Review Article

Interventions Aimed at Improving Knowledge, Detection Practices and Management of Dementia among Health Professionals.

Dr. Pushkar Singh Raikhola[1] Dr. Krishna Prasad Pathak[2] Tara Gaire[3]

[1]Monitoring Directorate, Tribhuban University, Nepal
[2]Nepal Open University, Nepal. Alzheimer Related Dementia Society Nepal.
[3]Department of Nursing, Innovative health science college

Abstract

The aim of this review was to synthesize the aggregated studies aimed at improving health care knowledge, detection practices and management of dementia among healthcare professionals (HPs). Healthcare professionals play a key role in the detection and management of dementia. However, there is a gap in the literature as to what represents best practice with regard to educating HPs in this area. We searched citation index Google scholar, Scopus and Pub Med, Medline, were searched for relevant articles from 2000-2019 without data limit. Inclusion criteria were (1) intervention studies aimed at improving HPs practices concerning dementia care (2) the educational intervention focused on knowledge, detection practice and management of dementia, and (3) peer-reviewed and written in English. Of 4968 articles identified, only 13 articles (six GPs, two clinical/organization care based, one nurse, one physician and affiliated staff and one with physician, manager and therapists based studies) were suitable for inclusion and these all were from developed countries. Seven studies were randomized controlled trials (RCTs), 1 prospective, 2 GPs and supervisors intervention, 1 cohort study, and 2 clinical /organizational care services clustered randomized study. Overall, the methodological quality of these studies was poor, particularly with regard to the methods utilized and sample sizes however, combined programs of, practice based workshops with community and multi-faced educational program were the most effective. The continuous educational intervention program can improve the health professionals' diagnosis and management knowledge, confidents and negative perception of dementia. HPs should be

supported to improve their knowledge, tackle behavioral problems associated with dementia, be made aware of services and be enabled to engage in more early diagnosis in primary care. Further intervention program should address the cultural change to facilitate long term improvements. Educational intervention program is crucial to the health professionals to get close to the diagnostic confidence.
Key words: *Dementia, knowledge, doctors, nurses, educational intervention.*

Background

In both, hospital settings and primary care healthcare professionals (HPs) play key role in the diagnosis of dementia. There is a need for better interventions to detect, prevent and ameliorate the impact of dementia. Dementia creates problems for HPs all over the world (Iliffe & Manthorpe, 2002) and presents a particular challenge for primary care providers (Illife, Walters & Rait. (2004), which do not adequately diagnosis it in the earlier stages of its cognitive impairment (Ambigaa, Suthahar *et al.*, 2011). GPs are often in the first position to observe patients (Van Hout, Vernooij-Dassen, Stalman, 2007) but are not effective in diagnosing dementia (Pucci, Angelerie, Borsetti *et al*., 2004). More than 50% cases are not diagnosed by the GPs in their practice (Boustani, Peterson, Hanson, *et al*., 2003). Moreover, the global challenge of dementia is compounded by the fact that it is under diagnosed and under treated in primary care across the underdeveloped world (Iliffe, Koch, Jain *et al.*, 2012).

The barriers to the appropriate treatment and management of dementia are considerable. Factors such as time, lack of knowledge and skills, misunderstanding of old age symptoms in diagnosing and treating dementia, fears associated with both false positives and false negatives, and fear of diagnostic errors can prevent HPs from starting an appropriate diagnostic work-up (Cahill, Clark, Walsh, O'Connell, Lawlor, 2006). Moreover, GP-related barriers include the absence of reliable screening tools, lack of time and financial reward, and limited access to neuropsychological consultations and neuro-imaging investigations (Turner, Iliffe, Downs *et al.*, 2004).

Dementia prevents problems for Nurses also. For example, the Alzheimer's Society, 1995[10] indicates that 71% have insufficient training in dementia management and poor awareness of the support services available for dementia. That said, nurses

have more opportunities to support patients and families relative to physicians. When a person with dementia is living at home, nurses are often more aware of the support networks available and the care services on offer than the patient's GP. They may also have an integral role to play in maintaining channels of communication with other professionals involved in the provision of care and treatment, such as community psychiatric nurses, social workers and voluntary agency staff. GP colleagues, nurses feel insufficiently prepared to provide dementia management service (Bryans & Wilcock, 2004). Overall, HPs consistently cite inadequate professional training and as the main influencing factors to their ability to provide an optimal service to demented patients in many researches (McCarty, Addington-Hall, Altmann, 1997). However, as of yet, it is unknown what method of training would most beneficial for HPs.

All the aforementioned is exacerbated by the fact that dementia can be present, but untreated in hospitals. The Royal College of Nursing (2013) reports that around a quarter of hospital beds are occupied by dementia patients. At the end of life many people with dementia (two thirds) spend time in hospital and die in hospital (Royal College of Nursing, 2013). Even though, institutionalization is not the end-point of caregiver interventions though demented patients dying due to the longevity of hospital admission procedure compared to similar people without dementia (Sampson, Gould, Lee, Blanchard, 2006). Likewise, people with dementia receive less palliative care compared with similar individuals without dementia in UK hospitals (Royal College of Nursing, 2013). HPs need to be more aware of palliative care frameworks.

Up to now, no more review has been published to bring out the study results aiming the improving knowledge, detection practices and management of dementia among health professionals. That review identified only six studies, and concluded that educational interventions for primary care that require active participation to improve detection of dementia (Perry, Drašković, Lucassen *et al*., 2010). They showed on their systematic review moderate a positive result was improved with the skills of dementia and management. Five articles reported at least some effects of the interventions and small group workshop and a decision support system (DSS) increased dementia detection rates. Likewise, in a 2-hour interactive seminar raised GPs' suspicion of dementia. Adherence to dementia guidelines only improved when an educational

intervention was combined with the appointment of dementia care managers. This combined intervention also improved patients' and caregivers' quality of life. The effects on knowledge and attitudes were showed minor that educational interventions alone did not seem to increase adherence to dementia guidelines.

Our study builds upon a systematic review of educational interventions in primary care and decided to analyze the improving knowledge, detection practices and management of dementia among health professionals. We found that health professionals' knowledge, diagnosis and management skills are significantly improved. Among of them eleven articles- six GPs based, two clinical/organization care based, one nurses based, one physician and affiliated staff and one with physician, manager and therapists based studies were found. Combined educational intervention program can improve to detect, manage and care of dementia patients in the hospital settings. Newly developed dementia knowledge guidelines for GPs/physicians can be used in improving the skills. Moreover, registered nurse (RN) and physician practice based workshops with community services, certain level of dementia care training, and decision based support system are more effective in managing and to decrease the negative attitudes of dementia care. That helps to link between care providers,' community, dementia clinicians and caregivers. A comprehensive dementia care management model resulted in few differences in providers' knowledge or attitude.

Aim: To synthesize the aggregated studies aimed at improving health care knowledge, detection practices and management of dementia among HPs.

Methods

We searched citation index Google scholar, Scopus, Pub Med/ Medline, Embase, PsycInfo, Cinahl for relevant articles without limit. We did not include abstract of conferences, references to review articles/systematic reviews. We used following search terms; Dementia AND health professionals AND intervention, Dementia AND physicians AND intervention, Dementia AND primary care doctors AND intervention, Dementia AND primary care doctors AND knowledge, dementia AND primary care physicians AND knowledge, dementia AND primary care, physicians AND dementia management, dementia AND knowledge and nurse, Dementia AND primary care physicians AND diagnosis, Dementia AND Nurse as well as, we applied following

inclusion criteria (1) intervention studies aimed at improving HPs practices concerning dementia care (2) the educational intervention focused on knowledge, detection practice and management of dementia, and (3) peer-reviewed and written in English.

Data extraction

Data were on the basis of health professional's performances, practices and their skills on dementia detection, knowledge, attitude and leaning effectiveness. As well as the sample size of study, strategies of intervention, follow up were obtained.

Data analysis

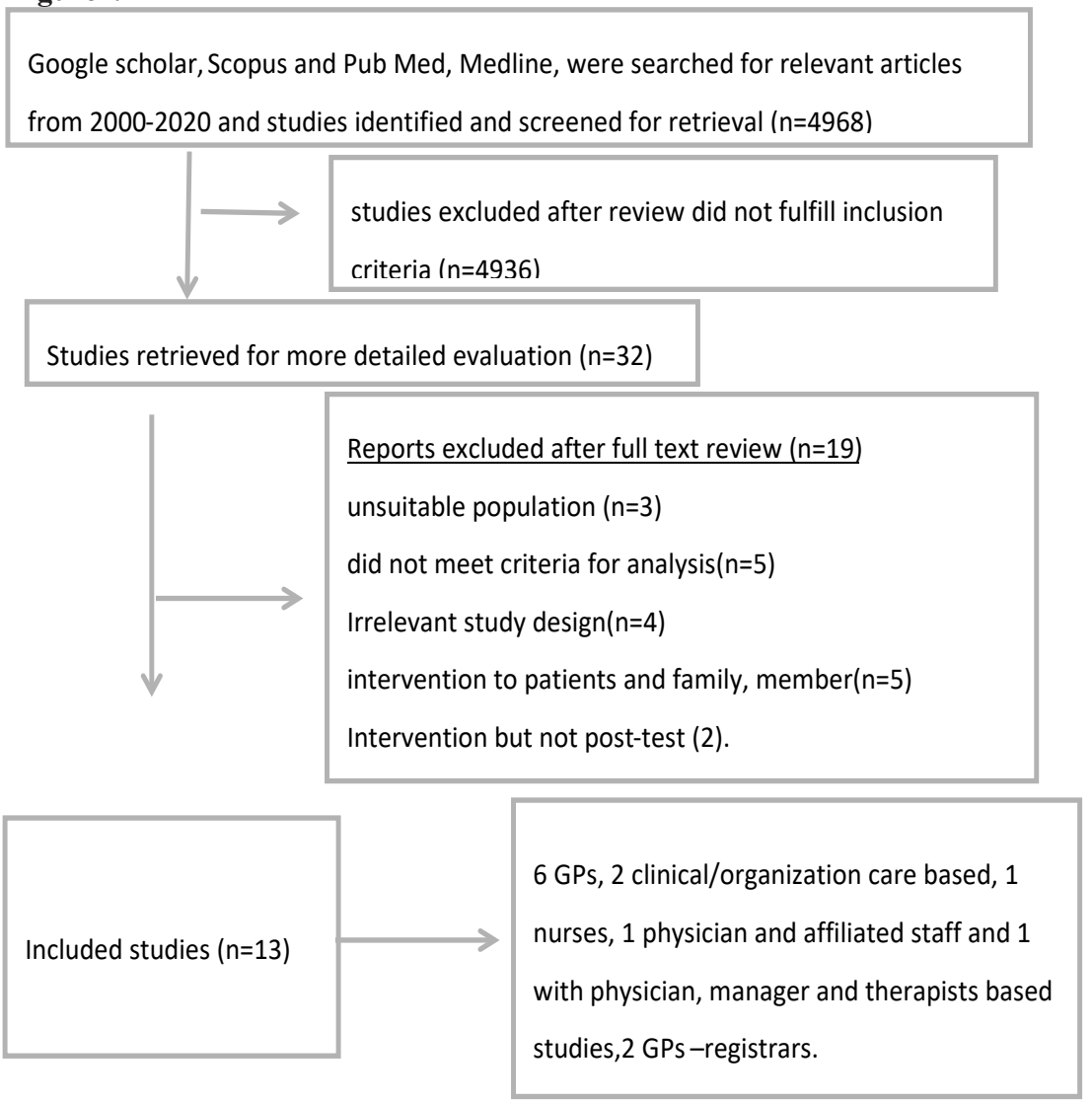
We carried out a narrative synthesis of results. Because of its sample size, of eligible studies may have not been appropriate, that shows with the large diversity of outcomes.

Results

In a pre-selection of this study, the search strategy identified 4968 in different data base;

Google scholar, Scopus and Pub Med, Medline, were searched for relevant articles from 2000-2020 were searched for relevant articles without date limit. Only 13 studies (Seven randomized controlled trials (RCTs), 1 prospective, 1 cohort study, 2 studies GPs registrants and supervisor and 2 clinical levels/organizational care services clustered randomized) were suitable for inclusion and all these were form developed countries. Three studies were conducted in UK, 1 in Denmark, 1 in France, 3 in USA, 2 German, 2 from Australia and 1 in the Netherlands targeted with health professionals. In order to be included the articles had to be original, focus mainly on health professionals. This has been shown in figure 1. Among of them eleven studies-six studies were concerned with GPs, two studies were concerned clinical level/ organization care service based, one study was fully on nurses' based intervention, one study with physicians and affiliated staff and one study was with physician including one manager and 2 occupational therapists based study was found.

Figure1.



These studies indicated the strongly positive improvement of knowledge, diagnostic rate, confidences and management skills with the dementia. However, one study showed no effect of intervention with the aspects of attitude or care quality perceptions across intervention and usual care providers (Downs, Turner, Bryans, *et al.*, 2006).

Overall, the methodological quality of these studies was poor, particularly with regard to the methods utilized and sample sizes. The majority six studies were indicating a positive improvement in the GPs's skill (of knowledge, diagnostic rates, confidences and management) with the dementia after the intervention. The majority of studies were indicated a positive improvement of knowledge, diagnostic rates, confidences and management skills with the dementia. Two studies were revealed that the dementia management is more difficult in primary care than usual-care providers (Turner, Iliffe, Downs, *et al.*, 2004, Vollmar, Mayer, Ostermann *et al.,* 2010, Bryans, Keady, Turner *et al.,* 2003). Multi- faced educational program for neurologist was more effective in improving the adaption of dementia guidelines in German study (Vickrey, Mittman, Connor et al., 2006).

Diagnostic and management barriers were related to; time factors, lack of social support, lack of appropriate guidelines, and lack of knowledge- dementia diagnostic domain should handle by specialist than the GPs (Lathren, Sloane, Hoyle, Zimmerman, Kaufer, 2013). A large proportion of registered nurses demonstrated the need of training in the regarding of dementia people care (Mukadam, Cooper, Kherani, Livingston *et al*., 2014). Our review indicates that HPs should be supported to improve their knowledge, tackle behavioral problems associated with dementia, be made aware of services and be enabled to engage in more early diagnosis in primary care. Likewise, combined educational intervention program, practice based workshops with community can improve detection, management and care of dementia patients in the hospital settings. Such initiatives help to improve the link between care providers' community and dementia clinicians. Further intervention program should address the cultural change to facilitate long term improvements in care and management.

In an USA study, a dementia guideline–based disease management program led to substantial improvements in quality of care for patients with dementia (Döpp, Graff, Teerenstra *et al*., 2013). In one-day intervention, after six months, the physicians and affiliated staffs felt the highly confidence in all areas of dementia clinical skills. Additionally, majority physicians (87%) had used the test of cognitive screening test by the staff member and administration (Grol & Grimshaw, 2003).

Discussion

The aim of this review was to synthesize the aggregated studies aimed at improving health care knowledge, detection practices and management of dementia. As like Perry M et al., 2006, we found that the significantly improving diagnostic knowledge, attitude and practices with the health professionals as well as their management and care to the dementia in primary care (Perry, Drašković, Lucassen, *et al*., 2010). A good quality of evidence with GPs and nurses intervention education and their multiple visits can increases skill of earlier dementia diagnoses, management and caring in the dementia patients. That helps to minimize cost and time for detection and management to the health professionals. So all the intervention need to address the effects of intervention however our findings suggest good quality intervention are essential to test the effectiveness and cost effectiveness to increase dementia detection rate (Mukadam, Cooper, Kherani, Livingston *et al*., 2014). Turner S. et al., (2004) explores in his study- one third (UK) GPs were felt lacking the appropriate epidemiological knowledge, management and caring aspects, behaviors changes, support services and little chance or offer to have demented patients in clinical practice (Turner, Iliffe, Downs *et al.*, 2004). The collaboration between physicians and occupational therapists may lead to appropriate referrals service to the patients to the community services (Döpp, Graff, Teerenstra *et al*., 2013).

Definitely, a blended intervention approach seems appropriate. Effective interventions seem to be multifaceted interventions (Grol & Grimshaw, 2003). Mostly, GPs were success to increase their detection rate of dementia after the intervention but the increased number of suspected cases was later decelerated by experts. Moreover, it showed that information on dementia and application of simple psychometric tests could improve the precision of a GP's diagnosis without changing the efficacy of detection of dementia (Rondeau, Allain, Bakchine et al., 2008). Mostly interventions have shown effective to the neurologist for adapt the guideline but less implementation remains to the GP (Rosen, Chow, Greenbaum *et al*., 2002). As well as in a comparison the practice based workshops with booklet and decision support software are more appropriate for physicians than others approach like; seminar, video and questionnaires models. Current research/interventions program are only conducted in the population of white health professionals, white patients with multicultural society, multi-ethnics

groups and effectiveness also should adjust in the intervention in large groups. An individual test score cannot be definite, but it can indicate the raw knowledge of pre assumption of dementia diagnosis to the health professionals.

Applied intervention studies do not concern to evaluate/relationships between competence and performance outcomes. Even though Larthren CR et al., (2013) found that dementia management skill/confident was more improving with physicians after 6 months training as well as there was no difference on the outcomes on the basis of duration of training. Participated physicians were self-rated confidence to distinguish Alzheimer and other forms of dementia, to provide information about community services, dementia educations to the patients and to use the screening instruments (Chodosh, Berry, Lee *et al*., 2006). Moreover, between the intervention and usual-care providers could not find difference results on the terms of age, graduation years, medical specialty, practice experiences and patients ages (OIafsdottir & Marcusson, 1996). The measured areas were on the aspects of knowledge of treatment, depression treatment, delirium evaluation and safety of patients.

The finding of Vickrey BG et al., (2006) provides evidence that can improve in quality of care for patients with complex, chronic condition of disease by dementia guideline–based disease management program that led to improvement in quality of care for patients with dementia and helps for systems change, including use of care managers for achieving meaningful. And also the intervention can modify for institutionalized patients and for those without a usual source of care and stable insurance (Vickrey, Mittman, Connor et al., 2006). Even though, after taking the intervention program with GPs suspicion of dementia detection rate was two-fold higher. Probably it may increase with age of patients and decrease with education status. However, with the GPs the intervention could not increase the number of diagnosed rate of dementia, but increased the number of suspected cases of correctly to detect dementia patients. Also, practical action- evidence-based guideline, internet based learning materials and questionnaire were applied to measure the potential effects of knowledge Results showed educational intervention was positively increased to gain knowledge between GPs (Vollmar, Butzlaff, Lefering, Rieger, 2007). A Controlled study showed that of those who (GPs) read the guideline, 88% found it to be applicable in primary

care (Waldroff, Rishoi, Waldemar, 2005). Likewise, two current Australian studies concluded that selected educational interventions can improve of GPs attitude and confidence (Mason et al., 2020). That helps to reduce negative frame of mind towards dementia and need to include elementary content of dementia characteristic, causes, risk and health promotion in educational workshops for both trainee and experienced GPs which will be more fruitful to develop overall dementia knowledge (Mason et al., 2020).

Conclusions

In this review we identified only 13 articles, mostly were cluster randomized controlled trials, which looked at the effects of education/training/support programs for health professionals, doctors and nurses. We found evidence of awareness of dementia is increasing in the health professional but it is not sufficient in the current situation and there is considerable misunderstanding with regard to dementia. Educational intervention for health professionals are required to cope with mis-diagnose and underestimation of dementia at first visit of consultation.

we suggest appropriate priorities for better improvement efforts to dementia further research is essential to clarify reasons for particular gaps between guidelines, intervention approach and practice and to evaluate specific intervention.

Limitation of the study

In this review there is risk of missing studies due to the file drawer problem that refers to the fact that important data has been missed due to it being unpublished. The majority of the studies involved doctors and nurses from developed countries. The number of eligible studies was comparatively small and some studies were had significant methodological limitations. The intervention components varied considerably, which makes comparison across studies difficult.

Implications for future

This results can be used by policy makers to make appropriate national policies to improve skills in the dementia diagnosis and management by the training and educational program. Furthermore, organizational interventions, like improvement of diagnostic and social referral services or appointment of dementia care managers, as well as financial strategies, like payment for attending training or adequate reimbursement

for the care provided, could contribute to behavioral change in daily practice. In this study, our outcomes reflect only health professionals in the hospitals. So, in order to understand the whole organizational mechanisms, community responsibility and governmental procedure of change at the most relevant health care level, the effects of an intervention should be studied on all above mentioned levels simultaneously. Probably, these kinds of studies may help for effective educational interventions.

References

Ambigaa D, Suthahar A *et al.* (2011). *Diagnosis and management of mild cognitive impairment in the community: what is the role of primary care physicians?* Malaysian family physician 6 (2&3):74-78.

Boustani M, Peterson B, Hanson L, *et al*. (2003). *Screening for dementia in primary care: a summary of the evidence for the US preventive services task force.* Ann Int Med; 138: 927–937.

Bryans M, Keady J, Turner S *et al.* (2003). *An exploratory survey into primary care nurses and dementia care,* Br J Nurs. 1029-37.

Bryans M, & Wilcock J. (2004). *Issues for nurses in dementia diagnosis and management. Nursing times, net;* Vol: 97, Issue: 44:30.

Cahill S, Clark M, Walsh C, O'Connell H, Lawlor B. (2006). *Dementia in primary care: the first survey of Irish general practitioners,* Int J Geriatr Psychiatry 21(4): 319–324.

Chodosh J, Berry E, Lee M *et al*. (2006). *Effect of a Dementia Care Management Intervention on Primary Care Provider Knowledge, Attitudes, and Perceptions of Quality of Care,* J Am Geriatr Soc; DOI: 10.1111/j.1532-5415.2005.00564.x.

Döpp C ME, Graff M JL, Teerenstra S *et al*. (2013). Effectiveness of a multifaceted implementation strategy on physicians' referral behavior to an evidence-based psychosocial intervention in dementia: a cluster randomized controlled trial. BMC Family Practice; 14:70.

Downs M, Turner S, Bryans M, *et al.* (2006). *Effectiveness of educational interventions in improving detection and management of dementia in primary care: cluster randomized controlled study,* bmj.com; 332:692.

Grol R. & Grimshaw J. (2003). *From best evidence to best practice: effective implementation of change in patients' care,* Lancet; 362(939):1225-1230.

Iliffe S, & Manthorpe J. (2002). *Dementia in the community: challenges for primary care development,* Clinical Gerentlogy: 243-252.

Illife S, Walters K, Rait G. (2004). *Short comings in the diagnosis and management of dementia in primary care: towards an educational strategy,* Aging and mental health 4(4): 286- 291.

Iliffe S, Koch T, Jain P, *et al.* (2012). Developing an educational intervention on dementia diagnosis and management in primary care for the EVIDEM-ED trial, BioMed Central; 13:142.

Lathren CR, Sloane PD, Hoyle JD, Zimmerman S, Kaufer DI. (2013). Improving dementia diagnosis and management in primary care: a cohort study of the impact of a training and support program on physician competency, practice patterns, and community linkages. BMC Geriatrics; 13:134.

Mason R, Doherty K, Eccleston C, Winbolt, M., Long M., Robinson A. (2020). Effect of a dementia education intervention on the confidence and attitudes of general practitioners in Australia: a pretest post-test study. *BMJ Open* 10:e033218. doi:10.1136/ bmjopen-2019-033218.

McCarty M, Addington-Hall J, Altmann D. (1997). *The experience of dying with dementia: a retrospective study,* Int J Ger Psych;12: 404-9.

Mukadam N, Cooper C, Kherani N, Livingston G *et al*. (2014). A systematic review of interventions to detect dementia or cognitive impairment, Int J Ger Psych; In press).

OIafsdottir M. & Marcusson J. (1996). Diagnosis of dementia at the primary care level, Acta Neurol Scand; Suppl. 165: 58-62.

Perry M, Drašković I, Lucassen P, *et al*. (2010). Effects of educational interventions on primary dementia care: A systematic review. Int J Ger Psych.; 1-11. doi: 10.1002/gps.2479.

Pucci E, Angelerie F, Borsetti G, *et al*. (2004). General practitioners facing dementia: are they fully prepared? Neurol Sci: 24:384–389.

Rondeau V, Allain H, Bakchine S et al. (2008). General practice-based intervention for suspecting and detecting dementia in France: A cluster randomized controlled trial1. Dementia.; 7: 433; DOI: 10.1177/1471301208096628.

Rosen CS, Chow HC, Greenbaum MA *et al*. (2002). *How well are clinicians following dementia practice guidelines?* Alzheimer Dis Assoc Disord; 16(1):15-23).

Royal College of Nursing, (2013). Dementia, Scoping the role of the dementia nurse specialist in acute care. www.rcn.org.uk/dementia**.**

Sampson EL, Gould V, Lee D, Blanchard MR. (2006). Differences in care received by patients with and without dementia who died during acute hospital admission: a retrospective case note study, Age and Ageing 35:187–9.

Turner S, Iliffe S, Downs M, *et al.* (2004). *General practitioners' knowledge, confidence and attitudes in the diagnosis and management of dementia.* Age and Ageing 33(5): 461–467.

Van Hout H.PJ, Vernooij-Dassen M J., Stalman WAB (2007). *Diagnosing dementia with confidence by Gps.* Oxford university press.

Vickrey BG, Mittman BS, Connor KI, et al. (2006). *The effect of a disease management*

intervention on quality and outcomes of dementia care: a randomized, controlled trial, Ann Intern Med; 145(10): 713–726.

Vollmar HC, Mayer H, Ostermann T *et al.* (2010). Knowledge transfer for the management of dementia: a cluster-randomized trial of blended learning in general practice, Implementation Science ; **5**:1. doi:10.1186/1748-5908-5-1.

Vollmar HC, Butzlaff ME, Lefering R, Rieger M.A. (2007). Knowledge translation on dementia: A cluster randomized trial to compare a blended learning approach with a "classical" advanced training in GP quality circles, BMC Health Serv. Res., 7, 92.

Waldroff FB, Rishoi S, Waldemar G. (2005). *Identification and diagnostic evaluation of possible dementia in general practice. A prospective study.* Scand. J. Prim. Health Care, 23, 221–226.