PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	The impact of dementia education and training on health and social care staff knowledge, attitudes and confidence: A cross-sectional study
AUTHORS	Parveen , Sahdia; Smith, Sarah; Sass, Cara; Oyebode, Jan; Capstick, Andrea; Dennison, Alison; Surr, Claire

VERSION 1 – REVIEW

REVIEWER	Rhoda Macrae University of the West of Scotland. UK
REVIEW RETURNED	27-May-2020

GENERAL COMMENTS	Comments This was an interesting read and very pertinent for those involved in the design, delivery and commissioning of dementia education in the UK. Abstract- Perhaps consider listing the variance in order of highest to lowest. The abstract doesn't fully allude to one of the most interesting findings on page 15 lines 20-28. 'limited impact on staff outcomes' – please see later comments Features and Factors? See comments below Background section – I wonder if the first two paragraphs could hone in on the policy drivers/dementia strategies and the need for effective dementia education a little more quickly. Page 7 – the dementia education studies that are cited could be more wide ranging and up to date Page 8 – Perhaps rephrase lines 4-11 as some previous studies looking at impact have focused on pedagogical considerations e.g. Jack-Waugh A, Ritchie L and Macrae R. NET (2018). Page 8 line 14 – the aim is to measure the impact of training on the knowledge, attitudes and confidence of staff – given this it is really important that the nature of the training packages being measured is explained. It would be helpful to know how many out of the 18 training packages were tier 1, 2 or 3 and how many of the 14 subjects were addressed in the 18 packages included? How many of the packages had all the components of effective education identified by Surr et al 2016? Page 8 line 16 – is it features (content and pedagogical) and factors (other variables)? Method - Page 8, line 32, it was conducted in the UK but the data is from England. When was the data collected? Page 10 – an explanation of why these particular measures were chosen would be helpful. The KIDE and CODE were developed for use with hospital staff, but this sample comes from many care

	settings. Line 16 & 32– this is not UK wide, it is dementia education in England. Results An explanation of variance and a greater explanation of the meaning of the statistics would be helpful for the reader. Presenting the results from highest to lowest in order by paragraph and within the paragraphs would be helpful. It would be helpful to know how many out of the 18 training packages were tier 1, 2 or 3 and how many of the 14 subjects were addressed in the 18 packages included. How many of the packages had the components of effective education identified by Surr et al 2016? Were they all designed to impact on staff knowledge, attitudes (knowledge and comfort) and confidence? If many of these (how many?) were tier 1 awareness raising programmes it is unsurprising they has limited impact. Discussion Page 14, line 50 – a more nuanced interpretation of the data might be helpful – is that dementia training per se has limited impact? Or is it that tier 1, tier 2 and or tier 3 training has? The reader can't tell as detail about the training packages is missing. It would be helpful to know if the training packages were designed to have impact on the factors that were measured. Page 15, line 14-18 you details the features that have the most impact on learning outcomes here, an earlier characterisations of the packages would be helpful to contextualise this. The findings on page 15 lines 20-28 are very interesting and have potentially have far reaching implications. Page 15 line 21 – my understanding is that tier 1 training is about awareness raising so perhaps not that surprising that most impactful on knowledge? Can we really expect tier 1 to be impactful across all the aspects measured? And these will be staff with little knowledge in the first place presumably? Tier 2 builds on knowledge and starts to do more reflective attitudinal work and tier 3 builds on that, is targeted at more experienced staff so the desired learning outcomes will be greater confidence. Another interpretation could be that the tiered approach to training is doing what it is intended to? Page 15, line 34 We don't know what the training packages measured covered so this lengthy discussion of the Smith et al in the discussion feels new and unrelated. I appreciate the rationale as it relates to the previous paragraph and the need for more of the workforce to have access to tier 2 and 3 education, but wonder if it would be helpful to put some of this (that most education is tier 1) earlier in the paper and then return to it here? Page 16 – lines 1 -16. Tier 2 and 3 is designed for those who have substantive contact with people with dementia, so is your point that this should be made more available? Training should be more targeted? I don't understand lines 9-16 – the point you are trying to make isn't clear. Page 16 line 18-26 – a more nuanced reading and presentation of the findings would be helpful in light of the comments above Page 17 – limitations – I think the sample reflects the demographics of the health and social care workforce – older women. Ceiling effect on confidence levels – I wonder if this is related to the CODE? what is your view? Page 17 lines 53 -55 – implications - is there something about education needing to be a) more targeted b) incremental in line with the tiered approach of the framework? The really important point

	about wanting to influence attitudes and build confidence through education that has depth and strong pedagogical underpinning is important and a more nuanced presentation of the findings would better support this. General comment The term 'impact on health and social care outcomes' I think refers to the learning outcomes of the dementia training standards framework and feel it would be clearer if the full term learning outcomes was used throughout to save any confusion. Although i have ticked the major revision box as my comments makes it more than minor my feeling is that some more detail and nuance would resolve the issues i have raised and strengthen the paper. kind regards

REVIEWER	Anthony Scerri Uni of Malta Malta
REVIEW RETURNED	01-Jun-2020

GENERAL COMMENTS	The study sought to measure the impact of dementia education and training on the knowledge, attitudes and confidence of health and social care staff and establish whether staff characteristics, education or training content/pedagogical factors account for these staff outcomes. The study is well written and gives an interesting snapshot of the factors influencing health and social care staff knowledge, attitudes and confidence about dementia in UK. These are some suggestions you may consider to further improve the paper: Abstract: In the design section consider including the dates when data collection was held Background: Add reference to this sentence Page 5 Line 50-53: 'The need for a clear evidence base for effective features of dementia education and training for health and social care staff has also been identified'. Background: Whilst it is understandable that BMJ Open is a British journal, more relevant international studies could have been included in the background section. Method: Participants: Page 8 Line 20: How many participants completed one or more of the training packages? This information can shed light on the actual response rate of the survey. Measures: Staff characteristics: There are many studies which indicate that staff knowledge, attitudes and confidence are related to their occupation. Why was this variable not been considered? Moreover, it could have been interesting to see whether staff knowledge, attitudes and confidence varied across different health and social care settings, for example, according to whether they worked in acute care, community mental health, primary care, pharmacies and care homes. Results: The findings pertaining to the staff reactions to the training course they completed (in terms of satisfaction, relevance, understanding, recommendation) are missing. Why are these results not included in this study?

	Results: Participants: Line 11 and 12: 'Only packages with ten or more respondents were included in subsequent data analysis'. On what basis was this cut-off number taken? Discussion: Can you suggest a rationale why the staff that reported to have attended the 'health and wellbeing' and the' families and carers as partners in dementia care' topics consistently scored lower in staff knowledge and attitudes? In Page 15 Line 1 you found that staff characteristics, pedagogical factors and training content play on 30% of the variance in staff outcomes. Can you suggest what other factors beyond dementia education and training can play a part based on relevant literature? Page 13 Line 20-28: 'with perhaps the most interesting finding being that completion of tier one dementia education and training was most impactful for staff knowledge as measured by the KIDE [18], tier two training was most impactful on staff attitudes and tier three was associated with greater staff confidence' How did you arrive to this conclusion? The p-values related to 'Tier' in the tables do not indicate this? Page 17 Line 9-12: 'The survey had a low response rate which may have been due to organisations not being able to reach relevant staff' What was the response rate then? The discussion needs to compare more the findings with relevant studies or studies with similar findings.

VERSION 1 – AUTHOR RESPONSE

R1 Abstract-

Perhaps consider listing the variance in order of highest to lowest. The abstract doesn't fully allude to one of the most interesting findings on page 15 lines 20-28. 'limited impact on staff outcomes' – please see later comments

We have reordered the list of variables based on from highest to lowest level of variance explained. The first sentence of the conclusion indicates the limited impact of dementia education on staff outcomes.

R2

Abstract: In the design section consider including the dates when data collection was held

The year has now been included.

Background

R1

I wonder if the first two paragraphs could hone in on the policy drivers/dementia strategies and the need for effective dementia education a little more quickly.

We have reduced the length of the first paragraph to introduce the policy drivers sooner.

Page 7 – the dementia education studies that are cited could be more wide ranging and up to date

The following studies have now been cited.

Jennings, A., McLoughlin, K., Boyle, S., Thackeray, K., Quinn, A., O'Sullivan, T. and Foley, T., 2019. Development and evaluation of a primary care interprofessional education intervention to support people with dementia. Journal of interprofessional Care, 33(5), pp.579-582.

Jack-Waugh, A., Ritchie, L., & MacRae, R. (2018). Assessing the educational impact of the dementia champions programme in Scotland: Implications for evaluating professional dementia education. Nurse education today, 71, 205-210.

Wang, Y., Xiao, L.D., Ullah, S., He, G.P. and De Bellis, A., 2017. Evaluation of a nurse-led dementia education and knowledge translation programme in primary care: A cluster randomized controlled trial. Nurse education today, 49, pp.1-7.

O'Brien, R., Goldberg, S.E., Pilnick, A., Beeke, S., Schneider, J., Sartain, K., Thomson, L., Murray, M., Baxendale, B. and Harwood, R.H., 2018. The VOICE study–A before and after study of a dementia communication skills training course. PloS one, 13(6), p.e0198567.

Rokstad, A.M.M., Døble, B.S., Engedal, K., Kirkevold, Ø., Benth, J.Š. and Selbæk, G., 2017. The impact of the Dementia ABC educational programme on competence in person-centred dementia care and job satisfaction of care staff. International Journal of Older People Nursing, 12(2), p.e12139.

Page 8 – Perhaps rephrase lines 4-11 as some previous studies looking at impact have focused on pedagogical considerations e.g. Jack-Waugh A, Ritchie L and Macrae R. NET (2018).

The sentence has been amended to read as

'Previous studies (with the exception of Jack-Waugh et al., 2018) exploring the impact of dementia education and training have primarily focused on a single training programme with limited focus on pedagogical considerations, and with a select group of health and social care staff.'

Page 8 line 16 – is it features (content and pedagogical) and factors (other variables)?
This sentence has been amended.

R2

Background: Add reference to this sentence Page 5 Line 50-53: 'The need for a clear evidence base for effective features of dementia education and training for health and social care staff has also been identified'.

We have now added a reference for this sentence. The need for an evidence base was highlighted in UK policy documents.

Background: Whilst it is understandable that BMJ Open is a British journal, more relevant international studies could have been included in the background section.
We have now cited five additional studies that are more recent and international.

Method

R1

Method -
Page 8, line 32, it was conducted in the UK but the data is from England. When was the data collected?

The sentence has been amended to state the study was conducted in England during 2017.

Page 10 – an explanation of why these particular measures were chosen would be helpful. The KIDE and CODE were developed for use with hospital staff, but this sample comes from many care settings.

The measures were selected based on psychometrics. We now note this on page 8 and also note that the measures were originally developed for specific care settings within the limitations section.

Line 16 & 32– this is not UK wide, it is dementia education in England.

This has been corrected.

R2

Method: Participants: Page 8 Line 20: How many participants completed one or more of the training packages? This information can shed light on the actual response rate of the survey.

The actual response rate is 553 as stated. Duplicates were not created based on how many training sessions the respondent had completed. Each respondent was only entered once within the dataset as we not exploring the impact of specific training packages but the content and pedagogical factors. A total of 68 respondents had completed more than one of the training packages included within the survey. This has now been made clearer on page 11.

Measures: Staff characteristics: There are many studies which indicate that staff knowledge, attitudes and confidence are related to their occupation. Why was this variable not been considered? Moreover, it could have been interesting to see whether staff knowledge, attitudes and confidence varied across different health and social care settings, for example, according to whether they worked in acute care, community mental health, primary care, pharmacies and care homes.

We agree with the reviewer that staff outcomes are influenced by staff occupation. The sample consists of people working in health and social care and we accounted for role in relation to the level of contact the staff would have with people living with dementia for example clinical staff, senior management etc. We found that staff role did not account for a significant amount of variance in staff outcomes.

Results

R1

Results
An explanation of variance and a greater explanation of the meaning of the statistics would be helpful for the reader.

We have clarified the meaning behind variance on page 12.

Presenting the results from highest to lowest in order by paragraph and within the paragraphs would be helpful.

The results have been rearranged as suggested.

It would be helpful to know how many out of the 18 training packages were tier 1, 2 or 3 and how many of the 14 subjects were addressed in the 18 packages included. How many of the packages had the components of effective education identified by Surr et al 2016?

This information is now included on page 11.

Were they all designed to impact on staff knowledge, attitudes (knowledge and comfort) and confidence? If many of these (how many?) were tier 1 awareness raising programmes it is unsurprising they had limited impact.

The majority of the packages were identified by respondents as providing tier 2 (n=10) or three (n=2) training and the learning outcomes they covered were mapped onto those within the Dementia Training Standards Framework. This covers knowledge skills-based outcomes and so should therefore aim to improve learner's knowledge and skills and through this their confidence.

We accounted for the Tier of training in our analyses in order to assess the impact of this as this is an important issue to consider in terms of the level and subject areas of training that health and social care staff receive. It is not correct to say that the Tier 1 programmes led to limited impact, as is highlighted in the results section of the paper. Completion of tier 1 training in combination with other factors. However, we did find completion of Tier 2 training associated with improved staff attitudes and Tier 3 with staff confidence. This is an important finding highlighted in the discussion as it indicates Tier 1 training alone is not enough to ensure health and social care staff have the right knowledge, attitudes and confidence to deliver good dementia care.

R2

Results: Participants: Line 11 and 12: 'Only packages with ten or more respondents were included in subsequent data analysis'. On what basis was this cut-off number taken?

The cut off number was based on the 'rule of thumb' advice that 10 cases/participants are required per variable of interest within a regression model (Tabachnick and Fidell, 2006).

Results: The findings pertaining to the staff reactions to the training course they completed (in terms of satisfaction, relevance, understanding, recommendation) are missing. Why are these results not included in this study?

There was a ceiling effect pertaining to reaction data with staff reporting very positive reactions to their training. Therefore this data was not included within the analysis. This is now stated on page 11 .

Discussion

R1

Discussion
Page 14, line 50 – a more nuanced interpretation of the data might be helpful – is that dementia

training per se has limited impact? Or is it that tier 1, tier 2 and or tier 3 training has? The reader can't tell as detail about the training packages is missing. It would be helpful to know if the training packages were designed to have impact on the factors that were measured.

We have now added more information regarding the training packages (see earlier comments). The majority of the training packages were at Tier 2 level. We found that Tier 1 had limited impact but Tier 2 had impact on staff attitudes and Tier 3 had impact on staff confidence. In general dementia education and training had limited impact on staff outcomes and explained less than 30% of the variance in staff outcomes. That is factors other than training influenced staff outcomes.

Page 15, line 14-18 you details the features that have the most impact on learning outcomes here, an earlier characterisations of the packages would be helpful to contextualise this.

We have added package characteristics as requested on page 11.

The findings on page 15 lines 20-28 are very interesting and have potentially have far reaching implications.

Thank you for noting.

Page 15 line 21 – my understanding is that tier 1 training is about awareness raising so perhaps not that surprising that most impactful on knowledge? Can we really expect tier 1 to be impactful across all the aspects measured? And these will be staff with little knowledge in the first place presumably? Tier 2 builds on knowledge and starts to do more reflective attitudinal work and tier 3 builds on that, is targeted at more experienced staff so the desired learning outcomes will be greater confidence. Another interpretation could be that the tiered approach to training is doing what it is intended to?

We agree with the reviewers interpretation and have amended this paragraph to reflect this, also highlighting the need for staff to receive more than just Tier 1 training

Page 15, line 34
We don't know what the training packages measured covered so this lengthy discussion of the Smith et al in the discussion feels new and unrelated. I appreciate the rationale as it relates to the previous paragraph and the need for more of the workforce to have access to tier 2 and 3 education, but wonder if it would be helpful to put some of this (that most education is tier 1) earlier in the paper and then return to it here?

We have now included the details pertaining to training package characteristics on page 11 as requested. We have shortened the discussion of Smith et al's audit but kept the main point, that is our findings demonstrate that Tier 2 and 3 training is required for attitudinal change yet the majority of the training available in England is at Tier 1.

Page 16 – lines 1 -16. Tier 2 and 3 is designed for those who have substantive contact with people with dementia, so is your point that this should be made more available? Training should be more targeted? I don't understand lines 9-16 – the point you are trying to make isn't clear.

We are suggesting that the more positive attitude and confidence may not be due to level of training but experience and contact with people living with dementia. Staff may acquire a more positive attitude without the training but via day to day experiences. We have amended the sentence to make this clearer.

Page 16 line 18-26 – a more nuanced reading and presentation of the findings would be helpful in light of the comments above

See response above

Page 17 – limitations – I think the sample reflects the demographics of the health and social care workforce – older women. Ceiling effect on confidence levels – I wonder if this is related to the CODE? what is your view?

Whilst possible the ceiling effect may be due to the CODE measure, it could also be due to the sample of health care professionals having been within their roles for a significant period of time. This would have fostered confidence and could possibly lead to a ceiling effect.

Page 17 lines 53 -55 – implications - is there something about education needing to be a) more targeted b) incremental in line with the tiered approach of the framework? The really important point about wanting to influence attitudes and build confidence through education that has depth and strong pedagogical underpinning is important and a more nuanced presentation of the findings would better support this.

We have added a sentence to reflect this important point on page 17.

General comment
The term 'impact on health and social care outcomes' I think refers to the learning outcomes of the dementia training standards framework and feel it would be clearer if the full term learning outcomes was used throughout to save any confusion.

We have adding learning outcomes where deemed appropriate to improve reader understanding.

Although i have ticked the major revision box as my comments makes it more than minor my feeling is that some more detail and nuance would resolve the issues i have raised and strengthen the paper.

Thank you for your feedback, we believe it has strengthened the paper. We hope we have addressed your queries sufficiently.

R2

Discussion: Can you suggest a rationale why the staff that reported to have attended the 'health and wellbeing' and the' families and carers as partners in dementia care' topics consistently scored lower in staff knowledge and attitudes?

This discussion has now been removed based on reviewer 1 comments.

In Page 15 Line 1 you found that staff characteristics, pedagogical factors and training content play on 30% of the variance in staff outcomes. Can you suggest what other factors beyond dementia education and training can play a part based on relevant literature?

The literature suggests there are a range of factors that may also influence staff feelings of confidence and competence to deliver dementia care these include 1) organizational climate and factors (Hunter et al) for example, the provision of practical support to implement care practices (Rivett et al, McCabe et al), promotion of staff autonomy and trust (McCabe et al) and how the organization supports implementation of training into practice and the delivery of good dementia care (Hughes et al); 2) individual factors (Hunter et al) for example staff burnout (McCabe et al) and staff attitudes (more positive attitude and intentions to implement PCC lead to greater confidence) confident (Mullan and Sullivan)

We have added a paragraph to the discussion section to highlight this and its implications for training programmes and strategy.

Page 13 Line 20-28: 'with perhaps the most interesting finding being that completion of tier one dementia education and training was most impactful for staff knowledge as measured by the KIDE [18], tier two training was most impactful on staff attitudes and tier three was associated with greater staff confidence' How did you arrive to this conclusion? The p-values related to 'Tier' in the tables do not indicate this?

The respondents who had completed Tier 2 and Tier 3 training had higher scores with regards to positive attitudes and confidence compared to those who had completed Tier 1.

Page 17 Line 9-12: 'The survey had a low response rate which may have been due to organisations not being able to reach relevant staff' What was the response rate then?

The response rate is difficult to ascertain as organisations were not able to inform of us of how many staff had been approached to complete the questionnaire.

The discussion needs to compare more the findings with relevant studies or studies with similar findings.

Based on reviewer 1 comments we have cited more recent and international studies within the literature review and discussion. However as noted it is difficult to compare findings as this study looked at overall impact of dementia training and components/aspects of this, whereas the majority of the literature focuses upon the impact of a single training programme on staff outcomes.

VERSION 2 – REVIEW

REVIEWER	Rhoda MacRae UWS, Scotland
REVIEW RETURNED	01-Oct-2020

GENERAL COMMENTS	Thank you for revising the paper in light of comments. It has been made clear in most instances that the authors are referring to learning outcomes, please ensure this is the case throughout the paper, there appear to be some instances where this has been omitted particularly in the latter parts of the paper. I appreciate you have made a note to self to update the order of and any new references. Page 8 - can you check this sentence again please? not sure it reads quite right and fully/clearly explains why the measures were chosen 'Measures of staff knowledge, attitudes and confidence were selected on the basis on the scales validity and reliability.' The newly added detail regarding training packages - can this be made slightly clearer? 16 were delivered as face to face, two incorporated e-learning - were these two solely online? three included mentoring and two utilised simulation - were these the face to face packages? . Six of the packages were categorised as Tier 1, 10 were Tier 2, and two were Tier 3. - which Tier were the elearning packages? Do you know the amount of hours of teaching per training package? Would the most popular subjects be usefully be presented in a table? I wonder if you can change 'focused' to 'included' in the sentence 'no package focused on pharmacological interventions' In the final paragraph, perhaps qualify again by adding 'in general' to the first sentence talking about training thank you for considering these suggestions. Once these are attended to the paper will be in a position to be accepted

REVIEWER	Anthony Scerri University of Malta
REVIEW RETURNED	19-Sep-2020

GENERAL COMMENTS	Thank you for including my suggestions

VERSION 2 – AUTHOR RESPONSE

We would like to thank the reviewer for their feedback.

It has been made clear in most instances that the authors are referring to learning outcomes, please ensure this is the case throughout the paper, there appear to be some instances where this has been omitted particularly in the latter parts of the paper.

We have been through the manuscript and made this clearer.

I appreciate you have made a note to self to update the order of and any new references.

This comment has now been removed. The numbering of the references is up to date.

Page 8 - can you check this sentence again please? not sure it reads quite right and fully/clearly explains why the measures were chosen: 'Measures of staff knowledge, attitudes and confidence were selected on the basis on the scales validity and reliability.'

The sentence has been amended to read

Measures of staff knowledge, attitudes and confidence were selected on the basis that the scales had previously demonstrated good validity and reliability.

The newly added detail regarding training packages - can this be made slightly clearer? 16 were delivered as face to face, two incorporated e-learning - were these two solely online? three included mentoring and two utilised simulation - were these the face to face packages? Six of the packages were categorised as Tier 1, 10 were Tier 2, and two were Tier 3. - which Tier were the elearning packages?
Do you know the amount of hours of teaching per training package?

The sentence has been amended to read as

Of the 18 packages included in the analysis, 16 were delivered as face to face (of which one incorporated e-learning, three included mentoring and one utilised simulation). One training package was delivered solely as an e-learning package and one as simulation based learning.

The training pack solely based on e-learning was categorised as Tier 1 and the other which was combined with face to face learning was Tier 2. We do not know the amount of hours of teaching per training package.

Would the most popular subjects be usefully be presented in a table?

We are happy to present this information as a table but presented it within text as we were limited to five tables as per journal guidelines.

I wonder if you can change 'focused' to 'included' in the sentence 'no package focused on pharmacological interventions'

Focused has now been changed to included.

In the final paragraph, perhaps qualify again by adding 'in general' to the first sentence talking about training

Added ‘in general’ to the first sentence of the final paragraph.

Thank you for your help in improving the readability of this article.

VERSION 3 – REVIEW

REVIEWER	Rhoda MacRae University of the west of Scotland
REVIEW RETURNED	16-Nov-2020

GENERAL COMMENTS	Many thanks for addressing the comments. A final proof read is all that is required.