



ORIGINAL ARTICLE

A reliable and valid index was developed to measure appropriate psychotropic drug use in dementia

Klaas van der Spek^{a,*}, Debby L. Gerritsen^a, Martin Smalbrugge^b,
Marjorie H.J.M.G. Nelissen-Vrancken^c, Roland B. Wetzels^a, Claudia H.W. Smeets^a,
Sytse U. Zuidema^d, Raymond T.C.M. Koopmans^a

^aDepartment of Primary and Community Care, Centre for Family Medicine, Geriatric Care and Public Health, Radboud University Medical Centre, Nijmegen Huispost 117 ELG, P.O. Box 9101, Nijmegen 6500 HB, The Netherlands

^bDepartment of General Practice and Elderly Care Medicine/EMGO + Institute for Health and Care Research, VU Medical Center, P.O. Box 7057, Amsterdam 1007 MB, The Netherlands

^cDutch Institute for Rational Use of Medicine, P.O. Box 3089, Utrecht 3502 GB, The Netherlands

^dDepartment of General Practice, University of Groningen, University Medical Center Groningen, HPC FA21, P.O. Box 196, Groningen 9700 AD

Accepted 18 March 2015; Published online xxxx

Abstract

Objectives: The aim of this study was to develop an index derived from the Medication Appropriateness Index (MAI) items that is suited for clinical studies evaluating appropriateness of psychotropic drug use (PDU) for neuropsychiatric symptoms (NPS) in patients with dementia in nursing homes and to test its reliability and validity.

Study Design and Setting: An expert panel reviewed the MAI items to develop items for appropriateness of PDU; a second, independent, expert panel determined content validity of the items. An interrater reliability study was conducted ($N = 54$), and a summated index score, based on weighted item scores, was developed to enhance the use in clinical studies. Construct validity was explored using a representative sample of 560 medical records.

Results: Five existing MAI items were used, the MAI item “indication” was adjusted, a new item “evaluation” was added, and scoring rules were based on guideline recommendations, to create the Appropriate Psychotropic drugs use In Dementia (APID) index. The second expert panel concluded that all items contributed to the construct “appropriateness.” All items and the summated index score had moderate to almost perfect interrater reliability (intraclass correlation coefficient for agreement, 0.577–1). The summated index score showed promising construct validity, for example, no multicollinearity issues were found.

Conclusion: The results of this study show that the APID index is reliable and valid for measuring appropriateness of PDU for NPS in dementia in nursing homes in clinical studies. © 2015 Elsevier Inc. All rights reserved.

Keywords: Appropriate; Psychotropic drug use; Dementia; Nursing home patients; Neuropsychiatric symptoms; Index development

1. Introduction

Psychotropic drugs (PDs) are frequently prescribed in nursing homes [1–4], in particular for the treatment of neuropsychiatric symptoms (NPS) [3,5], for example, agitation/aggression, psychosis, depression, and apathy [6].

Many different groups of PDs are prescribed for this purpose, that is, antipsychotics, anxiolytics, hypnotics,

antidepressants, anticonvulsants, and antedementia drugs [7]. Although PDs are frequently prescribed, their efficacy is limited [8,9], especially for the long term [10]. PDs are not only used frequently but also persistently, for a period longer than 3 months [11,12]. Given that antipsychotics prescribed for NPS in dementia should only be used for a period of 3 months [13] and anxiolytics and hypnotics for a period of 2–4 weeks [13], this indicates that antipsychotics, anxiolytics, and hypnotics in particular have inappropriate duration of therapy [7]. In addition, Finkers et al. [14] found that most of the patients in nursing homes have at least one drug prescribed of which the indication was unknown. These findings point at inappropriate use.

Funding: This study was funded by The Netherlands Organization for Health Research and Development (grant number: 113101005) (ZonMw).
Conflict of interest: None.

* Corresponding author. Tel.: +31641814811; fax: 0031243635120.

E-mail address: klaas.vanderspek@radboudumc.nl (K. van der Spek).

What is new?**Key findings**

- A research index is developed to measure appropriate psychotropic drug use (PDU) in nursing home patients with dementia, with moderate to almost perfect interrater reliability, and good construct validity.

What this adds to what was known?

- The newly developed index adds a method for medical file research in measuring appropriateness of PDU for neuropsychiatric symptoms in dementia.

What is the implication and what should change now?

- With this instrument, we are not only able to look at absolute prescription rates but also to its appropriateness, which helps clinicians to optimize and not just reduce PDU.

Furthermore, adverse drug events [15] and hospitalization have been related to inappropriate prescription [16,17]. Particularly, antipsychotics have been shown to cause adverse events, that is, extrapyramidal symptoms, somnolence, increased risk of falls, stroke, and mortality [9,18–20]. Pinpointing at inappropriateness of psychotropic drug use (PDU) may help optimizing it in the future and may even reduce adverse events.

The retrospective application of “appropriateness” criteria to assess medication use is referred to as drug utilization reviews [21]. Based on this concept, several tools and indexes have been developed for the measurement of inappropriate drug use [22]. One of these has been shown to be reliable [23] and applicable in the nursing home setting [24], the Medication Appropriateness Index (MAI) [25]. However, the MAI is an index to measure appropriateness of drug prescription in general, but it is not specifically developed for assessing appropriateness of PDU for NPS in dementia. In addition, the MAI does not fit specific drug utilization formularies, which is preferable when drug utilization reviews are applied [26,27]. Formularies that contain evidence-based international medication recommendations for physicians on when and how to use PDs for patients with dementia and NPS should be applied.

Hence, to estimate appropriateness of PDU for NPS in dementia, the MAI has to be adjusted [28].

The aim of this study was to develop an index that is suited for measuring appropriateness of PDU for NPS in patients with dementia in nursing homes and to test its reliability and validity.

2. Methods

For the use in clinical research [29], an index to measure appropriateness of PDU, prescribed for NPS in patients with dementia in nursing homes, based on patient medical record inspection [30], was developed. To enhance its use for clinical studies, a summated index score was constructed [31]. The development of the index was guided by a formative model [32]. This means that the items, or causal indicators in this case [33], together determine the construct “appropriateness” instead of reflecting the underlying construct. This also implies that neither classical test theory nor item response theory is applicable [32]. In Fig. 1, an example is provided from other research. Similar use of these models can be applied in measuring drug use where, for example, drowsiness is a reflective measure for (in)appropriate psychotropic drug use and the correct indication is a formative measure for appropriate drug use.

Index development was performed in the following step-by-step approach using measurement techniques according to the work of Diamantopoulos and Winklhofer [34], Streiner and Norman [35], and de Vet et al. [32]: (1) the index construction (see Section 2.1); (2) the study of item interrater reliability (2.2); (3) the construction of a summated index score (2.3); and (4) the study of construct validity (2.4).

For this study, we used two expert panels and three samples of nursing home patients with dementia. These will be described in the pertaining sections. All statistical analyses were performed using IBM SPSS Statistics version 20.0 (SPSS Inc., Chicago, IL, USA).

2.1. Index development

An expert panel of one pharmacist and four elderly care physicians (expert panel 1) developed the index by extensively reviewing the literature [29] and thus the constructs’ contextual domain [36]. All panel members are also scientists who have extensive knowledge in the field of dementia research. The development was validated by a second independent expert panel (expert panel 2). Expert panel 2 consisted of 10 clinical and scientific experts in PDU and NPS in dementia, that is, three clinical pharmacologists, one pharmacist, two geriatricians/pharmacologists, one psychiatrist, and three elderly care physicians.

The index development consisted of two parts: (2.1.1) selection of items for “appropriateness of PDU for NPS in dementia” and (2.1.2) development of scoring rules and instructions for medical record inspection.

2.1.1. Selection of items for “appropriateness of PDU for NPS in dementia”

To establish which items determine the construct “appropriateness of PDU for NPS in dementia,” expert panel 1 used the MAI items as a basis. The MAI consists of 10 items, that is, indication, effectiveness, dosage, correctness of directions, practicality of directions, drug–drug

Download English Version:

<https://daneshyari.com/en/article/10513721>

Download Persian Version:

<https://daneshyari.com/article/10513721>

[Daneshyari.com](https://daneshyari.com)