

Marquette University

e-Publications@Marquette

---

College of Nursing Faculty Research and  
Publications

Nursing, College of

---

11-2020

## Nursing Discharge Teaching for Hospitalized Older People: A Rapid Realist Review

Joanie Pellet  
*University of Lausanne*

Marianne E. Weiss  
*Marquette University, marianne.weiss@marquette.edu*

Joachim Rapin  
*University of Montreal*

Cecile Jaques  
*University of Lausanne*

Cédric Mabire  
*University of Lausanne*

Follow this and additional works at: [https://epublications.marquette.edu/nursing\\_fac](https://epublications.marquette.edu/nursing_fac)



Part of the [Nursing Commons](#)

---

### Recommended Citation

Pellet, Joanie; Weiss, Marianne E.; Rapin, Joachim; Jaques, Cecile; and Mabire, Cédric, "Nursing Discharge Teaching for Hospitalized Older People: A Rapid Realist Review" (2020). *College of Nursing Faculty Research and Publications*. 813.

[https://epublications.marquette.edu/nursing\\_fac/813](https://epublications.marquette.edu/nursing_fac/813)

Marquette University

**e-Publications@Marquette**

***Nursing Faculty Research and Publications/College of Nursing***

***This paper is NOT THE PUBLISHED VERSION; but the author's final, peer-reviewed manuscript.*** The published version may be accessed by following the link in the citation below.

*Journal of Advanced Nursing*, Vol. 76, No. 11 (October 5, 2020): 2885-2896. [DOI](#). This article is © Wiley and permission has been granted for this version to appear in [e-Publications@Marquette](#). Wiley does not grant permission for this article to be further copied/distributed or hosted elsewhere without the express permission from Wiley.

# Nursing Discharge Teaching for Hospitalized Older People: A Rapid Realist Review

**Joanie Pellet**

Institute of Higher Education and Research in Healthcare-IUFRS, University of Lausanne, Lausanne University Hospital, Lausanne, Switzerland

**Marianne Weiss**

Marquette University College of Nursing, Milwaukee, WI

**Joachim Rapin**

Faculty of Nursing, University of Montreal, Montreal, Quebec, Canada  
Lausanne University Hospital, Lausanne, Switzerland

**Cecile Jaques**

Medical Library, Lausanne University Hospital and University of Lausanne, Lausanne, Switzerland

**Cedric Mabire**

Institute of Higher Education and Research in Healthcare-IUFRS, University of Lausanne, Lausanne University Hospital, Lausanne, Switzerland  
Lausanne University Hospital, Lausanne, Switzerland

## Funding information:

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

## Abstract

### Aim

To develop, refine and put forward a programme theory that describes configurations between context, hidden mechanisms and outcomes of nursing discharge teaching.

### Design

Rapid realist review guided by Pawson's recommendations and using the Realist and Meta-narrative Evidence Syntheses: Evolving Standards.

### Data Sources

We performed searches in MEDLINE, Embase, CINAHL Full text, Google Scholar and supplementary searches in Google. We included all study designs and grey literature published between 1998-2019.

### Review Methods

We followed Pawson's recommended steps: initial programme theory development; literature search; document selection and appraisal; data extraction; analysis and synthesis process; presentation and dissemination of the revised programme theory.

### Results

We included nine studies and a book to contribute to the synthesis. We developed 10 context–mechanisms–outcome configurations which cumulatively refined the initial programme theory. These configurations between context, mechanisms and outcome are classified in four categories as follows: relevancy of teaching content; patients' readiness to engage in the teaching–learning process; nurses' teaching skills and healthcare team approach to discharge teaching delivery. We also found that some of the same contexts generated similar outcomes, but through different mechanisms, highlighting interdependencies between context–mechanisms–outcome configurations.

### Conclusion

This rapid realist review resulted in an explanatory synthesis of how discharge teaching works to improve patient-centred outcomes. The proposed programme theory has direct implications for clinical practice by giving meaning to the 'hidden' mechanisms used by nurses when they prepare patients to be discharged home and can inform curricula for nursing education.

### Impact

The essential components, process mechanisms, contexts and impacts of the nursing discharge teaching are not consistently or clearly described, explained or evaluated for effectiveness. This review uncovers underlying contexts and mechanisms in the teaching/learning process between patients and nurses. The resulting programme theory can guide nurse clinicians and managers towards improvements in conducting discharge teaching.

## 1 INTRODUCTION

Discharge preparation refers to a multi-faceted care process that aims to prepare patients and their families so that they can perform medical care and treatment and maintain their functional capacity and well-being at home after a hospitalization (Weiss et al., **2015**). Discharge preparation consists of three components: discharge planning, discharge coordination and discharge teaching (Weiss et al., **2015**). These processes are primarily the responsibility of nurses, and occur throughout the hospitalization and culminate in final preparations by the discharging nurse. Discharge teaching means educational interventions during the hospital stay that aim to prepare patients and their families to be discharged home. However, the evidence base for practice is currently limited to superficial description of discharge teaching interventions and offers little guidance on how to deliver it. Discharge teaching is a complex intervention and its effectiveness depends on mechanisms related to the specific context where the intervention is delivered. Therefore, for hospitalized patients to benefit from effective discharge teaching, a realist approach is necessary to shed a light on what happens at the relationship level between nurses and patients during the interactive teaching–learning process.

## 2 BACKGROUND

The findings of studies focusing on discharge teaching have furnished evidence that high quality of teaching is associated with better self-care practices postdischarge, increased patients' perceived readiness for discharge and decreased readmission rate, mortality and cost of care (Coleman, Parry, Chalmers, & Min, **2006**; Jack et al., **2009**; Jackevicius, Li, & Tu, **2008**; Kang, Gillespie, Tobiano, & Chaboyer, **2018**; Koelling, Johnson, Cody, & Aaronson, **2005**). Conversely, insufficient discharge teaching has been associated with adverse events after discharge such as medication errors or increased hospital readmission rates (Corbett, Setter, Daratha, Neumiller, & Wood, **2010**; Forster et al., **2004**; Forster, Murff, Peterson, Gandhi, & Bates, **2003**; Jackevicius et al., **2008**; Newby, Dobesh, & Ashen, **2011**). Despite this available evidence, most patients discharged from hospital lack information on the management of their health conditions at home, highlighting a gap in discharge teaching (Pellet, Camponovo, Gunalingami, & Mabire, **2020**). This issue could be explained by a discrepancy between professionals' beliefs that they address patients' needs through discharge teaching and the content relevance and adequacy of the way teaching is provided from patients' perspectives (Foss & Hofoss, **2011**; Maloney & Weiss, **2008**; Rothberg et al., **2010**). This is particularly important for older patients as their health risk and burden of care increase as their resources and capacity to cope diminish (Shippee, Shah, May, Mair, & Montori, **2012**). This imbalance complicates the nurse's decisions about the content and method of teaching for older patients discharged home.

Currently, research and practice-based evidence about discharge teaching is primarily focused on disease-specific content elements with recommendations about delivering teaching presented as practice guidelines (Lefèvre et al., **2014**). A more general understanding of the fundamental context and mechanisms of effective discharge teaching is needed. Lack of clear specification of these fundamental elements of effective discharge teaching makes the transfer of research knowledge into clinical practice difficult. (Gonçalves-Bradley, Lannin, Clemson, Cameron, & Shepperd, **2016**; Mabire, Dwyer, Garnier, & Pellet, **2016, 2018**; Shepperd et al., **2013**; Zhu, Liu, Hu, & Wang, **2015**). Furthermore, lack of information on what practically constitutes discharge teaching makes it problematic to educate

and train nurses to deliver this intervention (Bergh, Karlsson, Persson, & Friberg, **2012**; Friberg, Granum, & Bergh, **2012**).

Realist reviews are designed to develop, refine and put forward programme theories that describe configurations between context, hidden mechanisms and outcomes (CMO) of nursing care processes. Realist reviews have a different understanding of causality than the model underpinning clinical trials where A affects B due to the experiment (Pawson, Greenhalgh, Harvey, & Walshe, **2005**). Causality underpinning realism assumes that the outcomes between two events result from underlying or 'hidden' mechanisms connecting these events and the context where they occur (Pawson et al., **2005**). Understanding how nursing interventions such as discharge teaching work is inherently complex. These interventions take place in variable contexts and produce outcomes that depend on context features, multiple interpersonal relationships and individual characteristics of both patients and nurses. We cannot therefore ignore the influence of these different elements when trying to determine the effectiveness of discharge teaching as a nursing intervention. Context was defined in this review as the micro level setting of the patient–nurse relationship where a discharge teaching intervention takes place. Mechanisms were defined as hidden and not directly measurable processes operating during the teaching delivery in the relationship between nurse and patient and that generate patient outcomes. Outcomes were defined as patient-centred outcomes related to discharge teaching and resulting from the interaction of context and mechanisms. The CMO configurations identify the causal links between context, mechanism and outcome. The articulation of the CMOs form a programme theory, commonly defined as the assumptions that explain how, why and in which conditions the intervention is expected to reach its objectives (Emmel, Greenhalgh, Manzano, Monaghan, & Dalkin, **2018**).

## 3 THE REVIEW

### 3.1 Aim

The overarching research question guiding this review was 'What are the underlying mechanisms involved in nursing discharge teaching interventions for hospitalized patients discharged home and how does context influence them'? Of particular interest were multimorbid older adults for whom adverse outcomes of poor discharge preparation have been well documented, including medication adherence, readmission or problems after discharge (Forster et al., **2004**; Jack et al., **2009**; Mistiaen, Francke, & Poot, **2007**).

### 3.2 Design

For this review of discharge teaching, we used the rapid realist review method as proposed by Saul (**2013**). A rapid realist review incorporates a realist approach to knowledge synthesis on emerging issues where there is limited time and resources. This method merges the theory specification goal of a realist review with boundaries similar to a scoping review, focusing on explicating theory-driven, contextually relevant interventions to achieve specific patient outcomes (Saul, **2013**). This review was guided by Pawson's recommendations and reporting standards follow the Realist and Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES) (Wong, Greenhalgh, Westhorp, Buckingham, & Pawson, **2013**). The protocol for the review was published in PROSPERO (CRD42018110157).

### 3.3 Search methods

#### 3.3.1 PHASE 1: Initial programme theory development

The initial programme theory was elicited using an iterative programme theory searching. This initial search was conducted in relevant academic databases, Embase.com, CINAHL Full text (EBSCO), ProQuest Dissertations & Theses and Google Scholar to retrieve theories or frameworks that conceptualize discharge teaching or patient teaching to sketch an initial programme theory. Existing theories and models were selected on the basis of their explanatory power for uncovering what mechanisms and in which contexts these mechanism might work to make discharge teaching effective (Shearn, Allmark, Piercy, & Hirst, **2017**).

#### 3.3.2 PHASE 2: Refining the programme theory

Searches were conducted in MEDLINE (OVID SP), Embase.com, CINAHL Full text (EBSCO) and Google Scholar with supplementary searches in Google (Supplementary material **1**). We targeted studies reporting comprehensive discharge teaching interventions or elements of interventions, given or coordinated by a nurse for older adults and patients discharged home. We included all study designs and grey literature published between 1998 and 2019 in English or in French. Literature search was an iterative process. As we progressed with the literature search, we judged that the searches carried out were not likely to have located the sources needed to shed light on any aspect of context, mechanisms and outcomes. For this reason, new elements of the initial programme theory were included, and other elements were excluded to refine search strategies. Backward citation tracking was also used to find relevant papers.

We also conducted five interviews with experts in older adult care. The aim was to elicit general assumptions on discharge teaching and gather their feedback on the initial programme theory. An interview guide was developed according to the starter set of questions developed by Westhorp and Manzano (**2017**) and Manzano (**2016**). We first asked them questions for example, about how they define discharge teaching, how and when it should be delivered, how it should be adapted to patients' characteristics and what are the targeted outcomes. At the end of the interview, we presented them the outline of the initial programme theory and explained that it was a modelling resulting from the articulation between several models and theory. Then we asked them to look at it and think out loud. Expert 1 was a physician and professor of geriatric medicine. Expert 2 was a clinical nurse specialist in therapeutic patient education. Expert 3 was a former director of a home care service who led a project on management of hospital discharge. Professional 1 was a unit nurse manager, responsible for an intensive rehabilitation programme at home after hospitalization. Professional 2 was a nurse manager in a medicine department, with a particular interest in improving patient teaching in acute care units. This nurse had also carried out a project on structuring information/teaching for patients before discharge.

### 3.4 Selection and appraisal of documents

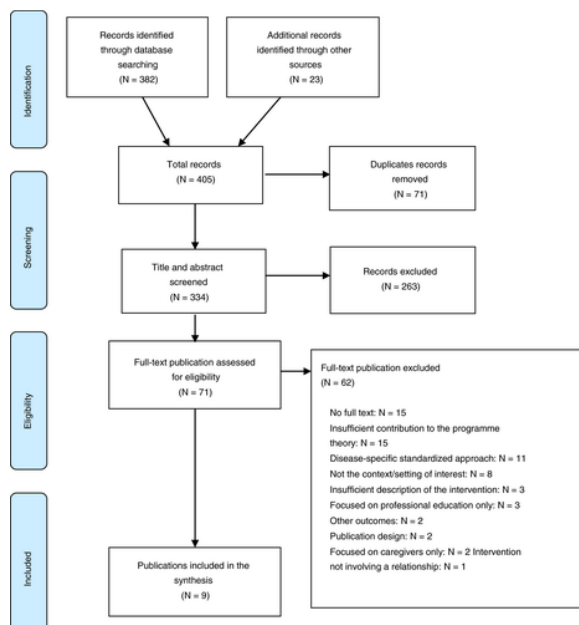
One research team member (JPE) screened titles and abstracts for potentially relevant articles. An appraisal and extraction form for full-text reviews was developed and tested by two research team members (JPE & JRA) on approximately 1% of articles. Full texts were retrieved and screened to determine relevance for the theory building and rigour of the methods used. The first part of the extraction form was used to record the inclusion criteria described above (did the article meet them or

not?), relevance assessment (could the article contribute to testing or building the programme theory?) and rigour (the credibility and reliability of the methods used to generate these data). In the second part of the form, we recorded the decision to include or exclude the publication from the review depending on whether it met the inclusion criteria and on the extent to which it sufficiently informed the potential hidden mechanisms (relevance & rigour). Reasons for exclusion were recorded.

### 3.5 Search outcomes

The search in Phase 1 for programme theories resulted in 108 publications, among which 10 models and six theories of interest for patient teaching have been identified (Supplementary material 2). Five theories and frameworks were selected to inform the initial programme theory development using criteria proposed by Shearn et al. (2017) for developing initial programme theories for complex interventions.

The search for PHASE 2 (Refining the programme theory) resulted in 334 potentially relevant papers, after the removal of duplicates. The first title and abstract screening stage resulted in 71 papers for the full text screening stage. After applying the full-text inclusion criteria (relevance and rigour), 62 papers were excluded as they did not contain sufficient description of the intervention, the context or the potential mechanisms. A total of nine studies and a book were finally included to contribute to the realist synthesis (Figure 1; Bench, Heelas, White, & Griffiths, 2014; Decker et al., 2007; Driscoll, 2000; Gregor, 2001; Grimmer et al., 2006; Hahn-Goldberg, Jeffs, Troup, Kubba, & Okrainec, 2018; Hibbard & Tusler, 2007; Knier, Stichler, Ferber, & Catterall, 2015; London, 2010; Weiss et al., 2007).



**Figure 1** PRISMA flow chart [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

### 3.6 Data abstraction

One research team member (JPE) carried out the data extraction step using the third part of the appraisal and extraction form. Extracted data included study characteristics, intervention type, contextual factors, intervention activities, potential underlying mechanisms and outcomes. CMOs forming the initial programme theory were listed in the form and the data extracted from retrieved documents concerning one or more of these CMOs were reported. These data were classified

according to whether they gave information about the context, the hidden mechanism or the outcomes of the corresponding CMO. A final section of the extraction form was designed to record newly identified elements or indications about context, potential mechanisms and outcomes beyond what matched the initial CMOs. The research team regularly discussed the extraction results to increase transparency, ensure consistency and enable thoughtful feedback.

### 3.7 Synthesis

Analysis and synthesis were first undertaken by one study team member (JPE) who read selected papers several times. Explanatory elements retrieved from the papers were grouped according to the corresponding thematic parts of the discharge teaching initial programme theory; for instance, all patient characteristics reported as important to assess for discharge teaching were grouped into the category 'Assessment'. New thematic categories were created for elements or potential mechanisms that did not correspond to any predefined category of the programme theory. When information between studies were conflicting, priority was given to studies that described potential mechanisms in-depth (Jagosh et al., **2012**). The analysis resulted in the refinement of initial CMOs and the development of new CMOs emerging from retrieved data. Quotes from interviews transcripts were also used to underpin the CMO development. One study team member (CMA) conducted a critical analysis of the refined CMOs. Consensus was found on CMOs that were similar enough to be combined or the ones that could be encompassed in other CMOs. This process resulted in the refinement of final CMOs. Another study team member (MWE) reviewed the final CMOs and pointed out those where the meaning was unclear and those that could be further developed or needed to be formulated more explicitly.

## 4 RESULTS

### 4.1 PHASE 1: Initial programme theory

The five theories and frameworks selected to inform the development of the initial programme theory take place at the macro (structural concepts underlying the intervention), meso (activities of the intervention) and micro levels (relational issues between individuals). At the macro-level, the five A's (Assess, Advise, Agree Assist and Arrange) Behavior Change Model offers a structural model for sequencing of discharge teaching intervention elements and was used as a framework for the initial programme theory (Glasgow et al., **2002**). At the meso-level, the *Interactive Care Model* describes how to provide concrete actions within the five A's that may lead to patient's empowerment and engagement in the self-management of their health condition (Drenkard, Swartwout, Deyo, & O'Neil, **2015**). The *Theoretical Framework to Guide Patient/Family Teaching* is complementary as it is more micro level focused and has clear applicability on concrete actions that aim at operationalizing phenomena at macro- and meso-level such as patient engagement or self-management support (Mabire, Dwyer, Garnier, & Pellet, **2018**). The *Knowles' theory of problem-centred adult learning* is operationalized at the micro level through actions to change the way the discharge teaching is delivered (Knowles, **1984**). The principles of Knowles' theory are also linked to nurses teaching skills in the *Theoretical Framework to Guide Patient/Family Teaching* (Mabire et al., **2018**). Finally, the *Important Elements of Effective Discharge Teaching* suggest evidence-based practical strategies to enhance the quality of discharge teaching, such as patient-learning evaluation, motivational interviewing, motivation and self-efficacy (McBride & Andrews, **2013**). Taken together, efforts at initial



theory development generated a working list of 17 preliminary CMO configurations to be tested and refined as we proceeded with our realist synthesis (Supplementary material **3**).

## 4.2 PHASE 2: Refining the programme theory

### 4.2.1 *Document characteristics*

Characteristics of the included studies are described in Table **1**. The analysis resulted in the refinement of the initial 17 CMOs and the development of five new CMOs emerging from retrieved data. This process resulted in 10 final CMOs.

**Table 1.** Characteristics of included publications in Phase 2 refinement of the programme theory of discharge teaching

<b>Reference (Author, Date)</b>	<b>Type of study</b>	<b>Setting/ Participants</b>	<b>Objectives</b>	<b>Relevant results for the review</b>
Bench et al., 2014	Pilot randomized controlled trial	Two critical care units in a single National Health Service (NHS) Foundation Trust in Central London, which comprised a mixed medical, surgical and trauma patient population/ Participants with a mean age of 60 years, one-third suffered from a level 3 critical illness, 76% were discharged home	To test the feasibility and the value of a patient's personalized discharge summary which was designed to improve patient understanding of the treatment and better recall of information	Receiving a personalized discharge summary helped patients make sense of and accept their illness experience.
Decker et al., 2007	Qualitative study (focus groups)	Cardiac referral centre in the Kansas City area of the United States of America (USA)/ Cardiac patients aged 61 years old and more for the men, 44.5 years for women	To explore their preferences for involvement in decision-making	Temporal context emerged as a key determinant of the type of information desired and the change in preferences for involvement in decision-making.
Driscoll, 2000	Two-phase mixed method study	General medical and surgical wards of a medical centre in Melbourne, Australia/ Patients with a mean age of 63 years, two or more medical conditions, discharged home	To explore patients' and caregivers' perceptions of adequacy and use of information concerning postdischarge care received during their hospital stay	Receiving verbal and/or printed information on patients' activity level and potential complications after discharge decreased medical problems postdischarge. If caregivers are present when information are given, their anxiety decrease, and patients have fewer medical problems postdischarge
Gregor, 2001	Discussion paper	Mid-size tertiary care teaching hospital in eastern Canada/ 12 surgical nurses	To report findings from a study of teaching in nursing practice	Informal teaching by nurses is frequent and is a vital component of the ongoing patient care delivery. Six forms of exchange;

				asking questions, offering explanations, giving information, providing instructions, setting expectations for work to be done, demonstrating the correct performance of work.
Grimmer et al., 2006	Quasi-experimental study	Three tertiary hospitals in Australia/ patients with unplanned first admission for a medical condition, mean age 74 years	To test whether patients exposed to the Discharge Planning Checklist scored the quality of discharge planning processes and outcomes higher than control patients who had 'usual' discharge planning.	Better preparation for discharge by patients who used the checklist, particularly in the presence of a caregiver. Patients felt empowered because the checklist helped them to plan ahead to deal with practical issues of returning home, that they may otherwise not have considered.
Hahn-Goldberg et al., 2018	Qualitative study	Acute medical care wards at three Ontario, Canada hospitals/Patients discharged home and caregivers, mean age 72 years	To explore what determines patients understanding and recall of discharge instructions	Involvement of caregivers appeared to be crucial to patient understanding and recall of the instructions, by decoding information, asking for clarification and being a teammate with whom the patient follows instructions
Hibbard & Tusler, 2007	Reanalysis of data	Data from a telephone survey of randomly selected adults in the USA/ Patients with a mean age of 58 years, with chronic condition	To explore self-management behaviours more or less likely adopted at different stages of patient activation	For each level of activation there are disease-specific behaviours that tend to be adopted
Knier et al., 2015	Quantitative survey	Rehabilitation unit within a non-profit, regional healthcare delivery system in San Diego, California, USA/ 36 patients participated to the pre-intervention survey (mean age 55 years) and 31 to the	To evaluate a change project to a new interprofessional discharge planning and teaching process	Change towards a discharge process that encouraged patient and family engagement and empowerment improved the patient's perception of the overall quality of the discharge teaching

		postintervention survey (mean age 53 years)		and the delivery of the discharge teaching
London, 2016	Book	The book « No Time to Teach: The Essence of Patient and Family Education for Health Care Providers» provides healthcare professionals with the essentials to fit patient and family teaching into the limited time available for teaching. Content addressed how to assess, deliver and document patient teaching, use teaching opportunities and various teaching materials, address learning barriers and ensure a team-based approach to teaching.		
Weiss et al., 2007	Correlational, prospective and longitudinal study	Medical, surgical and cardiac units in an urban tertiary-level medical centre in the midwestern USA/ Adult medical-surgical patients, mean age 53 years	To identify what could promote patients' perceived readiness for hospital discharge	<p>The content and delivery of discharge teaching were positively associated with the discharge readiness</p> <p>Less rather than more content was positively associated with the perception of being ready to be discharged home</p> <ul style="list-style-type: none"> <li>-Tailored content of discharge teaching, which is highly dependent on nurses teaching delivery skills, makes the patient feel prepared to go back home.</li> </ul>

#### 4.2.2 CMO configurations

Supplementary material 4 presents the final 10 CMOs generated using the evidence from the literature review and panel's reflections. These 10 CMOs are grouped into four domains: (a) relevancy of teaching content; (b) nurses teaching skills; (c) patients' readiness to engage in the teaching–learning process; and (d) healthcare team approach to discharge teaching delivery. These domains appeared to be decisive elements for discharge teaching (Figure 2).

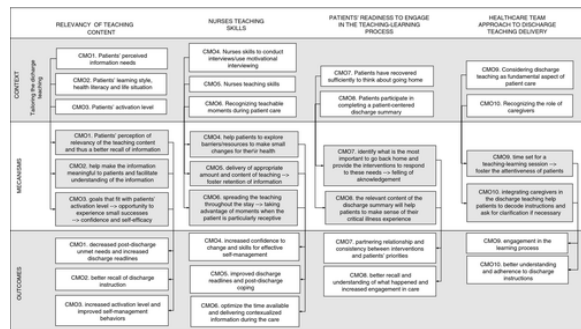


Figure 2 Discharge teaching programme theory

## 5 DISCUSSION

This rapid realist review led to the development of a programme theory that unpacks pattern configurations between context, hidden mechanism and outcomes triggered between nurses and patients during discharge teaching. The explanatory framework for discharge teaching resulting from this realist review is unique. The results give plausible explanations of main features influencing the way discharge teaching is delivered that result in positive outcomes. It was no surprise that our findings resonate with previous literature. However, the added value of the realist approach here was to deepen the understanding of these already known teaching approaches and resulting outcomes, by explaining how elements of context interact with mechanisms to produce the outcomes.

In our synthesis of the programme theory, we identified ten CMO configurations grouped within four domains. However, the influences of contexts and mechanisms were not exclusive to a single domain. Findings confirm, for example, that the importance of patients' individual characteristics and information needs assessment. While McBride and Andrews (2013) emphasized, in their framework for effective discharge education, the importance of prior assessment of patients' knowledge, our results show that this is more likely to not only help to tailor the teaching, but also make the content more relevant to patients. When teaching content makes sense for patients, it becomes easier for them to remember and use it at home, which could result in fewer postdischarge difficulties. Nurses' teaching skills appear to be a condition of the context to ensure discharge teaching quality (Mabire et al., 2018). By being trained to use different techniques and approaches to teaching, they can trigger mechanisms that will make patients to better be able to retain the information they receive and therefore make them feel more ready to return home with confidence in their ability to manage their health.

Our expert panel also pointed out some contextual specificities; in the Swiss healthcare system it is quite common that older people do not go straight home after hospitalization but have some time to recover either in a rehabilitation centre or in a nursing home. Therefore, patients' concern about discharge destination is very important during the hospital stay and while we know from the literature that the patient must be in sufficiently good health condition to engage in the teaching–learning

process, being reassured first of all about their discharge destination is also necessary. Only once they are reassured are they able to project themselves into the postdischarge period and discuss with their nurses how to address what their needs will be for the discharge transition.

Our findings also converge with a previous systematic review demonstrating the effectiveness of patient-centred discharge tools on patients' comprehension but not on adherence to discharge instructions (Okraïnec et al., **2017**). Our programme theory suggests how other interactions between elements of the context (other than discharge tools) and patient-level mechanisms could explain how and why adherence might be triggered (see CMO 10). In addition to comprehension and postdischarge coping outcomes, the programme theory also explains that a patient-centred discharge summary could help patients make sense of their illness experience. Finally, our panelists also highlighted that the core elements of the discharge teaching process are not sufficiently specified nor consistently considered as fundamental components of patient care. For example, it is often difficult in practice to include relatives, even if the literature shows that it is necessary. CMOs 9 and 10 related to the healthcare team approach to teaching delivery have the potential to explain to nurses not only that a specific time for teaching should be scheduled with the patient and family, but why it is desirable, what mechanisms can be triggered at individual patient level, which make it possible to produce the expected outcomes of teaching.

On examination of the outcomes of discharge teaching identified in the development of the CMOs, it became evident that more than one context/mechanism could contribute to the same outcomes. Four key outcomes emerged from multiple contexts/mechanisms: Readiness for discharge and postdischarge coping (CMOs 1 & 5), recall and understanding of discharge instructions (CMOs 2,8,10), patient activation and engagement (CMOs 3,4,8,9) and addressing patient priorities and individual needs (CMOs 6,7). Convergence of the outcomes from different contexts and mechanisms points to the dynamic and complex nature of discharge teaching encounters and the multiple teaching approaches that can be taken to achieve desired patient outcomes.

### 5.1 Strengths and limitations of the study

While some evidence-based approaches to patient teaching do exist, insufficient description of discharge teaching interventions tested in available studies encouraged us to look inside the black box of discharge teaching. In doing so, we uncovered previously hidden mechanisms that empower nurses to address context-specific patient needs for discharge teaching to achieve positive outcomes for the transition from hospital to home-based care. Using a realist approach was particularly relevant for developing an explanatory perspective rather than a simple description of discharge teaching as a nursing intervention. This is a major contribution to this field as the available literature is limited to recommendations about delivering teaching but without any specification about its content and process.

The perspectives of a panel of professionals and content experts gave insights about the current practice realities, which increased the relevance of the new programme theory. The resulting programme theory also has the advantage of providing a general perspective on teaching mechanisms that is not related to specific diseases but takes into account the complexity of needs that may be present with multiple chronic diseases. However, as our results are context dependent, the

generalizability of findings may be limited, unless similar mechanisms apply to other patient populations and healthcare settings.

Rapid realist reviews allow the generation of knowledge synthesis in a shorter time period, which has the inherent limitation of a scoping rather than comprehensive exploration of the literature and testing of the programme theory with a limited number of expert panelists. Resulting CMOs should therefore be considered as hypothesis developed from this limited available evidence. The results also suggest certain overlaps or redundancies between the same contexts, which generate similar outcomes but through different mechanisms. A more in-depth, realist process with extended literature inclusion would allow these redundancies to be explored and CMOs to be arranged in a less linear way. We also limited our focus to the relational aspects of teaching–learning encounters between nurses and patients, but other contextual factors such as organizational or policy questions should be taken into account in future research. Finally, we had initially planned to develop a programme theory on discharge teaching specifically for older and multimorbid people. We selected publications for their explanatory power in aligning contexts with mechanisms and outcomes. The contexts were focused on the context of the nurse–patient relationship within which discharge teaching took place. Unique characteristics or challenges with teaching of older and multimorbid adults did not emerge in the search for relevant publications using various age terms in the search. It is possible that specific challenges such as vision, hearing, memory, cognitive deficits, co-morbidities that might affect attention to learning or complex medical treatment regimens need to be searched specifically in relation to teaching to uncover specific mechanisms that supplement the CMOs identified for the broader ageing population. The absence of this literature is a limitation to the review.

## 6 CONCLUSION

This rapid realist review put forward an explanatory framework on what makes it possible, in the relationship between nurses and patients, to offer discharge teaching that has positive results for older patients. The explanatory perspective in the form of a programme theory uncovers what makes the alignment of context with discharge teaching mechanisms work for positive patient outcomes. The CMOs identified in this framework, while derived from studies of older adults, appear to be relevant for the broader population of patients being discharged from the hospital. In addition to proposing a programme theory, the results of this review offer direct insights for nurses in terms of clinical practice. The CMOs highlight, for example, what nurses should consider in tailoring teaching and how to provide an enabling environment for patients to better understand, remember and act on discharge instructions and feel confident about returning home and about their abilities to self-manage their health and functional abilities. Although patient education theories already inform nurses about these important factors, research on patient informational deficiencies and poor postdischarge outcomes points to the need for improvement in discharge teaching processes (Holland, Mistiaen, & Bowles, **2011**; Maloney & Weiss, **2008**; Pellet et al., **2020**). The programme theory produced through this review has the potential to enhance the clinical practice of discharge teaching. Providing these nurses with explanations of what happens for patients when they teach in a certain way, at a certain time and taking into account the elements highlighted in the results, has the potential to make the intervention more meaningful to those who deliver it. Such knowledge can also guide nurse managers towards operational improvements that will create healthcare environments more supportive of

patient teaching, act as recommendations to teaching establishments on improvements to nursing education via better discharge teaching mechanisms/processes and inform other researchers who are developing measures of effectiveness of discharge teaching. As we focused our review at the relationship level between nurses and patients, our recommendations for future literature reviews are to expand to other contextual factors such as organizational or policy questions to generate a broader understanding of the discharge teaching intervention. By generating an explanatory theory of discharge teaching, this review could also guide the development of new discharge teaching interventions that take into account the identified mechanisms.

## ACKNOWLEDGEMENTS

We sincerely thank Jolanda Elmers from the Medical Library of the Lausanne University Hospital and University of Lausanne for her help in the development of the literature search strategies.

## Conflict of Interest

The authors declare that they have no competing interests.

## Authors' Contributions

Joanie PELLET and Cedric MABIRE designed the study, developed the protocol and drafted the manuscript. Cecile JAQUES has developed search strategies. Marianne WEISS, Joachim RAPIN and Cedric MABIRE critically reviewed the manuscript for important intellectual and methodological content. All authors have agreed on the final version.

## Ethics approval and consent to participate

The Inquiry Assessment Board of the Lausanne University Hospital (CHUV) has agreed that the interviews used for this study should be conducted with experts and professionals from this hospital. The panelists signed a consent form before being interviewed.

## Supporting Information

Filename	Description
<a href="#">jan14511-sup-0001-SupInfo.docx</a>	Word document, 5 MB Supplementary Material

Please note: The publisher is not responsible for the content or functionality of any supporting information supplied by the authors. Any queries (other than missing content) should be directed to the corresponding author for the article.

## REFERENCES

- Bench, S. D., Heelas, K., White, C., & Griffiths, P. (2014). Providing critical care patients with a personalised discharge summary: A questionnaire survey and retrospective analysis exploring feasibility and effectiveness. *Intensive & Critical Care Nursing*, **30**(2), 69–76. <https://doi.org/10.1016/j.iccn.2013.08.007>
- Bergh, A.-L., Karlsson, J., Persson, E., & Friberg, F. (2012). Registered nurses' perceptions of conditions for patient education – focusing on organisational, environmental and professional cooperation aspects. *Journal of Nursing Management*, **20**(6), 758–770. <https://doi.org/10.1111/j.1365-2834.2012.01460.x>



- Coleman, E. A., Parry, C., Chalmers, S., & Min, S. J. (2006). The care transitions intervention: Results of a randomized controlled trial. *Archives of Internal Medicine*, **166**(17), 1822– 1828. <https://doi.org/10.1001/archinte.166.17.1822>
- Corbett, C. F., Setter, S. M., Daratha, K. B., Neumiller, J. J., & Wood, L. D. (2010). Nurse identified hospital to home medication discrepancies: Implications for improving transitional care. *Geriatric Nursing (New York, N.Y.)*, **31**(3), 188– 196. <https://doi.org/10.1016/j.gerinurse.2010.03.006>
- Decker, C., Garavalia, L., Chen, C., Buchanan, D. M., Nugent, K., Shipman, A., & Spertus, J. A. (2007). Acute myocardial infarction patients' information needs over the course of treatment and recovery. *Journal of Cardiovascular Nursing*, **22**(6), 459– 465. <https://doi.org/10.1097/01.JCN.0000297391.11324.0f>
- Drenkard, K., Swartwout, E., Deyo, P., & O'Neil, M. B. Jr (2015). Interactive care model: a framework for more fully engaging people in their healthcare. *Journal of Nursing Administration*, **45**(10), 503– 510. <https://doi.org/10.1097/nna.0000000000000242>
- Driscoll, A. (2000). Managing post-discharge care at home: An analysis of patients' and their carers' perceptions of information received during their stay in hospital. *Journal of Advanced Nursing*, **31**(5), 1165– 1173. [jan1372\[pil\]](https://doi.org/10.1046/j.1365-2646.2000.01372.x)
- Emmel, N., Greenhalgh, J., Manzano, A., Monaghan, M., & Dalkin, S. (2018). *Doing Realist Research*. SAGE Publications.
- Forster, A. J., Clark, H. D., Menard, A., Dupuis, N., Chernish, R., Chandok, N., ... van Walraven, C. (2004). Adverse events among medical patients after discharge from hospital. *Canadian Medical Association Journal*, **170**(3), 345– 349.
- Forster, A. J., Murff, H. J., Peterson, J. F., Gandhi, T. K., & Bates, D. W. (2003). The incidence and severity of adverse events affecting patients after discharge from the hospital. *Annals of Internal Medicine*, **138**(3), 161– 167. <https://doi.org/10.7326/0003-4819-138-3-200302040-00007>
- Foss, C., & Hofoss, D. (2011). Elderly persons' experiences of participation in hospital discharge process. *Patient Education and Counseling*, **85**(1), 68– 73. <https://doi.org/10.1016/j.pec.2010.08.025>
- Friberg, F., Granum, V., & Bergh, A. L. (2012). Nurses' patient-education work: Conditional factors - an integrative review. *Journal of Nursing Management*, **20**(2), 170– 186. <https://doi.org/10.1111/j.1365-2834.2011.01367.x>
- Glasgow, R. E., Funnell, M. M., Bonomi, A. E., Davis, C., Beckham, V., & Wagner, E. H. (2002). Self-management aspects of the improving chronic illness care breakthrough series: Implementation with diabetes and heart failure teams. *Annals of Behavioral Medicine*, **24**(2), 80– 87. [https://doi.org/10.1207/S15324796ABM2402\\_04](https://doi.org/10.1207/S15324796ABM2402_04)
- Gonçalves-Bradley, D. C., Lannin, N. A., Clemson, L. M., Cameron, I. D., & Shepperd, S. (2016). Discharge planning from hospital. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD000313.pub5>.
- Gregor, F. M. (2001). Nurses' informal teaching practices: Their nature and impact on the production of patient care. *International Journal of Nursing Studies*, **38**(4), 461– 470. [https://doi.org/10.1016/S0020-7489\(00\)00081-X](https://doi.org/10.1016/S0020-7489(00)00081-X)
- Grimmer, K., Dryden, L., Puntumetakui, R., Young, A., Guerin, M., Deenadayalan, Y., & Moss, J. (2006). Incorporating patient concerns into discharge plans: Evaluation of a patient-generated checklist. *Internet Journal of Allied Health Sciences & Practice*, **4**(2).

- Hahn-Goldberg, S., Jeffs, L., Troup, A., Kubba, R., & Okrainec, K. (2018). "We are doing it together"; The integral role of caregivers in a patients' transition home from the medicine unit. *PLoS One*, **13**(5), e0197831. <https://doi.org/10.12927/hcq.2016.24610>
- Hibbard, J. H., & Tusler, M. (2007). Assessing activation stage and employing a "next steps" approach to supporting patient self-management. *Journal of Ambulatory Care Management*, **30**(1), 2– 8. <https://doi.org/10.1097/00004479-200701000-00002>
- Holland, D. E., Mistiaen, P., & Bowles, K. H. (2011). Problems and unmet needs of patients discharged "home to self-care". *Professional Case Management*, **16**(5), 240– 250. <https://doi.org/10.1097/NCM.0b013e31822361d8>
- Jack, B. W., Chetty, V. K., Anthony, D., Greenwald, J. L., Sanchez, G. M., Johnson, A. E., ... Culpepper, L. (2009). A reengineered hospital discharge program to decrease rehospitalization: A randomized trial. *Annals of Internal Medicine*, **150**(3), 178– 187. <https://doi.org/10.7326/0003-4819-150-3-200902030-00007>
- Jackevicius, C. A., Li, P., & Tu, J. V. (2008). Prevalence, predictors, and outcomes of primary nonadherence after acute myocardial infarction. *Circulation*, **117**(8), 1028– 1036. <https://doi.org/10.1161/circulationaha.107.706820>
- Jagosh, J., Macaulay, A. C., Pluye, P., Salsberg, J., Bush, P. L., Henderson, J., ... Greenhalgh, T. (2012). Uncovering the benefits of participatory research: Implications of a realist review for health research and practice. *Milbank Quarterly*, **90**(2), 311– 346. <https://doi.org/10.1111/j.1468-0009.2012.00665.x>
- Kang, E., Gillespie, B. M., Tobiano, G., & Chaboyer, W. (2018). Discharge education delivered to general surgical patients in their management of recovery post discharge: A systematic mixed studies review. *International Journal of Nursing Studies*, **87**, 1– 13. <https://doi.org/10.1016/j.ijnurstu.2018.07.004>
- Knier, S., Stichler, J. F., Ferber, L., & Catterall, K. (2015). Patients' Perceptions of the Quality of Discharge Teaching and Readiness for Discharge. *Rehabilitation Nursing*, **40**(1), 30– 39. <https://doi.org/10.1002/rnj.164>
- Knowles, M. S. (1984). *Andragogy in action*. San Francisco: Jossey-Bass.
- Koelling, T. M., Johnson, M. L., Cody, R. J., & Aaronson, K. D. (2005). Discharge education improves clinical outcomes in patients with chronic heart failure. *Circulation*, **111**(2), 179– 185. <https://doi.org/10.1161/01.cir.0000151811.53450.b8>
- Lefèvre, T., d'Ivernois, J. F., De Andrade, V., Crozet, C., Lombrail, P., & Gagnayre, R. (2014). What do we mean by multimorbidity? An analysis of the literature on multimorbidity measures, associated factors, and impact on health services organization. *Revue D'épidémiologie Et De Santé Publique*, **62**(5), 305– 314. <https://doi.org/10.1016/j.respe.2014.09.002>
- London, F. (2010). *No time to teach: The Essence of Patient and Family Education for Healthcare Providers*, 2nd ed.. Atlanta: Pritchett & Hull Associates.
- Mabire, C., Dwyer, A., Garnier, A., & Pellet, J. (2016). Effectiveness of nursing discharge planning interventions on health-related outcomes in discharged elderly inpatients: A systematic review. *JBI Evidence Synthesis*, **14**(9), 217– 260. <https://doi.org/10.11124/jbisrir-2016-003085>
- Mabire, C., Dwyer, A., Garnier, A., & Pellet, J. (2018). Meta-analysis of the effectiveness of nursing discharge planning interventions for older inpatients discharged home. *Journal of Advanced Nursing*, **74**(4), 788– 799. <https://doi.org/10.1111/jan.13475>
- Maloney, L. R., & Weiss, M. E. (2008). Patients' Perceptions of hospital discharge informational content. *Clinical Nursing Research*, **17**(3), 200– 219. <https://doi.org/10.1177/1054773808320406>

- Manzano, A. (2016). The craft of interviewing in realist evaluation. *Evaluation*, **22**(3), 342– 360. <https://doi.org/10.1177/1356389016638615>
- McBride, M., & Andrews, G. J. (2013). The transition from acute care to home: a review of issues in discharge teaching and a framework for better practice. *Canadian Journal of Cardiovascular Nursing*, **23**(3), 18– 24.
- Mistiaen, P., Francke, A. L., & Poot, E. (2007). Interventions aimed at reducing problems in adult patients discharged from hospital to home: a systematic meta-review. *BMC Health Services Research*, **7**(47), <https://doi.org/10.1186/1472-6963-7-47>
- Newby, L., Dobesh, P., & Ashen, D. (2011). Key strategies to maximize adherence to secondary prevention therapies for coronary artery disease. Retrieved from [www.medscape.org/viewarticle/736196](http://www.medscape.org/viewarticle/736196).
- Okraïneç, K., Lau, D., Abrams, H. B., Hahn-Goldberg, S., Brahmhatt, R., Huynh, T., ... Bell, C. M. (2017). Impact of patient-centered discharge tools: A systematic review. *Journal of Hospital Medicine*, **12**(2), 110– 117. <https://doi.org/10.12788/jhm.2692>
- Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2005). Realist review—a new method of systematic review designed for complex policy interventions. *Journal of Health Services Research and Policy*, **10**(Suppl 1), 21– 34. <https://doi.org/10.1258/1355819054308530>
- Pellet, J., Camponovo, A., Gunalingami, N., & Mabire, C. (2020). Problèmes et besoins des personnes âgées après une hospitalisation. *La gazette médicale*(2).
- Rothberg, M. B., Sivalingam, S. K., Ashraf, J., Visintainer, P., Joelson, J., Kleppel, R., ... Schweiger, M. J. (2010). Patients' and cardiologists' perceptions of the benefits of percutaneous coronary intervention for stable coronary disease. *Annals of Internal Medicine*, **153**(5), 307– 313. <https://doi.org/10.7326/0003-4819-153-5-201009070-00005>
- Saul, J. E., Willis, C. D., Bitz, J., & Best, A. (2013). A time-responsive tool for informing policy making: Rapid realist review. *Implementation Science*, **8**(1), 103. <https://doi.org/10.1186/1748-5908-8-103>
- Shearn, K., Allmark, P., Piercy, H., & Hirst, J. (2017). Building realist program theory for large complex and messy interventions. *International Journal of Qualitative Methods*, **16**(1), 1– 11. <https://doi.org/10.1177/1609406917741796>
- Shepperd, S., Lannin, N. A., Clemson, L. M., McCluskey, A., Cameron, I. D., & Barras, S. L. (2013). Discharge planning from hospital to home. *Cochrane Database of Systematic Reviews*(1). doi:10.1002/14651858.CD000313.pub4.
- Shippee, N. D., Shah, N. D., May, C. R., Mair, F. S., & Montori, V. M. (2012). Cumulative complexity: A functional, patient-centered model of patient complexity can improve research and practice. *Journal of Clinical Epidemiology*, **65**(10), 1041– 1051. <https://doi.org/10.1016/j.jclinepi.2012.05.005>
- Weiss, M. E., Bobay, K. L., Bahr, S. J., Costa, L., Hughes, R. G., & Holland, D. E. (2015). A model for hospital discharge preparation: from case management to care transition. *Journal of Nursing Administration*, **45**(12), 606– 614. <https://doi.org/10.1097/nna.0000000000000273>
- Weiss, M. E., Piacentine, L. B., Lokken, L., Ancona, J., Archer, J., Gresser, S., ... Vega-stromberg, T. (2007). Perceived readiness for hospital discharge in adult medical-surgical patients. *Clinical Nurse Specialist*, **21**(1), 31– 42. <https://doi.org/10.1097/00002800-200701000-00008>
- Westhorp, G., & Manzano, A. (2017). Realist evaluation interviewing – A ‘Starter Set’ of Questions. Retrieved from: [http://www.ramesesproject.org/media/RAMESES\\_II\\_Realist\\_interviewing\\_starter\\_questions.pdf](http://www.ramesesproject.org/media/RAMESES_II_Realist_interviewing_starter_questions.pdf)

Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J., & Pawson, R. (2013). RAMESES publication standards: Realist syntheses. *Journal of Advanced*

*Nursing*, **69**(5), 1005– 1022. <https://doi.org/10.1111/jan.12095>

Zhu, Q. M., Liu, J., Hu, H. Y., & Wang, S. (2015). Effectiveness of nurse-led early discharge planning programmes for hospital inpatients with chronic disease or rehabilitation needs: A systematic review and meta-analysis. *Journal of Clinical Nursing*, **24**(19–

20), 2993– 3005. <https://doi.org/10.1111/jocn.12895>