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## Original Study

## Eight-Year Trends in the Use of Opioids, Other Analgesics, and Psychotropic Medications Among Institutionalized Older People in Finland

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## A B S T R A C T

**Keywords:**  
Nursing home  
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sedative load

**Importance:** It is recognized that pain has been undertreated and psychotropic medications overused in institutional settings.

**Objective:** To investigate the change in prevalence of opioids, other analgesics, and psychotropic medications in institutional settings over an 8-year period.

**Settings:** Institutional settings in Helsinki, Finland.

**Participants:** Older residents in nursing homes in 2003 (n = 1987) and 2011 (n = 1576) and in assisted living facilities in 2007 (n = 1377) and 2011 (n = 1586).

**Outcome Measures:** Comparable audits of medication use were conducted among institutionalized residents at 3 time points over 8 years. The prevalence of regular opioid, other analgesic, and psychotropic medications was compared across the 3 time periods.

**Results:** Nursing home and assisted living facility residents were older; more disabled, had a higher prevalence of dementia, and greater comorbidity in the latter cohorts. The prevalence of regular opioid use was 11.8% and 22.9% in nursing homes in 2003 and 2011 ( $P < .001$ ), and 8.6% and 17.3% in assisted living facilities in 2007 and 2011 ( $P < .001$ ), respectively. The prevalence of regular acetaminophen and pregabalin/gabapentin increased and NSAIDs decreased in both nursing homes and assisted living facilities. The prevalence of regular antipsychotic use decreased from 42.6% to 27.8% in nursing homes ( $P < .001$ ) but increased from 26.9% to 32.0% in assisted living facilities ( $P = .0017$ ). The mean number of psychotropic medications (antipsychotics, antidepressants, anxiolytics, hypnotics) per resident decreased from 1.9 in 2003 to 1.0 in 2011 in nursing homes ( $P < .001$ ) but increased from 1.1 to 1.2 in assisted living facilities ( $P = .040$ ).

**Conclusions:** The prevalence of opioid use in institutional settings has doubled during the past decade. The prevalence of psychotropic medications has decreased in nursing homes but increased in assisted living facilities. The increase in opioid use may reflect improved recognition and treatment of pain. However, initiatives are needed to monitor opioid-related adverse drug events and ensure appropriate use of psychotropic medications, particularly in assisted living facilities.

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Chronic pain is highly prevalent among institutionalized older people.<sup>1,2</sup> Pain has been undertreated among nursing home residents,<sup>3</sup> particularly among those with cancer<sup>4</sup> and dementia.<sup>5</sup> Managing pain is particularly important in institutional settings. Residents with dementia may express pain as neuropsychiatric symptoms.<sup>6</sup> Structured approaches to pain management may help resolve neuropsychiatric symptoms and reduce prescribing of psychotropic medications.<sup>7</sup>

Although acetaminophen is regarded as the first-line agent for acute and persistent pain, recent guidelines have highlighted the role of opioids in treating moderate to severe pain.<sup>8–12</sup> Appropriate use of long-acting opioids may improve functional status and social engagement.<sup>8</sup> The relative safety of long-acting opioids has been highlighted, with possible less risk than nonsteroidal anti-inflammatory drugs (NSAIDs).<sup>8,9,13</sup> However, long-term opioid use in institutionalized older people has not been evaluated in clinical trials.<sup>11,14,15</sup> Observational studies suggest there is considerable interpatient variability in tolerability and opioid-related adverse drug events (ADEs) vary according to the specific agent.<sup>12,16,17</sup> When used among older people, opioids have been associated with abuse, overdose, falls and fractures,<sup>18–21</sup> hospitalizations,<sup>20</sup> cognitive decline,<sup>22,23</sup> and delirium.<sup>24</sup> The use of opioids at the population level has increased substantially over the past decade<sup>25–27</sup>; however, less is known about the change in opioid prevalence among institutionalized older people. It is unclear whether the opioid use has increased to the same extent in institutional settings as reported in community settings.<sup>25</sup>

Psychotropic medications are widely prescribed for the treatment of behavioral and psychological symptoms of dementia. Despite evidence suggesting the risk of harms typically outweighs the therapeutic benefits, a substantial proportion of European nursing home residents continue to receive psychotropic medications.<sup>28</sup> More than 80% of institutionalized residents in Finland are prescribed one or

more psychotropic medications.<sup>29,30</sup> Psychotropic medications have been associated with an increased risk of falls<sup>31</sup> and cognitive decline.<sup>32,33</sup> Use of antipsychotics in people with dementia has been associated with an increased risk of stroke and death.<sup>34,35</sup> Concomitant use of opioids and other psychotropic medications may result in residents having a high sedative load.<sup>36</sup>

The objective of this repeated cross-sectional study was to investigate the change in prevalence of opioids, other analgesics, and psychotropic medications in institutional settings in Helsinki, Finland, over an 8-year period.

## Methods

### Design, Setting, and Participants

This study combined data from 3 comparable cross-sectional studies that explored nutrition and medication use in institutional settings in Helsinki.<sup>29,37,38</sup> The studies were conducted among residents of all nursing homes of Helsinki in 2003 (n = 1987) and in 2011 (n = 1576), and among residents of all assisted living facilities of Helsinki in 2007 (n = 1377) and 2011 (n = 1586). All residents aged 65 years and older who lived permanently in these institutions were approached to participate. The 2003 and 2011 samples comprised 94% and 81% of all nursing home residents aged 65 years or older. The 2007 and 2011 samples comprised 66% and 64% of all assisted living facility residents aged 65 years and older (Figure 1).

In Finland, assisted living facilities provide round-the-clock care with a registered nurse in charge. This is similar to the care provided in nursing homes, but assisted living facilities are designed to resemble a resident's own home environment to a greater extent. Assisted living facilities include both apartments and group homes for people with dementia. The number of nursing home beds in



Fig. 1. Flow chart of the study.

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