

Non-Pharmacological Interventions for Wandering in Patients with Dementia

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Contributor: Tatiana Dimitriou

Aberrant motor behaviour or wandering refers to aimless movement without a specific purpose. Wandering is common in patients with dementia and leads to early institutionalization and caregivers' burden. Non-pharmacological interventions should be also considered as a first-line solution for the wandering because current pharmacological treatment has serious side-effects.

wandering

aberrant motor behaviour

BPSD

dementia

RCT

1. Introduction

Dementia is a term that is used for a range of diseases that cause cognitive impairment, most often in the elderly, resulting in difficulty in performing everyday activities ^[1]. BPSD can cause a decrease of cognitive ability, an increase of caregiver burden, and hospitalization ^[2]. Among BPSD, aberrant motor behaviour or wandering is one of the most challenging behaviours.

Wandering is defined as a pointless pursuit in a state of disorientation ^[3]. It is a syndrome of dementia that is related to motor behaviour. The patient has frequent, repetitive disorientation and/or spatially disorientation that is manifested in random pacing patterns, some of which are associated with elopement attempts or getting lost when alone ^[3]. Some other studies identified that sometimes wandering has purpose. When a patient with dementia (PwD) has become lost in the community, it is often described as "wandering" ^[4]. This behaviour has been found to occur in 65% of patients with Alzheimer's disease (AD) ^[5]. Previous studies have underlined this challenging behaviour as a major problem for the caregivers because wandering may lead patients to do harm, to fall, and to have exposure to extreme weather conditions if he/she wanders outdoors ^{[3][6]}. Many patients with dementia (PwD) wander with no orientation to time and place ^[3]. This is critical because they can be exposed to malnutrition, dehydration, and sleeping problems ^[7]. In some extreme cases, wandering may also lead to death. In addition, the patient may sometimes be agitated while wandering and hurt himself/herself ^[3]. Wandering may be increased when the environment is unfamiliar ^[4]. Wandering may be a way to escape from an unpleasant situation, such as isolation, loneliness, boredom, or frustration ^[8].

2. The Aetiology of Wandering

The aetiology of wandering remains unclear. It seems that three fields have been examined in order to understand the aetiology of this behaviour. These fields are biological, psychosocial, and environmental ^[3].

According to the biological hypothesis, the impairment of the brain functions is detected in spatial memory, visuospatial ability, or executive functions [9]. Wandering is related to visuospatial impairments, but spatial memory also plays a major role in this behaviour [10]. Optic flow perception and interpretation lead to spatial navigation problems, which is the basis for wandering in PwD [11]. Decision-making, planning, and executive impairments also lead to wandering. In terms of neuropathology, wanderers have a more severely reduced cerebral blood flow in the left temporoparietal region [12]. PET scans also show decreased frontotemporal glucose utilization and dopamine [11]. There are also circadian rhythm problems in wanderers, and therefore, many wanderers have sleeping disturbances [11]. Overall, it seems that wandering involves parietal and frontal dysfunctions and possibly temporal impairments as well [11]. A spatial and executive impairment potentially leads to wandering.

According to the psychosocial and environmental approach, wandering can occur because the patient feels discomfort, or the environment is unpleasant or noisy [13]. PwD may need to go to the bathroom, and they get frustrated and disoriented in the space, and therefore, they wander. Others may feel unsafe, so they seek out a familiar face or place, and therefore, they may wander [12]. Personality may also play a role, as previous studies have shown. PwD who are sad or angry may sit alone in their rooms for long periods and then wander [3]. People with dementia who express their feelings may wander more.

The current treatment for wandering is limited. There is limited evidence of the efficacy of the pharmacological treatment [3]. It is also crucial that the current medicine lead to a higher risk of aggravation and mortality. Currently, antipsychotics are prescribed to control wandering symptoms. However, the side effects of antipsychotics should be considered [14]. The antipsychotic drugs may cause severe extrapyramidal side effects (EPS), such as muscle rigidity, tremor, bradykinesia, and akathisia. They block dopamine D2 receptors in the striatum [15]. Bradykinesia refers to reduced motor activity, which may lead to akinesia in several cases [16]. Tremor affects the hands, feet, and head, and it is a rhythmic muscle contraction. Another side effect is an increased muscle tone (rigidity) and a slow gait [15]. In addition, akathisia refers to restlessness and repetitive movements of the feet [15]. PwD who suffer from akathisia cannot keep sitting and therefore shift body position. Akathisia is a side effect that frequently occurs after starting antipsychotics or after increasing the dose of the drug [16]. Moreover, dystonia causes muscle contraction and attacks the tongue, trunk, limbs, and the neck muscles [16]. Although antipsychotic drugs are widely used to treat BPSD, with a prescription rate of 20–50%, except for haloperidol and risperidone in some countries, other antipsychotic drugs are not approved to treat BPSD [17].

3. Interventions

3.1. Reminiscence Therapy (RT)

RT is used to recall past memorable events of the patient's life. Photos, music, books, and letters can be used. The caregiver aims to involve the patient in a discussion and/or evaluation of the past experiences and events. In accordance with previous studies [18][19], the current trial used photo albums in order to recall happy days.

3.2. Music Therapy (MT)

MT is a non-pharmacological intervention that has been proven very effective for the reduction of some BPSD, such as depression [20] and agitation [21]. MT has not been examined as an alternative method for wandering symptoms. However, because previous studies have claimed that MT has a beneficial and promising effect on BPSD, the intervention was used in the current study [22]. The caregivers chose the most preferable music for their patients.

3.3. Physical Exercise (PE)

PE has shown very promising results for the reduction of many BPSD [23][24]. For that reason, it was used in the current study as well.

4. Research Findings

The current results reveal that there is a combination of non-pharmacological interventions that can reduce wandering in PwD. The combination of the interventions is PE, followed by MT, followed by RT. The study found that this combination can effectively reduce wandering symptoms in all types and different stages of PwD. According to the results, this combination is also effective in reducing the caregivers' burden due to wandering. Some other combinations seemed to work as well.

PE (in the current study, the caregivers used walking) is an intervention with beneficial effects on other BPSD as well [25]. More expressive personalities who wander decompress themselves via walking [26]. MT is the intervention that follows PE in our combination. MT has been shown to be a promising intervention for the treatment of many BPSD [22]. No other RCT has examined MT for wandering. Finally, RT is another non-pharmacological intervention that has shown positive results for the treatment of the BPSD [19].

The combination that effectively reduced wandering in PwD was the same combination that effectively reduced caregivers' burden. The caregiver's psychology is strictly related to the patient's behaviour. The caregivers look for a way to reduce the symptom, its frequency, or its severity. Therefore, because the above combination reduces wandering, its frequency, or its severity, it is effective for the caregivers' burden as well.

Future studies should focus on the non-pharmacological interventions for the treatment of BPSD. It is crucial to have in mind that the combinations of the interventions may give better results than one intervention by itself. Therefore, different methods of administering an intervention may benefit the PwD at different stages of dementia. Another critical matter is the different cultural backgrounds of the PwD and their caregivers. Therefore, the combinations of the interventions should be applied in accordance with the cultural background of the patient.

The hypothesis that there is a combination of non-pharmacological interventions that can effectively reduce wandering in PwD has been confirmed.

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