



Journal of Clinical Epidemiology 105 (2019) 40-49

Journal of Clinical Epidemiology

# **ORIGINAL ARTICLE**

# The transitional risk and incident questionnaire was valid and reliable for measuring transitional patient safety from the patients' perspective

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#### Abstract

**Objective:** This study describes the development and validation of the Transitional Risk and Incident Questionnaire (TRIQ), which measures transitional patient safety from the patients' perspective.

**Methods:** The TRIQ was developed based on literature review, tested in the target group using a think-aloud procedure, and validated by a cross-sectional study among patients receiving health care at the interface between general practice and hospital care in two regions in the Netherlands. Exploratory factor analysis was performed, and internal consistency was assessed. The relationships between the occurrence of transitional safety incidents (TSIs) as measured by the TRIQ and relational continuity and those between TSI occurrence and overall rating of transitions were assessed.

**Results:** In total, 451 questionnaires were completed for analysis. The exploratory factor analysis provided a four-factor solution: (1) personal relation with general practitioner, (2) personal relation with hospital physician, (3) information exchange, and (4) treatment consistency. Internal consistency was good (composite reliability, 0.75-0.95). An experienced TSI was related to a poorer relational continuity both with the general practitioner and hospital and with a lower overall rating of all transitions.

**Conclusions:** The TRIQ is a valid and reliable questionnaire measuring transitional patient safety from the patients' perspective. © 2018 Elsevier Inc. All rights reserved.

Keywords: Patient safety; Patient; Survey; Transitional care; Discharge; Referral

## 1. Introduction

Patient safety incidents are common in health care at all levels, and safeguarding the patient from any unintended or unexpected incident is a major challenge for health-care professionals. To prevent safety incidents in patients who are treated concurrently by multiple physicians or in multiple settings, communication and handover of information between the professionals is vital [1]. As the patient is the only constant factor, he or she is the only one who could assess the entire patient journey and give feedback on the

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quality and safety of received care. Therefore, the patients' perception is essential in looking at transitional patient safety [2,3].

As patients report different safety issues than health-care professionals, excluding patients will lead to a biased view on transitional patient safety [4,5]. Because most interventions to improve patient safety are initiated from a professionals' perspective, they may not be fully tailored to the patients' needs, and as a result, they may only suboptimally affect patient outcomes [6].

Therefore, we need a patient-reported outcome measure (PROM) to accurately identify transitional patient safety issues and measure the effect of transitional safety interventions [7-9]. PROMs are available that measure related constructs to transitional safety such as continuity of care (a broader concept including continuity within a single organization) [10-13], one way transitions such as admission or discharge [14,15], or safety in one specific patient group such as cancer patients [16]. Yet, a PROM measuring the generic concept of patient safety in health-care transitions is not available.

Funding: This work was supported by the Dutch Ministry of Health, Welfare and Sports (VWS; grant number, 320698) and Achmea Healthcare (grant number, Z415).

Conflicts of interest: Authors have no other conflicts of interest to disclose.

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### What is new?

## Key findings

- The 'Transitional Risk and Incident Questionnaire' (TRIQ) is a valid and reliable questionnaire measuring transitional patient safety from the patients' perspective.
- The TRIQ consists of four dimensions: (1) personal relation with general practitioner, (2) personal relation with hospital physician, (3) information exchange, and (4) treatment consistency.

### What this adds to what was known?

- Patients with higher comorbidity levels had an increased risk of experiencing transitional safety incidents (TSIs).
- In theory, patients have the complete picture of the patient journey, but patients are not always able to adequately identify TSIs.

# What is the implication and what should change now?

• Using the TRIQ incorporating the patients perspective in identifying TSIs, providing input for quality improvement, and monitoring the effect of safety improving interventions.

The aim of this study was to describe the development and validation of the Transitional Risk and Incident Questionnaire (TRIQ) developed for measuring transitional patient safety from the patients' perspective.

### 2. Methods

### 2.1. Setting

This study is conducted in the context of the Transitional Incident Prevention Programme, a complex intervention study in the Netherlands aiming to improve transitional patient safety [17].

### 2.2. Questionnaire development and content validity

We defined transitional safety as any unintended or unexpected incident which could have or did lead to harm for one or more patients at transitions between care settings. As a first step in development of the TRIQ, we performed a literature study on frameworks related to transitional patient safety and PROMs assessing related concepts, that is, continuity of care, coordination of care, integrated care, self-care, patient satisfaction, discharge, and referral. We based our questionnaire on the conceptual framework for continuity of care by Reid et al. because its concepts are relevant for transitional safety as well [18]. Reid's framework identifies three different types of continuity of care: (1) relational continuity, (2) informational continuity, and (3) management continuity. Relational continuity encompasses the ongoing relationship between patient and health-care provider over time, informational continuity means that information on earlier events is available for present care delivery, and management continuity ensures that care received from different providers is linked in a coherent way [18]. Yet, the framework consists of continuity both within and between health-care settings. The aim of our questionnaire was to explicitly focus on continuity between distinct health-care settings and the outcome in terms of patient safety thereof, that is, the prevention of harm and occurrence of incidents between health-care settings (transitional patient safety). Therefore, we took Reid's framework as a basis for our questions. We considered informational and management continuity as vital for safe care transitions [18], but in case of our questionnaire, this occurs only when directed at safety in care transitions between health-care settings instead of within one health-care setting. We did not consider Reid's domain of relational continuity an aspect of transitional patient safety in itself. Yet, we included it in our questionnaire as we consider lack of relational continuity as a risk factor for transitional safety incidents (TSIs) [18]. Aller et al. developed a questionnaire measuring continuity of care across care levels, named the Cuestionario Continuidad Asistencial Entre Niveles de AtenciÓn (CCAENA) questionnaire based on Reid's framework, assessing care continuity across levels from the patients' perspective [10]. Although the concept of the CCAENA was closely related to our need for a questionnaire measuring transitional patient safety, we concluded that it did not fit our purpose. The CCAENA proved too extensive and was not suitable to the Dutch setting. Therefore, we developed a new questionnaire that among others includes parts of Aller's questionnaire which we adapted to the concept of transitional patient safety measuring harm and occurrence of incidents and applied it to the Dutch healthcare system.

In the next step, we used an iterative method to construct items and presented them to patient safety experts, healthcare professionals, and a patient panel. In the final development step, we performed a think-aloud process in which patients were interviewed and asked to think aloud when reading and answering the questions [19]. Interviews were audiotaped, and the interviewer registered reactions indicating difficulties in instructions and item wording or meaning. Patients were asked to comment on the length and completeness of the questionnaire. The initial questionnaire was adjusted twice during this process.

## 2.3. Content of the TRIQ questionnaire

The final version consisted of 24 items. Eight items assessed relational continuity on a four-point scale from Download English Version:

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