

RAI-HC AS AN INNOVATIVE TOOL FOR FUTURE PRACTICE IN HOME CARE

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Abstract

This study aimed at examining the Resident Assessment Instrument-Home Care (RAI-HC) regarding its potential for a variety of researches as well as for improving quality of care. We searched Medline and PubMed database for peer-reviewed articles reporting primary data on the RAI-HC in English. Study site, objectives of the studies, and findings were abstracted. The search identified 34 articles that met the author's criteria. Nearly a half of the identified studies was conducted in Canada where the RAI-HC is officially used; therefore population based longitudinal survey is widely possible. Another nearly a half was based on a joint European study called ADHOC. There were broadly four types of studies. Firstly, the main focus was on a prevalence of particular conditions of home care clients across different care settings. Secondly, the focus was on predicting factors of either inappropriate events such as falls and nursing home admission or appropriate treatment regimen. Thirdly, the focus was on adverse consequences of clients' conditions, such as care giver burden as a possible consequence of depressed clients. Lastly, the focus was on development of algorithm or protocol to prioritize long-term care placement or rehabilitation planning. Substantial studies have been done using the RAI-HC and they have provided useful scientific insights in the area of home care. Official use of the RAI-HC in home care agencies throughout could contribute to help identify and respond to health promotion and disease prevention issues in this population.

Key words: home care; older people; RAI-HC; multidimensional instrument; assessment; quality of care; quality indicators

INTRODUCTION

Improving the quality of home care for frail older people plays a crucial role not only for maintaining the quality of life among older people, but also for achieving a sustainable health and social care system in rapid ageing societies. Resident Assessment Instrument-Home Care (RAI-HC), a multidimensional assessment instrument for home care clients, was

developed for this purpose. The tool provides a standardized assessment of clients' sociodemographic, physical and cognitive status, psychological and health conditions, receipt of formal services and informal (e.g., family, friends) care, and use of prescription and over-the-counter drugs. It is being used officially in 17 states in USA, Canada and New Zealand and with lesser degree in numerous other countries such as Switzerland, Italy, Finland, Hong

Kong, Japan and Australia among others, but is hardly known in the Central European countries.

There appears to be several distinctive advantages about the RAI-HC. First, the assessment processes is standardized, which means that once the RAI-HC is filled in an agency in any country, the clients characteristics and the agency profile can be compared across countries easily even through literature reviews. Second, since the RAI-HC is one module of RAI-suite that includes a variety of care settings such as long term care, acute care, and palliative care, it could contribute a continuity of care through sharing a common language across disciplines in different care settings. Third, there are many clinical applications to be linked with the information collected by the RAI-HC. Care planning guideline (CAPs), case-mix index, quality indicators, and various validated scales such as ADL hierarchy, cognitive performance scale are examples. What kind of scientific researches is possible using the RAI-HC, however, has never been explicitly summarised.

MATERIAL AND METHODS

To facilitate a future discussion to introduce the RAI-HC into home care agencies throughout in the Czech Republic, this study was aimed at summarising past scientific contributions of the RAI-HC in the areas of gerontology and geriatric medicine by literature review. The findings was expected to give the authors an insight regarding a new research project on impact of hearing aid on quality of life among older people.

We searched Medline and PubMed database for peer-reviewed articles reporting primary data on RAI-HC. As we recognize

that some studies based on a joint European studies on the RAI-HC (the “Aged in Home Care” – ADHOC) do not include RAI-HC in their text, medical subject heading terms used was home care together with RAIHC or RAI-HC or ADHOC or Ages in Home Care and yielded 50 articles. The search was limited to articles published in English, which resulted in 42 articles, after excluding two in German (Rappold 2007, Burla et al. 2010), two in Korean (June et al. 2009, Yoo 2011a), one in Icelandic (Jonsson et al. 2003), one in Spanish (Moya Martinez et al. 2009), one in Czech (Topinková et al. 2006) and one in Dutch (Frijters et al. 2008). Limitation to English literatures was needed due to language ability of the corresponding author who primary conducted the review.

After reviewing the titles and online abstracts, articles were retrieved for full examination if inclusion in our study was likely or could not be determined. Only studies that presented original, primary data on the RAI-HC were included in this study. For the purpose of describing what kind of studies is available using the RAI-HC clearly, “type” of each study was defined according to the main focus of the study. The number of the type was not predefined.

RESULTS

In our literature review, 34 studies met the eligibility criteria. Nearly a half (16 out of 34) was conducted in Canada where the RAI-HC is officially used; therefore population based survey is possible. Another 16 studies were based on the ADHOC study. One was from Hong Kong and one was from Korea.

There were broadly four types of studies identified (Table 1).

Table 1. Methodology and main focuses employed in 34 studies examining RAI-HC

| Source | Setting | Data | Type | Main focus |
|-------------------------|---------|-----------------|------|---|
| Armstrong et al. (2012) | Canada | Longitudinal | D | Development of case mix index to predict rehabilitation service |
| Costa and Hirdes (2010) | Canada | Cross-sectional | A | Comparison of clients characteristics between care programs |
| Dalby et al. (2008) | Canada | Cross-sectional | B | Factors associated with potentially inappropriate medication among depressed people |

| Source | Setting | Data | Type | Main focus |
|----------------------------|-----------|-----------------|------|--|
| Doran et al. (2009a) | Canada | Cross-sectional | A | Prevalence of adverse outcomes (fall, ER visits, hospital visits, unintended weight loss) |
| Doran et al. (2009b) | Canada | Longitudinal | B | Predictors of adverse outcomes |
| Fialová et al. (2005) | ADHOC | Cross-sectional | B | Factors associated with inappropriate medication |
| Finne-Soveri et al. (2008) | ADHOC | Cross-sectional | C | Association between caregiver burden and faecal incontinence |
| Foebel et al. (2011) | Canada | Cross-sectional | B | Prevalence and factors associated with management of heart failure |
| Foebel et al. (2012) | Canada | Cross-sectional | B | Association between caregiver status and medication adherence among heart failure clients |
| Grue et al. (2010) | ADHOC | Cross-sectional | C | Consequences of recent visual decline |
| Gruneir et al. (2013) | Canada | Longitudinal | A | Different factors associating with nursing home admission between genders |
| Henrard et al. (2006) | ADHOC | Cross-sectional | D | Development of home care service index |
| Hirdes et al. (2006) | Canada | Longitudinal | B | Factors associated with influenza immunization |
| Hirdes et al. (2008) | Canada | Longitudinal | D | Development of prioritize of LTC placement |
| Landi et al. (2005) | ADHOC | Cross-sectional | B | Factors associated with influenza immunization |
| Landi et al. (2007) | ADHOC | Longitudinal | B | Factors associated with functional decline |
| Leung et al. (2010) | Hong Kong | Cross-sectional | C | Psychosocial factors associated with recurrent falls |
| Maxwell et al. (2008) | Canada | Cross-sectional | B | Factors associated with pain management |
| Maxwell et al. (2013) | Canada | Cross-sectional | B | Factors associated with pharmacotherapy monitoring for dementia |
| Paddock et al. (2003) | Canada | Cross-sectional | B | Factors associated with acute care |
| Onder et al. (2005) | ADHOC | Cross-sectional | C | Association between pain and depression |
| Onder et al. (2007) | ADHOC | Cross-sectional | B | Effect of depression on the risk of nursing home admission |
| Onder et al. (2008) | ADHOC | Cross-sectional | C | Association between care management and preventive strategies/care giver burden |
| Soldato et al. (2007) | ADHOC | Longitudinal | B | Association between pain and functional decline |
| Soldato et al. (2008) | ADHOC | Cross-sectional | C | Association between untreated depression and caregiver stress |
| Sørbye et al. (2005) | ADHOC | Cross-sectional | A | Factors explaining indwelling catheter use accross countires |
| Sørbye et al. (2007) | ADHOC | Cross-sectional | A | Association between obesity and home care utilization |
| Sørbye et al. (2008) | ADHOC | Cross-sectional | B | Factors associating with unintended weight loss |
| Sørbye et al. (2009) | ADHOC | Cross-sectional | A | Prevalence and associating factors of urinary incontinence and use of pads accross countries |

| Source | Setting | Data | Type | Main focus |
|----------------------------|---------|-----------------|------|---|
| Sørbye et al. (2010) | ADHOC | Longitudinal | B | Factors associated with nursing home admission |
| Szczerbinska et al. (2012) | Canada | Cross-sectional | A | Prevalence of depression and antidepressants use across settings |
| Vik et al. (2007) | Canada | Cross-sectional | B | Factors associated with osteoporosis treatment among those with diagnosis and those with prevalent fracture |
| Yoo (2011b) | Korea | Cross-sectional | B | Factors associated with recurrent falls |
| Zhu et al. (2007) | Canada | Cross-sectional | D | Development of clinical protocols for rehabilitation planning |

“**A**” – the main focus was on prevalence of particular clients’ condition, such as safety problems (Doran et al. 2009a), obesity (Sørbye et al. 2007), indwelling catheter and pad use (Sørbye et al. 2005, Sørbye et al. 2009). Some studies had more emphasis on a comparison across care settings (Costa and Hirdes 2010, Szczerbinska et al. 2012) and between genders (Gruneir et al. 2013).

“**B**” – the main focus was on investigating predictive clients characteristics of particular events. There are broadly two different events. The one is *adverse events*, such as emergency room visits (Doran et al. 2009b), functional decline (Landi et al. 2007, Soldato et al. 2007), nursing home admission (Onder et al. 2007, Sørbye et al. 2010), acute care use (Paddock and Hirdes 2003), recurrent falls (Yoo 2011b), unintended weight loss (Sørbye et al. 2008), inappropriate medication (Fialová et al. 2005, Dalby et al. 2008), and poor compliance (Foebel et al. 2012). Finding the related factors to these adverse events can contribute to develop a preventive strategy. The other is *appropriate treatment regimen* to address potential issue of an undertreatment in this elderly population. Clients characteristics were investigated regarding pain management (Maxwell et al. 2008), influenza immunization (Landi et al. 2005, Hirdes et al. 2006), preventive strategies (Onder et al. 2008), pharmacotherapy of dementia (Maxwell et al. 2013), heart failure treatment (Foebel et al. 2011), and osteoporosis treatment (Vik et al. 2007).

“**C**” – the focus was on consequences affected by particular conditions. Possible influences were investigated of untreated

depression (Soldato et al. 2008) or faecal incontinence (Finne-Soveri et al. 2008) on care giver burden, recent visual decline on social functioning (Grue et al. 2010), pain on depression (Onder et al. 2005), baseline pain on subsequent functional decline (Soldato et al. 2007), and falls on psychosocial factors (Leung et al. 2010).

“**D**” – the focus was on development of algorithm or protocol, such as prioritizing long-term care placement (Hirdes et al. 2008) and developing rehabilitation planning (Zhu et al. 2007, Armstrong et al. 2012) and home service index (Henrard et al. 2006).

DISCUSSION

The findings from these empirical literatures give some strikingly useful information for practice. For example, among clients with a poor social support system, those with nutrition problems were 6 times as likely to have used acute health care services (Paddock and Hirdes 2003), which gives nurses an idea that social support is in particular of importance when clients’ condition gets worse. Other examples include a study suggesting that recent visual decline should be more focused than long term stable decline because it has more negative consequences in social activity and functional states (Grue et al. 2010).

Further since the RAI-HC gives a possibility to examine an appropriateness of treatment regimen through detailed clients’ information, the RAI-HC could contribute not only to gerontological nursing, but also to geriatrics as well. For example a study

found that many older adults with presumed osteoporosis were not receiving drug therapy for this condition and the treatment coverage was significantly lower among clients with at least three chronic conditions, health instability, functional impairment, and depressive symptoms. This study clearly suggests that indicators of clinical instability and functional decline appear to represent influential factors in geriatric treatment decisions (Vik et al. 2007).

In this literature review, we found that a variety of researches was possible using the RAI-HC and its contribution to the area of home care as well as of gerontological nursing and geriatric medicine was substantial. We have to note that our literature review covered only 'RAI-HC' or 'ADHOC'. There are a plenty of other empirical literatures using the former version of RAI-HC (i.e. MDS-HC) or other modules of RAI, such as long term care or palliative care.

CONCLUSION

Substantial studies have been done using the RAI-HC and they have provided useful scientific insights in the area of home care. Official use of the RAI-HC in home care agencies throughout country could contribute to help identify and respond to health promotion and disease prevention issues in this population.

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