
CHAPTER 1

Health, ageing and the context of care

KAREN BRYAN AND JANE MAXIM

Population issues

Across the EU, people over 65 form 17% of the population (ONS 2002a). The UK had a population of 59.2 million at the last census in 2001. For the first time, people over 60 form a larger part of the population (21%) than children under 16 (20%). There has also been a large increase in the number of people over 85: now 1.1 million, which is 2% of the population. In England and Wales there are 336 000 people aged 90 and over, and of these nearly 4000 are providing 50 or more hours of care to another family friend or carer.

Older people receive a large proportion of health and social care spending. In 2000, £28 billion were spent on hospital and community care with nearly two-fifths of this spend on people aged 56 and over (ONS 2001). In England and Wales, 5.2 million people provide informal care, including a million who provide more than 50 hours a week and 1.6 million who are in full-time work.

A major public health issue for the next century is the increase in the number of older people in the UK from ethnic minority groups (OPCS 1993). As of 2000, the largest ethnic group was Indian (984 000 people), then Caribbean and African descent (969 000) and Pakistani and Bangladeshi descent (932 000). Initiatives for these groups have tended to focus on physical health, and this together with the traditional stigma of mental illness in some ethnic groups has led to the relative neglect of older people from ethnic minorities (Rait et al. 1996). The term 'triple jeopardy' has been used to describe the challenges of racism, ageism and in some cases socio-economic deprivation faced by older people from ethnic minority backgrounds (Norman 1985).

Who are older people and where do they live?

Single-pensioner households make up 14.4% of all households, and more than two thirds of these have no access to a car. Many older people live alone: 52.5% of women and 25.7% of men aged 75–84, and 54.5% of women and 36.9% of men aged 85 and over.

The number of places in residential care for older people peaked at 247 000 in 1998, but fell to 237 000 in 2001 due to a levelling off of places available in the private sector and continued reduction in public sector places (ONS 2002b). Around 2 million children or children-in-law provide informal care to older adults living in another household and that figure has remained relatively stable between 1985 and 1995, although there has been a shift from children as the most likely carers to spouses. However there has been a 25% decline in intergenerational care within the same home. This is thought to be associated with trends such as more women working outside the home and the previous rise in institutional care (Pickard 2002).

Attitudes to older people and their health

Greengross et al. (1997) described ageing as a subject that should be top of world agendas. There are more older people living longer with increasingly fewer resources to care for them. Shifts in government policy in developed countries have encouraged preservation of independence. Emphasis is being placed upon providing support to enable people to live with age-related degenerative conditions such as dementia (Benbow and Reynolds 2000). Care of older people is a recognized specialism within medicine and other health professions. Another positive development is that age discrimination is considered a negative factor to be avoided and age is not now a valid criterion to restrict access to services (National Service Framework for Older People, DH 2001). Much has been written about the benefits of preventive care and the need to manage degenerative difficulties rather than accept them as an inevitable consequence of older age. For example, the effects of reduced hearing on communication and psychosocial functioning are recognized (Heine and Browning 2002) and studies have shown that intensive support for older people with hearing difficulty produces significant improvements in social functioning (Sherbourne et al. 2002).

The boundary between cognitive changes associated with normal ageing and those associated with dementia is accepted as unclear (Figure 1.1). The Nun study showed that education may function as a buffer to protect against the effects of dementia on ageing (Snowdon et al. 1996). However, the study also showed that pathological changes associated with Alzheimer's disease are present in the brains of those older sisters who do not show dementia, suggesting that other factors such as environment

and lifestyle may mediate in pathological processes (Stern et al. 1994). These findings are helpful in encouraging professionals to take positive attitudes towards the support and care of older people with dementia. In Chapter 3 we look at the contribution of general practice and in Chapter 9 at measures to support carers; Chapter 7 examines whole-system approaches to dementia.

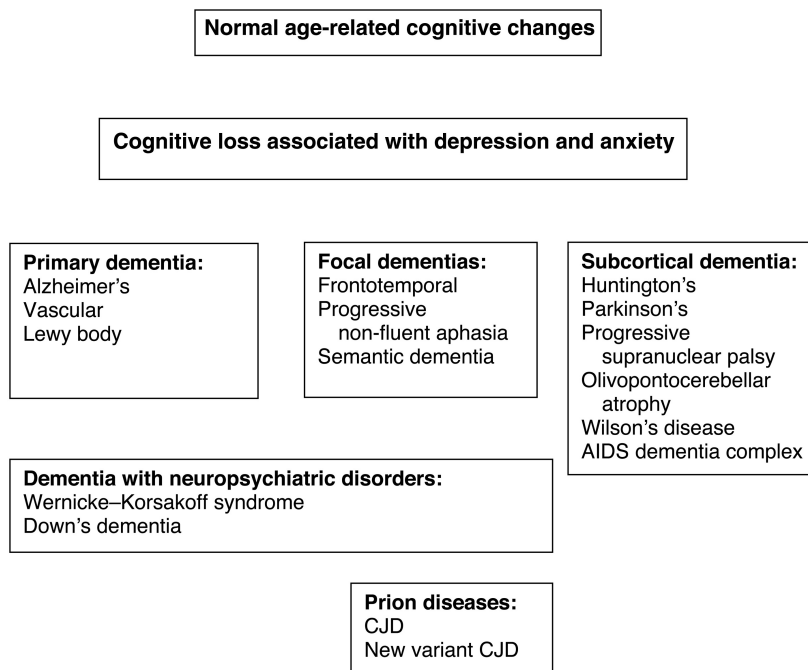


Figure 1.1 Cognitive changes in normal ageing and dementia.

Overview of language and ageing

Age-related reduction in cognitive functioning (including language) has received much attention in recent years (see Nussbaum et al. 1996 for a review of ageing and communication). The traditional view of decline in functioning across the board has long since been shown to be an inaccurate and simplistic view. Losses and gains are now considered, with age-related decline often a function of the exact task. For instance, recognition of pictures and completion of word stems have been convincingly shown to be age-invariant memory tasks (Park 2000). Salthouse (1991) described four mechanisms hypothesized to account for age-related differences in cognitive functioning:

- speed at which information is processed
- working memory function
- inhibitory function (affecting the ability to focus by inhibiting unwanted information)
- sensory function.

These factors need to be distinguished from actual changes in language functioning. The effects of health problems such as cardiac or peripheral vascular disease on cognitive functioning also need to be distinguished from normal ageing (Elwood et al. 2002).

A further important factor is individual variation. Parameters such as education, experience and cognitive style will influence the effects of ageing. Christensen (2001) reported, from an extensive longitudinal study of older people in Australia, that education, good health, genetic factors (such as absence of the APOE epsilon ϵ allele) and activity were protective of cognitive decline, and that diversity in cognitive ageing suggests that more than one process may be operating to produce cognitive decline. Butler et al. (2004) reviewed the evidence for cognitive decline in normal ageing and concluded that social engagement, intellectual stimulation and physical activity play a key role in maintaining cognitive health and preventing cognitive decline. Factors such as circadian rhythms may also influence processing. Yoon (1997) found that older people's preference for reading the paper and shopping first thing in the morning related to their tendency to be more energetic and mentally alert in the morning.

Age-related changes in cognitive functioning may also result in developmental 'gains' (Dixon 2000):

- Gains despite or independent of constraints provided by losses, e.g. logical, abstract thinking (Sinnott 1996) and the concept of 'wisdom' (Baltes and Staudinger 1993) are thought to emerge post young adulthood.
- Gains as losses of a lesser magnitude, i.e. that some consolation may be taken from cognitive losses that emerge later than expected, at a level less than feared or predicted or at a level that does not impair everyday skills. For example, the Seattle study suggested that 90% of older people in four age groups maintain at least two intellectual abilities (Schaie 1996).
- Gains as a function of losses, i.e. occasioned by losses or that compensate for losses, for example, collaborative experiences during assisted performance (Dixon and Gould 1998).

Attention is a complex area, with no evidence for older people having an automatic decline and assessment findings very much reflecting exact task demands. There is some evidence that older people have difficulty in directing attention, but the exact effects of ageing versus pathology on attention remain uncertain (Perry and Hodges 1999).

Memory is also a complex area of cognition, with considerable interaction between variables such as task demands, familiarity and mode of

response (see Stevens et al. 1999). Craik (2000) summarizes what professionals dealing with older people should be aware of in terms of memory functioning, particularly during assessment. It should be expected that older people might be less accurate in recalling recent events, especially if these involve specific details of time and place. Telephone conversations or interviews should avoid complex instructions or questions. Priming effects may have more influence for older people, e.g. providing examples may bias older respondents' choice of answers. Reduced perceptual clarity (visual or auditory) may reduce immediate memory for initial alternatives in a multiple-choice format. The decline in working memory capacity may also bias answers to the most recently presented alternative. Repetition of information may result in that information being viewed more favourably.

Older people may also have sensory losses that affect communication functioning. Age-related decline in hearing (presbycusis) is very common, with 2.5 million people in the UK over the age of 70 thought to have hearing impairment that would benefit from an aid (Hanratty and Lawlor 2000). See Chisholm et al. 2003 for a review of age-related deafness. There are also age-related changes in relation to speech perception. Wingfield (2000) highlighted four important principles relating to adult ageing and spoken language comprehension. The extent to which these broad principles are important to any older individual will depend on their individual profile:

- Older people will use top-down information drawn from linguistic context to supplement an impoverished bottom-up signal (as do younger people under difficult listening conditions). Provision of contextual information will therefore assist comprehension.
- Older people have difficulty in processing speech structures that place a burden on working memory. Therefore long sentences, sentences whose comprehension requires memory for referents that occurred far previously in the passage and sentences with high prepositional density or complex syntax should be avoided.
- Normal prosody (intonation, timing and stress) assists older listeners by aiding the rapid detection of the linguistic structure and the semantic focus of an utterance. Exaggerated prosody (often associated with 'elderspeak') should be avoided (Brown and Draper 2003).
- Pausing at natural processing units (such as sentences and clauses) allows additional time for speech processing and increases comprehension relative to rapid speech.

Age invariance (preservation of a skill despite ageing) has been demonstrated for many aspects of language comprehension and production (Kemper and O'Hanlon 2000). Where age-related changes occur, for example in the comprehension of complex syntax, these reductions are hypothesized to reflect working memory constraints. More recent studies suggest that immediate syntactic processing is age-invariant, although

post-interpretive processes required for text integration and discourse comprehension may be vulnerable to age-related working memory reduction (Kemtes and Kemper 1997). Older people tend to adopt strategies of parsing text into smaller units and utilizing background information, resulting in few difficulties in processing narrative prose (Radvansky and Curiel 1998).

For language production, ageing is associated with sensory changes such as dry mouth and muscular changes that result in slowing of motor production. These changes should be regarded as contributing to reductions in efficiency rather than deficits (Xue et al. 2001). Changes in dentition, particularly ill fitting dentures and absent teeth or dentures, can also affect speech production (Roessler 2003).

It is important to exclude other possible reasons for a cognitive impairment before assuming a deficit or a reduction in functioning. For example, older people tend to take more medication than younger people, and are more prone to medication side effects (Swift 2003). Drugs which work on the central nervous system, such as some analgesics and sleeping medications, may depress cognitive functioning and may affect testing.

However, recent research has also shown that older people's daily capabilities often appear not to reflect the age-related 'decline' discussed above (Park and Gutches 2000). There is considerable evidence that older people function well in most aspects of daily life and work. Two aspects of the ageing cognitive system appear to facilitate functioning:

- Knowledge is maintained across the lifespan and may even increase (Echt et al. 1998), providing an extensive knowledge base for problem-solving and addressing the needs of everyday life.
- Frequent and familiar behaviours become automatized and therefore require little cognitive recourses to perform (Jacoby et al. 1996).

Thus older people can successfully cope with the cognitive demands of complex medication regimes. Park et al. (1999) showed that older people made fewer errors than middle aged people in taking medication for rheumatoid arthritis. Literature is also emerging on positive advantages to older people of working (Park 1994), and on their ability to perform at a high level particularly where they are expert or in a familiar environment and where they continue to train and update their skills (Salthouse et al. 1996).

Recent approaches to older people with dementia

Drug therapies have demonstrated benefits for people with Alzheimer's disease. Studies have assessed benefits of drug therapies in terms of cognitive function, global severity, behaviour, activities of daily living and burden of care. At present the benefits of various drugs are being

researched (Birks and Harvey 2003, Areosa Sastre et al. 2004, Loy and Schneider 2004). The NICE appraisal consultation document on donepezil, rivastigmine, galantamine and memantine suggests that the effects are limited and do not assist all patients (NICE 2005). However, there is now renewed interest in demonstrating the benefits of behavioural and psychological interventions (see Clare and Woods 2001 for a review of cognitive rehabilitation).

The concept of treatment has though challenged traditional assumptions that people with dementia cannot be treated. Rehabilitation for older people has been firmly enshrined in the NHS Plan for older people (DH 2000) and researchers are beginning to recognize the relevance of cognitive rehabilitation for people with dementia (Camp and Mattern 1999). Clare and Woods (2001) state that:

defining rehabilitation as a process of active change aimed at enabling people who are disabled by injury or disease to achieve an optimal level of physical, psychological and social function implies a focus on maximizing functioning across a whole range of areas including physical health, psychological well-being, living skills, and social relationships. Such an approach is just as important for people with dementia and other progressive disorders as it is for people with non-progressive acquired brain injury. (pp. 193–194)

Bayles and Esther (2003) also advocate the value of behavioural interventions to enhance communicative functioning for people with dementia. Alternatives to the medical model of dementia, for example Kitwood's dialectal model (Kitwood 1997; see Chapters 7 and 8 for more information on Kitwood's approach) and Sabat's social constructionist model (Sabat 1994), give a theoretical basis for an approach to dementia that addresses the needs of people with dementia and their carers, taking into account the influence of biology, individual psychology, and social environment. Hagberg (1997) suggests that intervention should aim to enhance coping skills and self-efficacy, combat threats to self-esteem and help the person with dementia to make the best possible use of their individual resources. The evidence base for interventions aimed at enhancing language and communication is beginning to emerge.

The evidence base for speech and language therapy intervention in dementia

In the following sections, the evidence for speech and language therapy (SLT) interventions is discussed, considering reduction or mediation of the losses and programmes designed to enhance language for patients with dementia. Interventions designed for carers and the issues involved in working with people with dementia via carers are discussed in Chapter 9.

Mediation of functional losses

In vascular dementia, improvement in language ability and new learning can occur when the disease process is controlled (Swinburn and Maxim 1996) (see Chapter 4). Communication in semantic dementia can be maintained and enhanced by specific interventions such as utilizing the beneficial effects of personally relevant autobiographical memory and re-training concepts within a personally relevant context (Snowden and Griffiths 2000) (see Chapter 5). Communication difficulties in Korsakoff's dementia associated with memory difficulties have been shown to respond to a validation approach to communication management where all behaviour is treated as having meaning and involves responding positively to what a person says (Bryan and Maxim 1998). The possibility of treatment, particularly drug treatments for Alzheimer's disease, has given new impetus to the need for accurate and early assessment and has helped to challenge excessively negative associations about dementia (see Chapter 6).

There are indications that language processing deficits in some dementias may be due to difficulty in accessing information such as vocabulary rather than to complete loss of such information (Bayles et al. 1991, Nebes and Halligan 1996, Arkin et al. 2000). For example, in the semantic (or meaning) system, people with probable Alzheimer's disease may be able to recognize items that they cannot name and may be able to classify them according to semantic categories (e.g. animals versus flowers), therefore indicating preservation of underlying knowledge (Maxim et al. 2000). Priming or cueing by providing relevant information have therefore been established as ways of assisting naming. Recent work also shows that access to the semantic system can be maintained in Alzheimer's disease despite disease progression (Bell et al. 2000, Maxim et al. 2000).

Arkin et al. (2000), in a multiple baseline study, demonstrated significant explicit learning, as well as implicit learning and semantic activation in a group of people with probable Alzheimer's disease, who participated in an eight-session programme. Some were able to name previously unnamed items and all produced new vocabulary items which had not been used in the programme. Arkin (1998), Arkin et al. (2000) and Arkin and Mahendra (2000) have used similar techniques to demonstrate recall and recognition of world and autobiographical events. Mahendra (2001) published a detailed review of interventions for improving the communicative performance of individuals with Alzheimer's disease. Hopper et al. (1998), using a more controversial intervention, found that giving dolls and soft toys to people with probable Alzheimer's disease had an effect on the relevance of their communication. In a case study design, four women produced significantly more relevant information when toys were present.

Other studies have examined the effectiveness of modification of communication to improve communication with people with dementia. Experimental studies have demonstrated that people with probable Alzheimer's disease have difficulty understanding if syntax is complex or

sentences have a greater number of words (Kempler et al. 1998); both repetition and rephrasing may be useful techniques in the therapeutic repertoire but require that the person with probable Alzheimer's disease is given time to process and respond. Ripich et al. (1999) found that giving a choice of answers or asking questions requiring only a yes/no response resulted in better conversation with people with probable Alzheimer's disease than open-ended questions. Small et al. (2003), in an empirical assessment of strategies recommended to families of people with probable Alzheimer's disease, found that simplified sentences and yes/no questions produced significantly more effective communication but slow speech did not improve communicative outcome.

Effective communication programmes for patients

Not all communication interventions are necessarily implemented by speech and language therapists and, indeed, given the limited SLT resource, delivering a programme is more likely to fall within the remit of care workers assisting health professionals (see Chapter 7 for a discussion of whole-team approaches to communication in dementia and the interface between these approaches and the specific interventions provided by SLT). Delivering such programmes requires that an appropriate skill mix is available within the multidisciplinary team. Powell (2000) reviews the evidence for the value of communication and discusses efficacy issues, stating that:

an overall aim of intervention should be to improve 'quality of life' – a notoriously complicated outcome to measure.

Studies of the efficacy of a specific intervention in dementia are seldom carried out to the high standard of randomized controlled trials, but Bourgeois (1991), who conducted an extensive review of the diverse literature relating to the treatment of communication disorders in dementia, concluded that, despite the heterogeneous populations involved, positive outcomes had been reported.

Cochrane reviews are drawing together research that suggests reality orientation and reminiscence are of value (Spector and Orrell 1999, Spector et al. 1999, see also Spector et al. 2003) while the position on validation therapy is not clear (Neal and Briggs 2003) (see Chapter 8 for discussion of these techniques).

However, reviewing evidence that specifically addresses SLT involvement shows that SLT-managed intervention in the dementias may enhance communication. Clark (1995) called for a paradigm shift to move from a focus on skill improvement per se to a broader quality of life orientation, although there is still a need to address the efficacy of such programmes.

Shadden (1995) describes the application of discourse analysis to planning communication interventions in long-term care settings. Orange

et al. (1995) describe the application of a communication enhancement model for people with Alzheimer's disease in a single case study. Bourgeois et al. (1997), in a multiple baseline study, trained caregivers to use written cues to reduce repetitive verbal behaviours over a 12 week period and found that carers still maintained use of the cues 6 months after the study. In a single-case study, Brush and Camp (1998) demonstrated that a similar technique was effective in a feeding programme. Burgio et al. (2001) found that care assistants specifically trained to conduct individually tailored communication skill enhancement programmes could improve and maintain communication skills without increasing the amount of time delivering care.

Mahendra and Arkin (2003) showed that a comprehensive cognitive linguistic intervention programme for people with mild to moderate Alzheimer's disease administered by students who were trained and supported by speech and language therapists resulted in maintained or improved performance on multiple discourse outcome measures. Mahendra and Arkin (2003) and Maxim et al. (2001) suggest that speech and language therapists have a valuable role as trainers and supervisors of non-professional rehabilitation partners.

Orange and Ryan (2000) mention the importance of communication between patients with dementia and their physicians, and suggest that speech and language therapists can be effective in enabling other professionals to modify their communication to address the needs of people with dementia. Such evidence suggests that speech and language therapists have a role in assisting other professionals to achieve effective communication with patients who have dementia.

More information on SLT intervention is given in other chapters of the book relating specifically to different forms of dementia (see Chapters 5, 7, 8 and 10). In Chapter 11 the evidence base for SLT intervention is given from an American perspective, reflecting much similarity of approach and an international perspective on the evidence, as would be expected with electronic databases and a willingness to learn from the good practice in other settings.

The evidence base for SLT intervention to enhance communication in dementia is therefore emerging. It is by no means complete, and there is an urgent need for more research into the effects of SLT to be funded. In particular, the evidence for SLT provision within the multidisciplinary team needs to be demonstrated. There is also a need for individual speech and language therapists and departments working with people with dementia to disseminate their work, write up case studies and publicize benefits of SLT such as successful integration of a patient with communication problems into a day care setting, advocacy roles or reduction in carer burden. Such case studies are included in Chapter 8.

At the same time the policy agenda and the views of older people support the drive for increased rehabilitation for older people including those with dementia.

Services for older people

The NHS Plan (DH 2000) and the National Service Frameworks for mental health and for older people (DH 1999, 2001) set the context for services for older people with mental illness. The policy agenda is one of active rehabilitation and access to appropriate specialisms as necessary. However, not all older people with mental health problems have equal access to SLT, given current service disparities across the UK. There is a need to develop more services and enhance those that already exist (see Chapter 10). The recent Royal College of Speech and Language Therapists' Position Paper on Speech and Language Therapy for People with Dementia (RCSLT 2005) provides a comprehensive case for SLT and is written to inform service managers and commissioners.

Empowerment of older people

Older people's views are recognized as important. Easterbrook (1999) showed that older people had definite views about their care and expected to be consulted about this. Older people are active users of resources such as the internet, and are often well informed about health issues. Researchers have shown that even people with advanced dementia can be involved in research studies that evaluate treatment (Vaas et al. 2003). Ethical issues in end-of-life care for people with dementia are actively being debated (Coetzee et al. 2003, De Vries et al. 2003) and the need to involve people with dementia and their carers in care decisions is now widely advocated (Wilkinson and Milne 2003).

The context for examining language difficulties associated with older age mental health conditions and management of the resulting communication problems is therefore one of optimism. Older people are an increasing and ever more powerful sector of the population (through factors such as voting numbers), whose rights to good quality health provision including rehabilitation are strongly advocated.

References

- Areosa Sastre A, McShane R, Sherriff F (2004) Memantine for dementia. Cochrane Databases Reviews Issue 4. John Wiley & Sons, Chichester, UK.
- Arkin SM (1998) Alzheimer memory training: positive successes replicated. *American Journal of Alzheimer's Disease* 13: 102–104.
- Arkin SM, Mahendra N (2000) Structured information retrieval training yields implicit and explicit learning gains in Alzheimer's patients. Poster presented at the 28th Annual Meeting of the International Neuropsychological Society, Denver.
- Arkin SM, Rose C, Hopper T (2000) Implicit and explicit learning gains in Alzheimer's patients: effects of naming and information retrieval training. *Aphasiology* 14: 723–742.

- Baltes PB, Staudinger UM (1993) The search for a psychology of wisdom. *Current Directions in Psychological Science* 2: 75–80.
- Bayles KA, Esther KS (2003) Improving the functioning of individuals with Alzheimer's disease: emergence of behavioural interventions. *Journal of Communication Disorders* 36: 327–343.
- Bayles KA, Tomoeda CK, Kaszniak AW, Trosset MW (1991) Alzheimer's disease effects on semantic memory: loss of structure or function. *Journal of Cognitive Neuroscience* 3: 166–182.
- Bell EE, Chenery HJ, Ingram JCL (2000) Strategy-based semantic priming in Alzheimer's dementia. *Aphasiology* 14: 949–965.
- Benbow SM, Reynolds D (2000) Challenging the stigma of Alzheimer's disease. *Hospital Medicine* 61: 174–177.
- Birks JS, Harvey R (2003) Donepezil for dementia due to Alzheimer's disease. *Cochrane Databases Reviews Issue 3*. John Wiley & Sons, Chichester, UK.
- Bourgeois MS (1991) Communication treatment for adults with dementia. *Journal of Speech and Hearing Research* 34: 831–844.
- Bourgeois MS, Burgio LD, Schulz R, Beach S, Palmer B (1997) Modifying repetitive verbalizations of community dwelling patients with AD. *Gerontologist* 37: 30–39.
- Brown A, Draper P (2003) Accommodative speech and terms of endearment: elements of a language mode often experienced by older adults. *Journal of Advanced Nursing* 41: 15–21.
- Brush JA, Camp CJ (1998) Spaced retrieval during dysphagia therapy: a case study. *Clinical Gerontology* 19: 96–99.
- Bryan K, Maxim J (1998) Enabling care staff to relate to older communication disabled people. *International Journal of Language and Communication Disorders* 33: 121–126.
- Burgio LD, Allen-Burge R, Roth DL et al. (2001) Come talk with me: improving communication between care assistants and nursing home residents during routine care routines. *Gerontologist* 41: 449–460.
- Butler RN, Forette F, Greengross S (2004) Maintaining cognitive health in an ageing society. *Journal of the Royal Society for the Promotion of Health* 124(3): 119–121.
- Camp CJ, Mattern JM (1999) Innovations in managing Alzheimer's disease. In: Biegel DE, Blum A (eds) *Innovations in Practice and Service Delivery Across the Lifespan*. Oxford University Press, New York.
- Chisholm TH, Willott JF, Lister JJ (2003) The aging auditory system: anatomic and physiologic changes and implications for rehabilitation. *International Journal of Audiology* 42(2): 3–10.
- Christensen H (2001) What cognitive changes can be expected with normal ageing. *Australian and New Zealand Journal of Psychiatry* 35: 768–775.
- Clare L, Woods R (2001) Cognitive rehabilitation in dementia. *Neuropsychological Rehabilitation (special issue)* 11(3): 193–517.
- Clark LW (1995) Interventions for persons with Alzheimer's disease: strategies for maintaining and enhancing communicative success. *Topics in Language Disorders* 15: 47–65.
- Coetzee RH, Leask SJ, Jones RG (2003) The attitudes of carers and old age psychiatrists towards the treatment of potentially fatal events in end-stage dementia. *International Journal of Geriatric Psychiatry* 18: 169–173.
- Craik FIM (2000) Age-related changes in human memory. In: Park DC, Schwarz N (eds) *Cognitive Aging*. Psychology Press, Philadelphia.

- De Vries K, Sque M, Bryan K, Abu Saad HH (2003) Variant Creutzfeldt–Jacob disease: need for mental health and palliative care team collaboration. *International Journal of Palliative Nursing* 9: 512–520.
- DH (1999) National Service Framework for Mental Health. Department of Health. HMSO, London.
- DH (2000) NHS Plan. Department of Health. HMSO, London.
- DH (2001) National Service Framework for Older People. Department of Health. HMSO, London.
- Dixon RA (2000) Concepts and mechanisms of gains in cognitive aging. In: Park DC, Schwarz N (eds) *Cognitive Aging*. Psychology Press, Philadelphia.
- Dixon RA, Gould ON (1998) Younger and older adults collaborating on retelling everyday stories. *Applied Developmental Science* 2: 160–171.
- Easterbrook L (1999) *When We Are Very Old – Reflections on the Treatment, Care and Support of Older People*. King's Fund, London.
- Echt KV, Morrell RW, Park DC (1998) Effects of age and training formats on basic computer skill acquisition in older adults. *Educational Gerontology* 17: 282–293.
- Elwood PC, Pickering J, Bayer A, Gallacher JEJ (2002) Vascular disease and cognitive function in older men in the Caerphilly cohort. *Age and Ageing* 31: 43–48.
- Greengross S, Murphy E, Quam L et al. (1997) Aging: a subject that must be at the top of world agendas. *BMJ* 315(7115): 1029–1030.
- Hagberg B (1997) The dementias in a psychodynamic perspective. In: Miesen BML, Jones GMM (eds) *Care-giving in Dementia, Research and Applications*, Vol. 2. Routledge, London.
- Hanratty B, Lawlor DA (2000) Hearing impairment in the older population. *Journal of Public Health Medicine* 22: 512–517.
- Heine C, Browning CJ (2002) Communication and psychosocial consequences of sensory loss in older adults: overview and rehabilitation directions. *Disability and Rehabilitation* 24: 763–773.
- Hopper TL, Bayles KA, Tomoeda CK (1998) Using toys to stimulate communicative function in individuals with Alzheimer's disease. *Journal of Medical Speech and Language Pathology* 6: 73–80.
- Jacoby JJ, Jennings JM, Hay JF (1996) Dissociating automatic and consciously-controlled processes: implications for diagnosis and rehabilitation of memory deficits. In: Hermann DJ et al. (eds) *Basic and Applied Memory Research: Theory in Context* (vol. 1). Erlbaum, New Jersey.
- Kemper S, O'Hanlon L (2000) Semantic processing problems of older adults. In: Best W, Bryan K, Maxim J (eds) *Semantic Processing: Theory and Practice*. Whurr, London.
- Kempler D, Almor A, Tyler LK et al. (1998) Sentence comprehension deficits in AD: a comparison of offline versus online sentence processing. *Brain and Language* 64: 297–319.
- Kemtes KA, Kemper S (1997) Younger and older adults' online processing of syntactically ambiguous sentences. *Psychology and Aging* 8: 34–43.
- Kitwood T (1997) *Dementia reconsidered: the person comes first*. Open University Press, Buckingham, UK.
- Loy C, Schneider L (2004) Galantamine for Alzheimer's diseases. *Cochrane Databases Reviews Issue 4*. John Wiley & Sons, Chichester, UK.
- Mahendra N (2001) Direct interventions for improving the performance of individuals with Alzheimer's disease. *Seminars in Speech and Language* 22(4): 291–304.

- Mahendra N, Arkin SM (2003) Effects of four years of exercise, language and social interventions on Alzheimer discourse. *Journal of Communication Disorders* 36(5): 395–422.
- Maxim J, Bryan K, Zabihi K (2000) Semantic processing in Alzheimer's disease. In: Best W, Bryan K, Maxim J (eds) *Semantic Processing: Theory and Practice*. Whurr, London.
- Maxim J, Bryan K, Axelrod L et al. (2001) Speech and language therapists as trainers: enabling care staff working with older people. *International Journal of Language and Communication Disorders* 36: 194–199.
- Neal M, Briggs M (2003) Validation therapy for dementia. *Cochrane Library (Oxford)* 2.
- Nebes RD, Halligan EM (1996) Sentence context influences the interpretation of word meaning by Alzheimer patients. *Brain and Language* 54(2): 233–245.
- NICE (2005) National Institute for Clinical Excellence Appraisal Consultation Document: Alzheimer's disease – donepezil, rivastigmine, galantamine and memantine (review). www.nice.org.uk
- Norman A (1985) *Triple Jeopardy: Growing Old in a Second Homeland*. Centre for Policy on Ageing, London.
- Nussbaum JF, Hummert M-L, Williams A, Harwood J (1996) *Communication and Older Adults*. Sage, Thousand Oaks, CA.
- ONS (2001) Hospital and community health service expenditure: by age of recipient 1999–2000. *Social Trends* 32. Office for National Statistics, HMSO, London.
- ONS (2002a) 2001 Census – first results. *Population Trends* 110 (Winter). Office for National Statistics, HMSO, London.
- ONS (2002b) Places available in residential care homes: by sector. *Social Trends* 33. Office for National Statistics, HMSO, London.
- OPCS (1993) *Census: ethnic groups and country of births, Vol 1/2*. Office of Population Censuses and Surveys, HMSO, London.
- Orange JB, Ryan EB (2000) Alzheimer's disease and other dementias: implications for physician communication. *Clinics in Geriatric Medicine* 16: 153–173.
- Orange JB, Ryan JB, Meredith SD, MacLean MJ (1995) Application of the communication enhancement model for long-term care residents with Alzheimer's disease. *Topics in Language Disorders* 15: 20–35.
- Park DC (1994) Aging, cognition and work. *Human Performance* 7: 181–205.
- Park DC (2000) The basic mechanisms accounting for age-related decline in cognitive function. In: Park DC, Schwarz N (eds) *Cognitive Aging*. Psychology Press, Philadelphia.
- Park DC, Gutchess AH (2000) Cognitive aging and everyday life. In: Park DC, Schwarz N (eds) *Cognitive Aging*. Psychology Press, Philadelphia.
- Park DC, Hertzog C, Leventhal H et al. (1999) Medication adherence in rheumatoid arthritis patients: older is wiser. *Journal of the American Geriatrics Society* 47: 172–183.
- Perry J, Hodges JR (1999) Attention and executive deficits in Alzheimer's disease. *Brain* 122: 383–404.
- Pickard L (2002) The decline of intensive intergenerational care of older people in Great Britain 1885–1995. *Population Trends* 110. HMSO, London, pp. 31–41.
- Powell JA (2000) Communication interventions in dementia. *Reviews in Clinical Gerontology* 10: 161–168.

- Radvansky GA, Curiel JM (1998) Narrative comprehension and aging: the fate of completed goal information. *Psychology and Aging* 13: 69–79.
- Rait R, Burns A, Chew C (1996) Age, ethnicity, and mental illness: a triple whammy. *BMJ* 313: 1347–1348.
- RCSLT (2005) Position Paper on Speech and Language Therapy Provision for People with Dementia. Royal College of Speech and Language Therapists, London.
- Ripich D, Ziolo E, Fritsch T, Durand EJ (1999) Training Alzheimer's disease caregivers for successful communication. *Clinical Gerontologist* 21(1): 37–56.
- Roessler DM (2003) Complete denture success for patients and dentists. *International Dental Journal* 53: 340–350.
- Sabat SR (1994) Excess disability and malignant social psychology: a case study of Alzheimer's disease. *Journal of Community and Applied Social Psychology* 4: 157–166.
- Salthouse TA (1991) *Theoretical Perspectives on Cognitive Aging*. Erlbaum, Hillsdale, NJ.
- Salthouse TA, Hambrick DZ, Lukas KE, Dell TC (1996) Determinants of adult age differences on synthetic work performance. *Journal of Experimental Psychology* 71: 432–439.
- Schaie KW (1996) *Intellectual Development in Adulthood: The Seattle Longitudinal Study*. Cambridge University Press, New York.
- Shadden BS (1995) The use of discourse analyses and procedures for communication programming in long-term care facilities. *Topics in Language Disorder* 15: 75–86.
- Sherbourne K, White L, Fortnum H (2002) Intensive rehabilitation programmes for deafened men and women: an evaluation study. *International Journal of Audiology* 41: 195–201.
- Sinnott J (1996) The developmental approach: Post formal thought as adaptive intelligence. In: Blanchard-Fields F, Hess TM (eds) *Perspectives on Cognitive Change in Adulthood and Aging*. McGraw-Hill, New York, pp. 122–162.
- Small JA, Gutman G, Makela S, Hillhouse B (2003) Effectiveness of communication strategies used by caregivers of persons with Alzheimer's disease during activities of daily living. *Journal of Speech Language Hearing Research* 46: 353–367.
- Snowden JS, Griffiths H (2000) Semantic dementia: assessment and management. In: Best W, Bryan K, Maxim J (eds) *Semantic Processing Theory and Practice*. Whurr, London.
- Snowdon DA, Kemper SJ, Mortimer JA et al. (1996) Linguistic ability in early life and cognition function and Alzheimer's disease in later life: findings from the nun study. *JAMA* 275: 528–532.
- Spector A, Orrell M (1999) Reality orientation for dementia: a review of the evidence of effectiveness. *Cochrane Library* (Oxford) 1.
- Spector A, Orrell M, Davies S, Woods RT (1999) Reminiscence therapy for dementia. *Cochrane Library* (Oxford) 2.
- Spector A, Thorgrimsen L, Woods B et al. (2003) Efficacy of an evidence-based cognitive stimulation therapy programme for people with dementia. *British Journal of Psychiatry* 183(3): 248–254.
- Stern Y, Gurland B, Tatemichi TK et al. (1994) Influence of education and occupation on the incidence of Alzheimer's disease. *JAMA* 271: 1004–1010.
- Stevens FCJ, Kaplan CD, Ponds RWKM, Diedericks JPM, Jolles J (1999) How ageing and social factors affect memory. *Age and Ageing* 28: 379–384.

- Swift CG (2003) The clinical pharmacology of ageing. *British Journal of Clinical Pharmacology* 56: 249–253.
- Swinburn K Maxim J (1996) Multi-infarct dementia: a special case for treatment? In: Bryan K, Maxim J (eds) *Communication Disability and the Psychiatry of Old Age*. Whurr, London.
- Vaas AA, Minardi HA, Ward R et al. (2003) Research into communication patterns and consequences for effective care of people with Alzheimer's and their carers. *Dementia* 2: 21–48.
- Wilkinson H, Milne AJ (2003) Sharing a diagnosis of dementia: learning from the patient's perspective. *Aging and Mental Health* 7: 300.
- Wingfield A (2000) Speech perception and the comprehension of spoken language. In: Park DC, Schwarz N (eds) *Cognitive Aging*. Psychology Press, Philadelphia.
- Xue SA, Neeley R, Hagstrom F, Hao JP (2001) Speaking F-O characteristics of elderly Euro-American and African-American speakers: building a clinical comparative platform. *Clinical Linguistics and Phonetics* 15: 245–252.
- Yoon C (1997) Age differences in consumers' processing strategies: an investigation of moderating influences. *Journal of Consumer Research* 24: 329–342.