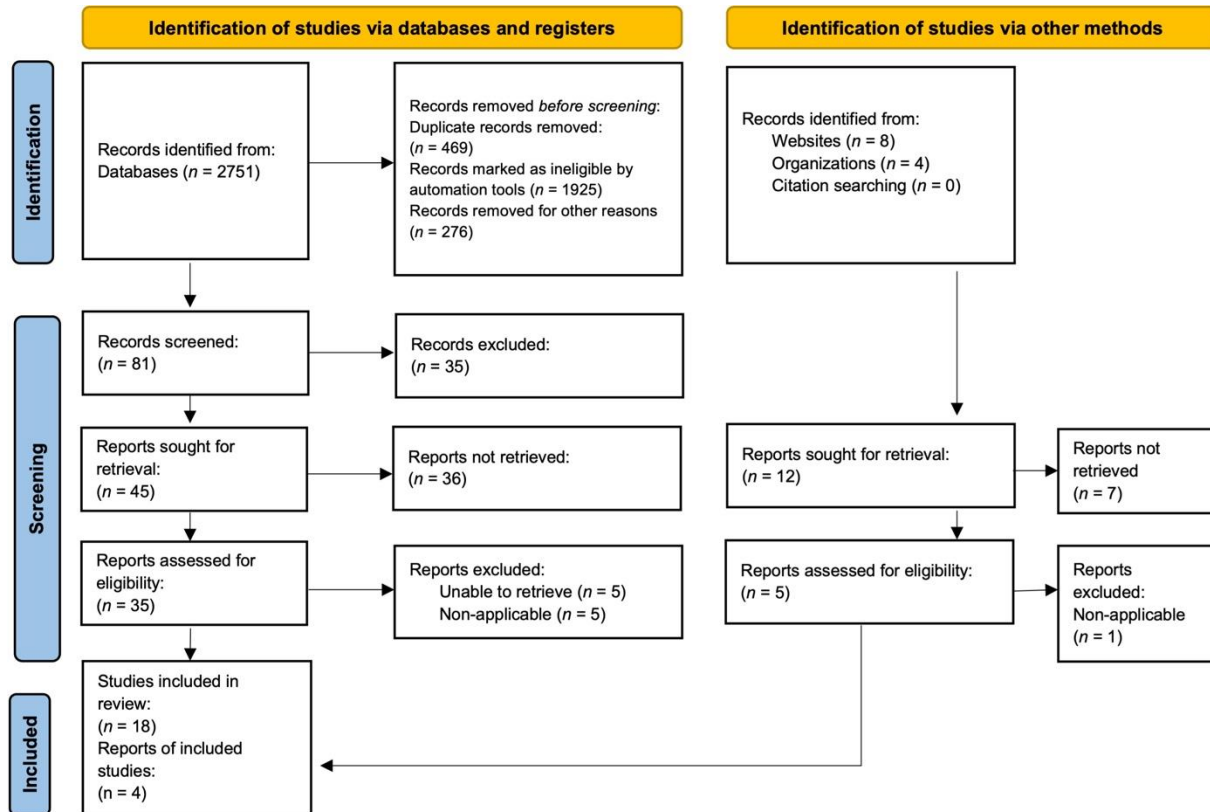
Melnik’s levels of evidence hierarchy were utilized as an appraisal tool (see Appendix B). Levels of evidence range from Level 1 to Level 7, with levels decreasing in number as study strength increases (University of Michigan Library, 2022). Studies chosen for this review range from Level 6 to Level 1. Seven studies are descriptive or qualitative, categorized as Level 6. Two studies are mixed-study systematic reviews, ranking at a Level 5. Eight studies are quasi-experimental in nature or control trials without randomization, or Level 3. Four studies are randomized control studies, ranking at Level 2. One study is a systematic review of randomized control studies, classified as the highest level of evidence, Level 1, based on Melnik’s hierarchy. Data were reviewed not only for the level of evidence but also for how they pertained to the clinical question. Data were not excluded based on the level of evidence; however, six articles were excluded due to lack of relevance. As recommended by Whitemore and Knafl (2005), the PRISMA flow chart developed by Page et al. (2021) was used to depict the literature search and data reduction process in Figure 1 below.

Findings/Results

A thematic analysis was conducted to identify various techniques commonly utilized in patient follow-up. The themes identified included nurse-driven follow-up, follow-up by trained nonmedical personnel, standardized messaging telephone follow-up, and utilization of scripted and non-scripted techniques. For inclusion in this review, studies were required to include outcomes related to patient satisfaction or readmission (hospital or ED) rates. This inclusion criteria ensured that the studies obtained were relevant to the clinical question posed for this review.

Figure 1

PRISMA Flow diagram



Note. Adapted from “The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews,” by M. J. Page, J. E. McKenzie, P. M. Bossuyt, I. Boutron, T. C. Hoffmann, C. D. Mulrow, L. Shamseer, J. M. Tetzlaff, E. A. Akl, S. E. Brennan, R. Chou, J. Glanville, J. M. Grimshaw, A. Hrobjartsson, M. M. Lalu, T. Li, E. W. Loder, E. Mayo-Wilson, S. McDonald, . . . Moher, D. 2021, *BMJ*, 372(71). <https://doi.org/10.1136/bmj.n71>

Nurse-Driven Follow-Up

For this review, a nurse-driven follow-up phone call is defined as a call made by a nurse such as an RN or APRN. The follow-up phone call after patient discharge is associated with a greater degree of patient compliance with discharge instructions when compared to no follow-up, regardless of the degree of education provided to the patient prior to discharge (Aloy-Prósper et al., 2020). Nurses are traditionally familiar with the typical experiences of patients discharged across various units, following certain procedures, treatments, and specific diagnoses (Chen et al., 2021). Therefore, RNs and APRNs can readily and effectively assess and address the patient’s needs (Bressman et al., 2022; Chen et al., 2021; Du et al., 2021; Luciani-McGillivray et al., 2020; Mitchell, 2022; Tomlinson et al., 2020; van Loon-van Gaalen et al., 2021).

The technique of a nurse-driven follow-up call also varied in terms of what type of nurse administered the call. Nurses making follow-up calls included APRNs, acute care RNs, nurse navigators, and primary care nurses directly or indirectly involved in the patient's hospital stay. The literature identified an increased patient satisfaction in having a nurse directly involved with the patient's care at the hospital administer the follow-up phone call. This benefit was noted from both a provider and patient perspective in the study conducted by Chen et al. (2021), and this finding correlates with similar findings by Hoyer et al. (2021) and Mitchell (2022).

Impact on facility costs and return on investment were also identified across various studies because of nurse-driven follow-up calls (Chen et al., 2021; Gardner et al., 2020). Follow-up calls are reimbursable to hospital facilities; these funds aid in staffing nurses or APRNs to provide such follow-up care (Chen et al., 2021). The study conducted by Gardner et al. (2020) also demonstrated significant cost savings when RNs did the follow-up call.

Trained Nonmedical Personnel

Another follow-up strategy identified is using trained nonmedical personnel to administer the follow-up phone call. Luciani-McGillivray et al. (2020) examined follow-up phone calls 72–96 hours post-discharge by trained nonmedical personnel following an initial nurse-driven follow-up call. The nonmedical personnel consisted of hospital volunteers trained to deliver these scripted follow-up calls. These personnel worked as a team along with the nurses who initiated the follow-up calls regarding scheduling conflicts or issues requiring attention by medical personnel. Implementing the calls by nonmedical personnel improved follow-up attainment rates to 65.5% from 48.6% when only the initial nurse-driven post-discharge follow-up call was implemented (Luciani-McGillivray et al., 2020). This indicates that a second follow-up call was beneficial.

Hendrickson et al. (2020) implemented a similar model with the initiation of a scripted follow-up call by a trained nonmedical trauma recovery coach between three and five days following patient discharge. The trained nonmedical personnel are also helpful in reiterating resources available to the patient, providing a reminder to obtain resources, or maintaining a discharge follow-up appointment either with a specialty or primary care provider via follow-up call (Hendrickson et al., 2020; Kim et al., 2021; Luciani-McGillivray et al., 2020). Using trained nonmedical personnel can increase the frequency of calls to patients and reserve nursing

attention for patients requiring assistance from a licensed healthcare professional (Luciani-McGillivray et al., 2020).

SMS and Automated Message Service

Another follow-up technique is sending a short message or an automated message service. Bressman et al. (2022) examined the delivery of a scripted follow-up call within 48 hours of discharge, followed by an SMS check-in over a 30-day period on a tapering schedule. Patient responses were directly linked with the electronic medical record and prompted nursing staff to complete a telephone follow-up based on patient response as needed. Only 8.6% of participants opted out of the program before the 30-day mark. Hallet et al. (2020) and Leconte et al. (2019) conducted similar studies, in which an SMS was used for follow-up with surgical patients. In both studies, an SMS was used as the initial attempt for contact. However, a lack of response necessitated a follow-up nurse phone call. In Hallet et al.'s (2020) study, 59% of patients responded to the initial SMS message, with 76% of the intervention group responding by the first post-op day. A similar success rate of 75% was achieved with the utilization of an automated call in a study by Harrison et al. (2020), and a success rate of 87% was attained with a standardized text message in a study by Leconte et al. (2019). A report of pain triggered a nurse-driven follow-up call, as demonstrated in similar studies utilizing other techniques (Bressman et al., 2022; Hallet et al., 2020; Harrison et al., 2022; Leconte et al., 2019; Luciani-McGillivray et al., 2020). The patient's age was correlated with a need for more calls; those over 65 needed more calls (Hallet et al., 2020; Harrison et al., 2022; Leconte et al., 2019).

Scripted Methodology

Telephone follow-up methods may use a scripted technique. Multiple studies demonstrated that individuals performing follow-up calls often experienced barriers to performing a follow-up call in a timely and targeted manner related to specific topics, overshadowing other concerns (Chen et al., 2021; Mwachiro et al., 2019). Chen et al. (2021) identified that medical staff desire to implement a standardized pain assessment protocol. Medical staff also noted that having a template of questions or topics to address during the follow-up call aided their ability to deliver an effective patient follow-up (Chen et al., 2021). The authors speculated that a standardized interview template, specifically for pain assessments, provided consistent information across various clinical settings that benefitted the patients and staff.

The studies conducted by Bressman et al. (2022) and Hendrickson et al. (2020) involved delivering one scripted post-discharge follow-up call within 48 hours and another within 3 to 5 days of discharge. The scripts utilized in the selected studies are similar, consisting of questions addressing the patient's pain and physical status, whether the patient had questions or concerns regarding discharge instructions and follow-up appointment scheduling (Bressman et al., 2022; Chen et al., 2021; Hendrickson et al., 2020). Du et al. (2021) implemented a Project RED intervention specifically designed for surgical patients (RED-S). This discharge bundle included pre-discharge patient education, care plan development, and post-discharge planning and follow-up. Depending on whether the patient had a primary care provider, this intervention included a scripted follow-up call administered by a primary care or surgical clinic nurse.

Non-scripted Methodology

For this review, identifying studies specifically utilizing a non-scripted technique was difficult. Following various searches for scholarly literature across numerous databases, it was noted that a non-scripted phone call is a less explored area. Most follow-up calls involved some form of scripting or a questionnaire to direct the conversation.

Discussion

Twenty-two articles were examined to identify strategies commonly used in patient telephone follow-up following hospital discharge. These were then analyzed to determine the existence of a correlation between the follow-up technique with patient satisfaction rates and patient readmission rates as outcomes. Identifying-relationships between follow-up practices and patient outcomes is critical to ensuring best practices and promoting organizational success.

Patient Satisfaction Rates

For this review, patient satisfaction is defined as positive patient feedback obtained through qualitative data collection methods. Patient satisfaction rates are a key quality indicator. Many studies noted that patients were pleased to receive a formal follow-up call (Chen et al., 2021; Luciani-McGillivray et al., 2020; Woods et al., 2019). Results also demonstrated that patients who experienced the RED-S intervention consisting of pre- and post-discharge education along with a post-discharge follow-up phone call gave more positive feedback regarding their discharge experience compared to the patients who received traditional discharge instructions and follow-up (Du et al., 2021; Mitchell, 2022). In one study, the average patient satisfaction score regarding discharge was 8.56 out of 10, with a standard deviation of 1.93 after

implementing a RED toolkit discharge and follow-up technique (Mitchell, 2022). The overall patient satisfaction rate increased from 33% preintervention to 59.2% postintervention.

On comparing the effect of different strategies on patient satisfaction, Hallet et al. (2020) found no significant difference in patient satisfaction rates when comparing a nurse-driven follow-up call to an SMS follow-up. Similarly, no difference was noted in patient satisfaction rates when patients did not receive a follow-up call as compared to receiving a post-op follow up call from nonmedical personnel (Kim et al., 2021). Ooi et al. (2021) had similar findings in the early post-discharge phase; however, telephone follow-up calls provided in the 90–100-day post-discharge phase were associated with increased patient satisfaction rates as compared to an automated message. Berardinelli and Bernhofer (2020) reported no difference in patient confidence levels when comparing the receipt of initial instructions at the time of discharge to a follow-up phone call that used a template.

Hospital Readmission Rates

Hospital readmission rates are another primary focus of healthcare organizations due to their impact on reimbursement rates, patient census, and staffing demands. In a study conducted by Luciani-McGillivray et al. (2020), a nurse-driven follow-up phone call delivered within 24 to 48 hours of ED discharge decreased 7-day revisit rates from 8.6% to 4.5% ($p < 0.001$). Coffey et al.'s (2019) systematic review revealed significant evidence demonstrating that patient education, specifically when delivered via a nurse-driven follow-up call, was directly correlated with reduced hospital readmission rates. This systematic review also found that reduced readmission rates correlated with the implementation of electronic discharge systems administered by the acute and primary care settings. Lovasik et al. (2020) and Mwachiro et al. (2019) found similar results, as in these studies, 30-day readmission rates decreased significantly following the implementation of an APRN-driven follow-up intervention. Woods et al.'s (2019) systematic review noted discrepancies in such correlations across various studies. Depending on the study strength and the readmission period studied, a more significant impact was made on readmission rates during the more acute period than readmissions after 30 or more days. van Loon-van Gaalen et al. (2021) also demonstrated no distinct differences in 30-day hospital/ED readmission rates in elderly patients greater than 70 years old receiving a nurse-driven follow-up call following discharge from the ED as compared to those receiving a scripted patient satisfaction survey.

The RED toolkit was used for patient follow-up post-discharge. Gardner et al. (2020) determined that patients at facilities that utilized a RED discharge technique had a 1.7% lower average 30-day readmission rate compared to a control group without access to this discharge technique. Additionally, 60-day and 90-day readmission rates were lower for the intervention group by 2% and 0.8%, respectively. The readmission rates in facilities where the RED toolkit was implemented also decreased following the implementation of this strategy. These findings support those of Mitchell (2022), whose study found that only one out of 30 patients (3.3%) experienced a 30-day readmission. Similarly, following the implementation of the RED toolkit discharge and follow-up, only one participant had an ED visit within 30 days post-discharge.

The impact of the application of an extended SMS follow-up intervention was also identified in one study. This intervention resulted in a 41% reduction of acute care utilization within 30 days post-discharge at the intervention practice compared to the control practice ($p = 0.02$; Bressman et al., 2022). At the intervention practice, ED readmission decreased from 20.3% to 16.5% following the intervention. The odds of 30-day readmission were 55% lower at the intervention practice ($p = 0.01$).

The literature consistently identifies factors impacting readmission rates and barriers to receiving follow-up interventions. Hoyer et al. (2021) identified factors such as older age, male gender, Black race, and lower socioeconomic status, which are associated with higher 30-day and higher anticipated readmission rates. Black race, lower socioeconomic status, and higher readmission risk revealed barriers to receiving various prevention interventions such as a follow-up telephone contact (Hallet et al., 2020; Hendrickson et al., 2020; Hoyer et al., 2021).

Overall, improvement was found with post-discharge telephone follow-up compared to no follow-up. This finding was specifically true regarding patient readmission rates. However, there are no consistent findings that one follow-up method is more beneficial than another regarding patient readmission outcomes or satisfaction rates.

Limitations

Some limitations of this review include the need for more research about the utilization and impact of SMS and automated message systems on post-discharge follow-up. This lack of information and research predisposes the findings of this review to bias related to this specific topic. Two of the articles in this review, both randomized control studies, also presented conflicting information regarding the impact of nurse-driven telephone follow-up on patient

readmission rates, specifically 30-day readmission rates. Although it utilizes a standardized follow-up call, the RED discharge technique also involves other evidence-based follow-up techniques such as pre-discharge education, care plan development, and medication reconciliation, with little information in the literature as to which of these interventions makes the greatest impact. Despite a lack of variation amongst follow-up techniques as related to overall patient satisfaction scores, provision of resources, increased discharge instruction compliance, and reduction of discharge anxiety are consistent themes resulting from efficient and effective patient discharge (Chen et al., 2021; Du et al., 2021; Kim et al., 2021; Ramalingam et al., 2022; Woods et al., 2019). Another primary limitation of this review is the need for more information and research related to non-scripted methodologies. An extensive literature review determined that the term *non-scripted* is not an area that is researched. Ultimately, there are no identifiable data related to this technique in post-discharge patient follow-up.

Another primary area of focus is the impact of age, race, and various social determinants on post-discharge care and follow-up. These factors may influence follow-up success and readmission rates (Hallet et al., 2020; Hendrickson et al., 2020; Hoyer et al., 2021). Such information demonstrates a need for healthcare facilities to identify and account for such factors when creating discharge plans and follow-up care. Stratifying findings based on the patient's primary language was not discussed in this review. These factors also pose a unique problem for facilities seeking to standardize discharge follow-up for efficiency while providing patient-centered discharge follow-up for efficacy.

Additionally, this review is conducted by one reviewer. Using multiple reviewers may enhance the interrater reliability of the findings drawn from this review. Publications in languages other than English were not included in this review, limiting the cross-cultural applicability of the findings and the responses by those families when a call is initiated. Language barriers between the caller and recipient may result in not answering or not returning the call.

Implications for Practice/Future Work

Techniques such as nonmedical personnel and SMS follow-up may act as beneficial adjuncts to traditional nurse-driven follow-up. Supplementation of a nurse-driven follow-up program with a scripted technique at 24–48 hours post-discharge along with SMS or trained nonmedical personnel's extended follow-up may be best practice to reduce readmissions,

improve patient satisfaction, and reduce costs. Further research should also be conducted into the benefits of this technique as it relates not only to patient outcomes but also to health care costs.

Specific care should also be considered for health equity in future research related to post-discharge patient follow-up. Some studies suggest direct correlations between specific ages, races, and other social demographics and patient follow-up success. Further research should be conducted to identify follow-up techniques most effective in these at-risk populations. The cultural and linguistic competencies of the caller in congruence with patients should also be examined to ensure ethnic equality and access amongst diverse patient groups.

Conclusion

The literature was examined for association of the use of different modalities of telephone follow-up, including calls by a registered nurse/advanced practice nurse, or trained nonmedical personnel, communication via automated short messaging system (SMS), and scripted or unscripted methodology, with patient outcomes measured according to patient satisfaction and readmission rates. This analysis found that scripted phone calls may benefit all follow-up calls but are seemingly necessary for nonmedical personnel. Evidence also showed that ultimately, nonmedical personnel and SMS/automated messaging follow-up techniques may act as cost- and time-effective adjuncts to the traditional nurse-driven follow-up. The literature further indicated that using SMS or trained nonmedical personnel could assist in preserving the time of nurses and APRNs to address medical follow-up problems rather than issues such as insurance and other nonmedical problems. Despite the lack of variation amongst techniques related to their overall impact on patient satisfaction scores, provision of resources, increased discharge instruction compliance, and reduced discharge anxiety are consistent outcomes resulting from efficient and effective patient discharge.

Regarding patient outcomes, improvement was found with post-discharge follow-up; however, there are no consistent findings that one follow-up method is more beneficial than another. Therefore, the impact of the various methods on healthcare costs should be considered when seeking to identify the best practices. Follow-up methods must also account for health equity and may need to be personalized to each patient.

References

- Agency for Healthcare Research and Quality. (2013, March). *Re-engineered discharge (RED) toolkit*. <https://www.ahrq.gov/patient-safety/settings/hospital/red/toolkit/index.html>
- Aloy-Prósper, A., Pellicer-Chover, H., Balaguer-Martínez, J., Llamas-Monteagudo, O., & Peñarrocha-Diago, M. (2020). Patient compliance to postoperative instructions after third molar surgery comparing traditional verbally and written form versus the effect of a postoperative phone call follow-up a: A randomized clinical study. *Journal of Clinical and Experimental Dentistry*, 12(10), e909–e915. <https://doi.org/10.4317/jced.56680>
- Beauvais, B., Whitaker, Z., Kim, F., & Anderson, B. (2022). Is the hospital value-based purchasing program associated with reduced hospital readmissions? *Journal of Multidisciplinary Healthcare*, 15, 1089–1099. <https://doi.org/10.2147/JMDH.S358733>
- Berardinelli, A., & Bernhofer, E. I. (2020). Postsurgical follow-up phone calls: Worth the investment? *Journal of PeriAnesthesia Nursing*, 35(6), 665–670. <https://doi.org/10.1016/j.jopan.2020.03.014>
- Bressman, E., Long, J. A., Honig, K., Zee, J., McGlaughlin, N., Jointer, C., Asch, D. A., Burke, R. E., & Morgan, A. U. (2022). Evaluation of an automated text message–based program to reduce use of acute health care resources after hospital discharge. *JAMA Network Open*, 5(10), e223829. <https://doi.org/10.1001/jamanetworkopen.2022.38293>
- Centers for Medicare & Medicaid Services. (2023, February 23). *Hospital readmissions reduction program (HRRP)*. <https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program>
- Chen, J., Wijesundara, J. G., Patterson, A., Cutrona, S. L., Aiello, S., McManus, D. D., McKee, M. D., Wang, B., & Houston, T. K. (2021). Facilitators and barriers to post-discharge pain assessment and triage: A qualitative study of nurses’ and patients’ perspectives. *BMC Health Services Research*, 21(1). <https://doi.org/10.1186/s12913-021-07031-w>
- Coffey, A., Leahy-Warren, P., Savage, E., Hegarty, J., Cornally, N., Day, M. R., Sahn, L., O’Connor, K., O’Doherty, J., Liew, A., Sezgin, D., & O’Caoimh, R. (2019). Interventions to promote early discharge and avoid inappropriate hospital (re)admission: A systematic review. *International Journal of Environmental Research and Public Health*, 16(14). <https://doi.org/10.3390/ijerph16142457>
- Du, R. Y., Shelton, G., Ledet, C. R., Mills, W. L., Neal-Herman, L., Horstman, M., Trautner, B., Awad, S., Berger, D., & Naik, A. D. (2021). Implementation and feasibility of the re-

- engineered discharge for surgery (RED-S) intervention: A pilot study. *Journal for Healthcare Quality*, 43(2), 92–100. <https://doi.org/10.1097/jhq.0000000000000266>
- Gardner, R. L., Pelland, K., Youssef, R., Morphis, B., Calandra, K., Hollands, L., & Gravenstein, S. (2020). Reducing hospital readmissions through a skilled nursing facility discharge intervention: A pragmatic trial. *Journal of the American Medical Directors Association*, 21(4), 508–512. <https://doi.org/10.1016/j.jamda.2019.10.001>
- Hallet, C. O., Lois, F. J., Warner, D. O., Jastrowicz, J. A., Joris, J. L., & Brichant, J. F. (2020). Short message service as a tool to improve perioperative follow-up of surgical outpatients: A before-after study. *Anaesthesia, Critical Care & Pain Medicine*, 39(6), 799–805. <https://doi.org/10.1016/j.accpm.2020.02.007>
- Harrison, J. D., Sudore, R. L., Auerbach, A. D., Shah, S., Oreper, S., Wheeler, M. M., & Fang, M. C. (2022). Automated telephone follow-up programs after hospital discharge: Do older adults engage with these programs? *Journal of the American Geriatrics Society*, 70(10), 2980–2987. <https://doi.org/10.1111/jgs.17939>
- Hendrickson, S. B., Simske, N. M., DaSilva, K. A., & Vallier, H. A. (2020). Improvement in outpatient follow-up with a postdischarge phone call intervention. *The Journal of the American Academy of Orthopaedic Surgeons*, 28(18), e815–e822. <https://doi.org/10.5435/JAAOS-D-19-00132>
- Hoyer, E. H., Golden, B., Dougherty, G., Richardson, M., Lepley, D., Leung, C., Deutschendorf, A., Brotman, D. J., & Stewart, R. W. (2021). The paradox of readmission prevention interventions: Missing those most in need. *The American Journal of Medicine*, 134(9), 1142–1147. <https://doi.org/10.1016/j.amjmed.2021.04.006>
- Kim, J. K., Lee, M. J., Chua, M. E., Ming, J. M., Lorenzo, A. J., Farhat, W. A., Bagli, D. J., Papanikolaou, F., & Koyle, M. A. (2021). Do post-operative phone calls enhance family satisfaction and outcomes after outpatient pediatric urological surgeries? A prospective study. *Pediatric Surgery International*, 37(1), 161–167. <https://doi.org/10.1007/s00383-020-04770-5>
- Leconte, D., Beloeil, H., Dreano, T., & Ecoffey, C. (2019). Post ambulatory discharge follow-up using automated text messaging. *Journal of Medical Systems*, 43(217). <https://doi.org/10.1007/s10916-019-1278-5>

- Lovasik, B. P., Blair, C. M., Little, L. A., Sellers, M., Sweeney, J. F., & Sarmiento, J. M. (2020). Reduction in post-discharge return to acute care in hepato-pancreatobiliary surgery: Results of a quality improvement initiative. *Journal of the American College of Surgeons*, 231(2), 231–238. <https://doi.org/10.1016/j.jamcollsurg.2020.03.034>
- Luciani-McGillivray, I., Cushing, J., Klug, R., Lee, H., & Cahill, J. E. (2020). Nurse-led call back program to improve patient follow-up with providers after discharge from the emergency department. *Journal of Patient Experience*, 7(6), 1349–1356. <https://doi.org/10.1177/2374373520947925>
- Mitchell, K. (2022). Impact of reengineered discharge toolkit on patients undergoing total joint surgeries. *Rehabilitation Nursing*, 47(4), 121–128. <https://doi.org/10.1097/RNJ.0000000000000375>
- Mwachiro, D. M., Baron-Lee, J., & Kates, F. R. (2019). Impact of post-discharge follow-up calls on 30-day hospital readmissions in neurosurgery. *Global Journal on Quality and Safety in Healthcare*, 2(2), 46–52. https://doi.org/10.4103/jqsh.jqsh_29_18
- Ooi, G., Schwenk, E. S., Torjman, M. C., & Berg, K. (2021). A randomized trial of manual phone calls versus automated text messages for peripheral nerve block follow-ups. *Journal of Medical Systems*, 45(1). <https://doi.org/10.1007/s10916-020-01699-z>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372(71). <https://doi.org/10.1136/bmj.n71>
- Patel, P. R., & Bechmann, S. (2022, January). *Discharge planning*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK557819/>
- Ramalingam, S., Alotaibi, O., Alqudairy, Z., Alnutaifi, A., & Alotaibi, A. (2022). Effectiveness of phone call follow-ups in improving patient compliance to post-extraction instructions: A cross-sectional study. *Cureus*, 14(11), e31499. <https://doi.org/10.7759/cureus.31499>
- Tomlinson, J., Cheong, V. L., Fylan, B., Silcock, J., Smith, H., Karban, K., & Blenkinsopp, A. (2020). Successful care transitions for older people: A systematic review and meta-analysis of the effects of interventions that support medication continuity. *Age and Ageing*, 49(4), 558–569. <https://doi.org/10.1093/ageing/afaa002>

- Toronto, C. E., & Remington, R. (2020). *A step-by-step guide to conducting an integrative Review*. Springer.
- van Loon-van Gaalen, M., van der Linden, M. C., Gussekloo, J., & van der Mast, R. C. (2021). Telephone follow-up to reduce unplanned hospital returns for older emergency department patients: A randomized trial. *Journal of the American Geriatrics Society*, 69(11), 3157–3166. <https://doi.org/10.1111/jgs.17336>
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>
- Woods, C. E., Jones, R., O’Shea, E., Grist, E., Wiggers, J., & Usher, K. (2019). Nurse-led postdischarge telephone follow-up calls: A mixed study systematic review. *Journal of Clinical Nursing*, 28(19-20), 3386–3399. <https://doi.org/10.1111/jocn.14951>
- University of Michigan Library. (2022, November 17). *Levels of evidence*. <https://guides.lib.umich.edu/c.php?g=282802&p=1888246>