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Filling in memory gaps through emotional communication; promising pathways in caring for persons with dementia

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A B S T R A C T
Objective: To explore in what way emotional communication can enhance the memory of people with (different types of) dementia. Methods: Relevant studies published after 2000 were searched using the terms: dementia, positive, words, communication, recall, and memory. Papers were included that reported results of studies with people with dementia that investigated memory effects of communication with either an emotionally valent content or context. Results: Twelve papers grouped under four prevailing themes (pictures, facial emotions, stories and words) are described. The studies provide mixed results: in some studies negative emotional information enhances memory in older people with dementia, in other studies positive emotional information is helpful or hardly any effect is found. Conclusion: Emotional communication seems to enhance memory in people with dementia. None of the studies described focused on the association between personally relevant, emotionally valent information and memory, so further research is needed. Practice implications: Caregivers in dementia care should realize that 1) the information they provide might carry an emotional valence, and 2) this valence might influence the extent to which people with dementia remember information.

1. Introduction

"My mother forgets almost everything. We need to tell her ten times a day that we already had lunch and listen to the same story about how she met my father 60 years ago over and over again. We just respond as if we never heard this before, which is okay. But, when I tell her just before running errands, that her oldest granddaughter has found her dream apartment, which she is very pleased to hear, she comes back to this news upon my return one hour later by saying: 'Really, I am so glad that she found a new apartment'! I have noticed this before, information with a positive emotional valence seems to be remembered better." [Daughter of 85-year old woman with dementia]

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http://dx.doi.org/10.1016/j.pec.2017.06.014 0738-3991/© 2017 Elsevier B.V. All rights reserved. If information is indeed remembered better or longer when it carries a positive emotional valence, this power of emotions might be used in a purposeful way to (temporarily) fill in gaps in the memory of older people with dementia. Apart from this direct therapeutic value, this could also lighten the burden of care for formal and informal caregivers. After all, as people with dementia increasingly struggle with initiating and performing daily activities as their condition deteriorates, at a given moment, their contact with caregivers is all that remains. Putting effort into increasing the quality and output of these contacts is therefore warranted.

It is an established fact that stimuli that are connected to emotions will be better remembered than non emotional or neutral stimuli [1]. An important question is whether this is also the case for persons with dementia. If so, this may have clinical implications. A second question is if a possible recall effect is dependent on the severity of the dementia.

Much research into the role of emotions in caring for people with dementia has focused on (autobiographical) memory for events and people that happened in the past; old pictures and

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S. van Dulmen et al./Patient Education and Counseling xxx (2017) xxx-xxx

narratives but also smells and music have shown to be comforting for people. This insight has successfully been applied to diminish disturbing and withdrawn behavior as part of multisensory stimulation ('snoezelen') integrated in dementia care [2]. If and to what extent memory deficits can (temporarily) be reduced by communicating in an - positive or negative - emotionally valent way, has, however, been studied less often. From clinical studies with somatically ill older people and with people without cognitive impairment, we know that emotions and memory go hand in hand; there is a positive association between information that carries an emotional valence and the extent to which this information is recalled correctly [3,4], the so-called emotional memory advantage (EMA). In investigating this EMA, it is relevant to distinguish different types of emotional communication; emotions can be communicated by presenting emotional stimuli such as pictures, words, faces and stories, or by embedding (neutral) stimuli in an emotional context [5].

There are more than 50 different types of dementia associated with lesions in different parts of the brain. At present, 270,000 persons are affected with dementia in the Netherlands. Around seventy percent of them have Alzheimer's disease (AD), in some combined with another type of dementia, such as vascular dementia. In AD, patients show degeneration of the internal temporal regions (hippocampus and amygdala). The hippocampus is involved in episodic memory, the amygdala in memory of emotional messages [5]. In patients with other types of dementia, lesions in other regions may dominate impacting emotional processes in a different way. In view of studying memory effects of emotional communication, it is also important to realize that the severity of dementia varies from mild to substantial cognitive impairments and can manifest itself in more or less maladaptive behavior and mood disturbances. So, information and emotions may be processed differently depending not only on someone's personality but also on the type and progression of the diagnosed dementia [6,7]. The main aim of the paper is to explore the literature for empirical knowledge supporting the greater enhancement in recall by means of emotional stimuli compared to neutral stimuli in persons with dementia.

2. Methods

As part of this rapid review [8] relevant studies published after 2000 were searched using Pubmed by applying different combinations of the terms: dementia, positive, words, communication, recall, and memory. A rapid review can be defined as "a type of knowledge synthesis in which components of the systematic review process are simplified or omitted to produce information in a short period of time" [8]. We aimed to include papers that reported results of studies with people with dementia that investigated memory effects of communication with either an emotionally valent content (e.g. pictures and words) or context (e.g. phrasing, tone or voice). The methods and results sections of the included studies were examined and described in chronological order.

3. Results

All papers resulting from our search focused on investigating memory effects of presenting stimuli such as pictures, faces, words and stories in an experimental setting instead of a clinical setting. In this paper we describe the methods and results of the twelve papers grouped under four prevailing themes (pictures, facial emotions, stories and words). Whether the emotional stimuli were introduced in a more or less positive or neutral way has not been investigated at all.

3.1. Pictures

Kensinger and colleagues investigated memory for emotional versus neutral stimuli (pictures and words) in 20 young adults, 20 older adults, and thirteen patients with AD [9]. The AD patients did not show better memory for emotional compared with neutral items. Older adults and AD patients showed no benefit from the context of emotional words, whereas young adults did remember more items embedded in an emotional versus a neutral context. Perrin et al. studied the effect of the emotional valence of neutral, negative or positive pictures (animals, persons or scenes) preceded or followed by an emotional dialogue (context) on free and cued (immediate) recall in fifteen patients with mild AD and fifteen agematched controls [5]. They showed that emotional content was related to recall in all subjects - positive pictures being remembered better than neutral pictures – but positive context enhanced free recall of pictures in healthy elderly only. The positive context was drawn from movies, not from a subject's personal life. A few years later, Gorenc-Mahmutaj et al. investigated recognition and free recall of similar pictures in subjects with mild (n = 27) and moderate (Alzheimer's or vascular) dementia (n=32), mild cognitive impairment (n=32) and controls (n=28) [4]. Overall, positive pictures were experienced with greater intensity. Positive pictures were also recalled more than negative pictures, both when assessed immediately and after 30 min (delayed recall). Recognition was slightly better for positive pictures. Sundstrøm investigated free, immediate recall and recognition of emotional objects (associated with birthday gifts) in 20 patients with AD and 20 healthy controls [10]. He found that patients with AD recalled emotional objects significantly better than neutral objects (nongifts). No such emotional enhancement effect was found in the control group or when assessing recognition.

3.2. Facial emotions

By investigating the recognition of positive and negative facial emotions among 71 patients with AD, Luzzi and colleagues found that this ability was largely preserved [11]. In 27% of the people, recognition was impaired. Maki et al. investigated the recognition of facial expressions (happiness, sadness, surprise, anger, disgust, and fear) and found that in patients with mild AD (n=12), recognition of happiness was relatively preserved, also against the influence of age and disease [12].

3.3. Stories

Kazui et al. investigated the effects of two short stories accompanying pictures in persons with AD (n=34) and age, gender- and education-matched healthy controls (n=10) [13]. In one story one passage was emotionally charged, in the other this passage was neutral. Both groups scored higher on recall of the story with emotionally charged content. Boller et al. examined whether the emotional content of a text displaying a neutral, happy or sad content influenced memory in ten patients with AD and twelve age-matched normal subjects [14]. They found that patients with AD recalled sad and, to a lesser extent, happy stories better than neutral stories. Similar findings resulted from assessing multiple choice recognition and identification of emotional content.

3.4. Words

Fleming and colleagues investigated immediate free recall of positive, negative and neutral emotionally valent words (e.g. friend, hate and thermometer, respectively) in patients with mild to moderate AD (N=25) versus young (n=27) and old (n=19)

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