

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Symptom-Specific Non-Pharmacological Interventions for Behavioral and Psychological Symptoms of Dementia: Protocol of an Umbrella Review of Systematic Reviews of Randomized Controlled Trials
<b>AUTHORS</b>	Cho, Eunhee; Kim, Min Jung; Yang, Minhee; Jang, Jiyeon; Cho, Jungwon; Lee, Ji Yeon

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Tampi, Rajesh Creighton University School of Medicine
<b>REVIEW RETURNED</b>	07-Dec-2022

<b>GENERAL COMMENTS</b>	This is a well written protocol for an umbrella review that aims to identify and summarize the effective non-pharmacological interventions for each sub-symptom and to provide individualized, evidence-based recommendations for clinical practice. follows the guideline of the Cochrane methodology for umbrella reviews. It will only use data from follows the guideline of the Cochrane methodology for umbrella reviews. It only focuses only on systematic reviews with or without a meta-analysis of randomized controlled trials. This review has been is registered in the International Prospective Register of Systematic Reviews (Prospero: CRD42022340930).
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<b>REVIEWER</b>	James, Ian Andrew University of Bradford, Psychology
<b>REVIEW RETURNED</b>	16-Dec-2022

<b>GENERAL COMMENTS</b>	<p>Thank you for asking me to review this submission. The topic relates to an extremely important issue regarding the use of non-pharmacological interventions for BPSD. Considering the problematic side-effect profile of psychotropics, such an article would be of value.</p> <p>There are number of minor issues that are worth raising which, at the very least, need to be highlighted by the authors to demonstrate their awareness of the relevant issues in this area of study. Firstly, the authors must acknowledge that there has been major criticism of the term BPSD in recent years. Wolverson has written on this topic, and has conducted surveys on alternative terminology.</p> <p>In the article the notion of symptoms has been poorly explained. Are the categories of symptoms proposed by the authors based on factor analytic studies, or some other categorisation system? The</p>
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	<p>term 'agitation' has been mentioned, would the authors regard this as a broad super-symptom?</p> <p>The authors should acknowledge that many researchers and clinicians would view BPSD behaviours as manifestations of unmet needs. The proponents of this view would therefore suggest that treatment should be targeted at the level of need rather than at the level of behavioural symptoms (see Algase; Cohen-Mansfield, etc.). The latter is an important issue to acknowledge because the authors are seeking to influence clinicians – many of whom will be using the unmet need perspective in their clinical work.</p>
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### VERSION 1 – AUTHOR RESPONSE

[REVIEWER #1]

R1\_1. This is a well written protocol for an umbrella review that aims to identify and summarize the effective non-pharmacological interventions for each sub-symptom and to provide individualized, evidence-based recommendations for clinical practice. follows the guideline of the Cochrane methodology for umbrella reviews. It will only use data from follows the guideline of the Cochrane methodology for umbrella reviews. It only focuses only on systematic reviews with or without a meta-analysis of randomized controlled trials. This review has been registered in the International Prospective Register of Systematic Reviews (Prospero: CRD42022340930).

Response

Thank you for the review and positive feedback.

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[REVIEWER #2]

Thank you for asking me to review this submission. The topic relates to an extremely important issue regarding the use of non-pharmacological interventions for BPSD. Considering the problematic side-effect profile of psychotropics, such an article would be of value.

R2\_1. There are number of minor issues that are worth raising which, at the very least, need to be highlighted by the authors to demonstrate their awareness of the relevant issues in this area of study. Firstly, the authors must acknowledge that there has been major criticism of the term BPSD in recent years. Wolkstein has written on this topic, and has conducted surveys on alternative terminology.

Response

Thank you for the review and constructive feedback. As suggested, we have thoroughly read Wolkstein et al.'s articles and agree that the term BPSD is being criticized. Although we are still using the term BPSD, we have explicitly acknowledged this issue regarding BPSD in the manuscript in the Introduction section on Page 4 as follows:

“In recent years, there have been arguments about BPSD as this terminology may evoke a negative perspective toward the symptoms of dementia, framing them as problems to be solved or treated using pharmacological intervention or physical restraint [9]. Among the various terminologies suggested, unmet needs seem to be neutral terminology, which is broadly accepted by persons living with dementia and their caregivers [10,11].”

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R2\_2. In the article the notion of symptoms has been poorly explained. Are the categories of symptoms proposed by the authors based on factor analytic studies, or some other categorisation system? The term 'agitation' has been mentioned, would the authors regard this as a broad super-symptom?

#### Response

We agree that it is difficult to distinguish whether agitation presented by persons with dementia is a dementia-related symptom or a mental problem (a broad super symptom); therefore, we plan to use the terms of the symptoms described by the authors of each systematic review. Regarding the categorization, we have followed the typology of Neuropsychiatric Inventory (NPI), developed and validated by Cummings et al. (1994), and reframed by Kaufer et al. (2000). It includes 12 symptoms (i.e., aberrant motor behaviors, agitation or aggression, anxiety, apathy, appetite disorder, delusions, depression, disinhibition, elation/euphoria, hallucinations, irritability, and sleep disorder), and this typology is commonly used in research studies (Walaszek, 2020). In the manuscript, we have added further explanation regarding the employed categorization in the Introduction on Page 4. Please follow the red text below (Page 4):

“BPSD, often called neuropsychiatric symptoms of dementia [3], are a set of heterogeneous non-cognitive symptoms. The Neuropsychiatric Inventory (NPI) is a commonly used tool in categorizing BPSD and includes aberrant motor behaviors, agitation or aggression, anxiety, apathy, appetite disorder, delusions, depression, disinhibition, elation/euphoria, hallucinations, irritability, and sleep disorder [4].”

In addition, we have added the criterion of categorization in the Data extraction section on Page 9 as follows:

“Key findings related to our review questions will then be extracted, especially focusing on the sub-symptoms of BPSD according to the NPI [4].”

R2\_3. The authors should acknowledge that many researchers and clinicians would view BPSD behaviours as manifestations of unmet needs. The proponents of this view would therefore suggest that treatment should be targeted at the level of need rather than at the level of behavioural symptoms (see Algaese; Cohen-Mansfield, etc.). The latter is an important issue to acknowledge because the authors are seeking to influence clinicians – many of whom will be using the unmet need perspective in their clinical work.

#### Response

As recommended, we have added further explanation regarding the unmet needs perspective in the Introduction section on Page 5. Thanks to the comments, we were able to increase the logical flow of our manuscript by outlining why non-pharmacological intervention is important in the symptoms of dementia. Please see page 5:

“Although this umbrella review will use the term BPSD for the categorization of the symptoms, the unmet needs model must also be considered. The perspective to view BPSD as an unmet need particularly emphasizes the necessity of non-pharmacological interventions as a frame for understanding personhood, taking action to fulfill unmet needs, and eventually improving symptoms [12-14].”

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#### Reference

Cummings JL, Mega M, Gray K, et al. The Neuropsychiatric Inventory: comprehensive assessment of psychopathology in dementia. *Neurology* 1994;44:2308-14.

Walaszek A. Behavioral and psychological symptoms of dementia. American Psychiatric Association, 2020.

Kaufert DI, Cummings JL, Ketchel P, et al. Validation of the NPI-Q, a brief clinical form of the Neuropsychiatric Inventory. *J Neuropsychiatry Clin Neurosci* 2000;12:233-9.

Wolvenson E, Dunn R, Moniz-Cook E, et al. The language of behaviour changes in dementia: A mixed methods survey exploring the perspectives of people with dementia. *J Adv Nurs* 2021;77:1992-2001.

Cunningham C, Macfarlane S, Brodaty H. Language paradigms when behaviour changes with dementia : #BanBPSD. *Int J Geriatr Psychiatry* 2019;34:1109-13.

Wolvenson E, Moniz-Cook E, Dunn R, et al. Family carer perspectives on the language of behaviour change in dementia: an online mixed methods survey. *Age Ageing* 2022;51.

Algase DL, Beck C, Kolanowski A, et al. Need-driven dementia-compromised behavior: An alternative view of disruptive behavior. *Am J Alzheimers Dis Other Demen* 1996;11:10-9.

Cohen-Mansfield J. Nonpharmacologic treatment of behavioral disorders in dementia. *Curr Treat Options Neurol* 2013;15:765-85.

Stokes G. Challenging behaviour in dementia : a person-centred approach. Stokes, Graham, 2000.

### VERSION 2 – REVIEW

<b>REVIEWER</b>	James, Ian Andrew University of Bradford, Psychology
<b>REVIEW RETURNED</b>	03-Feb-2023
<b>GENERAL COMMENTS</b>	Thank you for the revisions.