

# Chapter 5

## STRIPA:

### The Potential Usefulness of a Medical App

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#### ABSTRACT

*Polypharmic patients are patients who chronically use five or more medicines. The number of polypharmacy patients continues to increase even though it is a risk factor for morbidity and mortality. A medication review is an important measure to mitigate medication risks. It is known to effectively reduce the number of drug related problems per (polypharmic) patient. STRIP is a Dutch method to perform a structured medication review. Based on this method, the STRIPA(ssistent) tool is developed. However, whether or not this app is considered useful by the healthcare professional is not known yet. In order to assess this, a systematic literature study is conducted. In addition, an effectiveness study design is described. The results show that there is indeed a need for medication reviews and Dutch healthcare professionals are likely to adopt new technologies, an effectiveness study based on a randomized controlled trial is necessary to assess the effectiveness of STRIPA.*

#### INTRODUCTION

In the Netherlands around 10% of the pharmacy visitors are polypharmic patients, which mean they chronically use five or more medicines (KNMP, 2013). Research showed that the number of polypharmacy patients continues to increase and that it is a known risk factor for morbidity and mortality (Hajjar, Cafiero & Hanlon, 2007). In the Netherlands alone, polypharmacy costs society between 103 and 229 million euros (Zorginstituut Nederland, 2013). Polypharmacy can possibly lead to dangerous combinations of drugs, which can be harmful for the patients. Not only can certain drug-drug interactions be harmful, they can also neutralize the active substances in one another. The chronic use of multiple drugs increases patients' risks to experience adverse effects, under-prescription, overtreatment, and decreased drug adherence (Meulendijk et al., 2013). Besides that, using multiple drugs also leads to an increased

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chance of hospitalization (Meulendijk, 2012). Therefore it is of importance that general practitioners (GPs) scan for drug-drug interactions. This can be formally done via a periodic medication review, by which GPs together with pharmacists have to review their polypharmic patients' medicine use.

In the Netherlands there were two methods for medication reviews: the Prescribing Optimization Method (POM) and 'Gebruik-Indicatie-Veiligheid-Effectiviteit' (GIVE). There was a need for a unified method and that is why based on the POM method, STRIP (Systematic Tool to Reduce Inappropriate Prescribing) was developed (TPO, 2012). STRIP is a step-by-step method that aims at assisting GPs and pharmacists with determining the optimal medication for polypharmic patients (Meulendijks, 2013) and can be used in software for healthcare professionals. The rise of mobile technology brought exponential growth of software use by healthcare professionals (O'Hagan, 2012).

STRIPA, short for STRIP-Assistant, is a STRIP-based app for GPs and pharmacists to use when making a medication review for polypharmic patients. For these medication reviews STRIPA offers several functionalities:

- An overview of the suffered conditions, diseases and medication for each patient.
- Linking the prescribed medication to the associated diseases.
- Advice when to start new medication.
- Advice when to stop current medication.
- Linking side effects to the associated medication.
- Showing drug-drug interactions.
- Advice about medication dosage.

These functionalities will be further elaborated on in the STRIPA section.

In 2009 almost a third of all pharmacists did not do a single medication review (Inspectie voor de Gezondheidszorg, 2009). It is hypothesized that this is the case because it takes a lot of time for the pharmacists as well as for the GPs. STRIPA can help these healthcare professionals with making faster and more structured medication reviews. However, it is unknown if GPs and pharmacists see the potential benefits and are willing to adopt STRIPA as a support tool. Therefore the main research question for this paper is:

**RQ 1:** What is the potential usefulness of STRIPA for conducting medication reviews?

This research question will be answered based on several subquestions. First of all (i) 'why is medication reviewing important?'. Answering this question will lead to a better understanding of the field. The second sub question (ii) is 'what can STRIPA offer?'. Answering this questions will lead to a better understanding of the app. Sub question three (iii) is 'are there any apps similar to STRIPA?'. This will deepen the understanding about STRIPA and help positioning it within the market. The fourth sub question (iv) is 'how can an effectiveness study for STRIPA be designed?'. By designing an effectiveness study, a foundation for future research is built.

The remainder of this paper is structured as follows; in the next section a systematic literature review will be conducted in order to give a state-of-the-art overview of the current situation regarding medication reviews, drug-drug interactions, polypharmic patients and the usage of e-health by healthcare professionals. This will give an answer to the first sub question. In the third section STRIPA will be introduced, in order to give an in-depth understanding of the app and therefore answer sub question number two. In

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