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Social class, dementia and the fourth age

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Abstract Research addressing social class and dementia has largely focused on measures of socioeconomic status as causal risk factors for dementia and in observed differences in diagnosis, treatment and care. This large body of work has produced important insights but also contains numerous problems and weaknesses. Research needs to take account of the ways in which ageing and social class have been transformed in tandem with the economic, social and cultural coordinates of late modernity. These changes have particular consequences for individual identities and social relations. With this in mind this article adopts a critical gaze on research that considers interactions between dementia and social class in three key areas: (i) epidemiological approaches to inequalities in risk (ii) the role of social class in diagnosis and treatment and (iii) class in the framing of care and access to care. Following this, the article considers studies of dementia and social class that focus on lay understandings and biographical accounts. Sociological insights in this field come from the view that dementia and social class are embedded in social relations. Thus, forms of distinction based on class relations may still play an important role in the lived experience of dementia.

Keywords: dementia, Alzheimer's, social class, inequalities, social inequalities in health status, ageing

Introduction

The only known images of Auguste are a series of four asylum photographs taken around 1902, the most well known being sepia stained which makes Auguste appear to be dirty and her features somewhat swarthy, with a sorrowful expression and dressed in the asylum nightshirt she is denied the more modest attire for a lady of the time.

(Page and Fletcher 2006: 579)

It is now over a hundred years since Alois Alzheimer described Auguste D, a middle-aged woman, whose symptoms included depression, hallucinations and loss of memory. In their review of the case, Page and Fletcher (2006) argue that the medical asylum regime under which she was treated did little to maintain her sense of self. They picture her as a voiceless victim whose biography is ignored and erased by medical concerns; a criticism that resonates with contemporary critiques of biomedical approaches to dementia (Kitwood and Benson 1995). In response, they attempt to reconsider the person behind the illness and situate Auguste D as a 51-year-old, working-class Protestant woman who grew up in the class-driven hierarchical society that, by the time of her death in the opening years of the 20th century, was a fully formed Imperial Germany. While their ability to reconstruct her social background and everyday life is constrained by the records available, their work is an

important reminder of the need to situate the lives of people suffering from dementia today within their social context and their own biographies.

The experience of dementia is not a universal process and different sociocultural understandings and conceptualisations have a profound influence over responses to the symptoms of dementia in different places and at different times. For example, some have argued that the western emphasis on cognitive skills and capacities leads to particular understandings of and responses to dementia that may foster stigma and fear among those who suffer from the illness (Cipriani and Borin 2015). Dementia attacks our memory and thus our capacity to maintain and build social relations. This suggests that the social and cultural background to our relationships may be an important prism for understanding the lived experience of dementia. There is now a strong body of research showing that social interaction (measured by contacts, participation and networks) is associated with the incidence of dementia in the general population at a level that is on par with education, physical inactivity and depression in later life (Kuiper *et al.* 2015). Research addressing social class and dementia has largely focused on occupational class and other measures of socioeconomic status (SES) as risk factors for dementia; or as potential explanatory factors for observed differences in diagnosis, access to treatment and care and individual understandings of disease and illness. This large and diverse body of work has produced important insights but also contains numerous problems and weaknesses. Research needs to be placed in the context of the radical social transformations that have occurred over the last 40 years or more (Archer 2007, 2010). It is also important to view class in terms of personal trajectories and biographies. While discourses of class may not be explicit, everyday accounts of 'ordinariness' can still reveal the ways in which inequalities and suffering are legitimised and naturalised (Crompton 2006, Skeggs 2011, Skeggs and Loveday 2012). As both ageing and social class have been transformed in tandem with the economic, social and cultural coordinates of late modernity, there are important questions to ask of how practices of distinction are enacted and where inequalities can take root in later life (Jones and Higgs 2013). These changes have particular consequences for individual identities and social relations and consequently impinge on social understandings and individual experiences of dementia. In particular, changes in lay normative responses to both class and dementia will affect how and under what circumstances people value each other (Sayer 2002, 2005).

Following on from the above, this article adopts a critical gaze on research that considers interactions between dementia and social class in three key areas: (i) epidemiological approaches to inequalities in risk; (ii) the role of social class in diagnosis and treatment; and (iii) class in the framing of care and access to care. In doing so the article will argue that in addition to existing conceptual and empirical problems associated with social class in the field of ageing research there are specific issues that relate to dementia research in each of the above areas. One way of addressing these problems is to give greater weight to the changes that have occurred in recent years to normative accounts of class and of ageing. Dementia and class are embedded in social relations and, with this in mind, the article then turns to studies of dementia and social class that focus on lay understandings and biographical accounts of dementia.

Epidemiological approaches to inequalities in risk

The term 'dementia' describes a clinical syndrome that covers a range of difficulties in memory, language and behaviour that lead to impairment. Within this is a range of sub-types, with Alzheimer's disease being the most common, followed by vascular dementia, mixed dementia and dementia with Lewy bodies. But the science of dementia remains open to disagreement (Innes 2009) and this has implications for diagnosis (Robinson *et al.* 2015) and estimates of prevalence (Matthews *et al.* 2013). Bearing this in mind, studies have

shown there is a higher risk of Alzheimer's disease and dementia in those with lower SES in a range of settings and countries, including Mexican Americans (Al Hazzouri *et al.* 2011), and older people in Italy (Marengoni *et al.* 2011) and Israel (Goldbourt *et al.* 2007). The evidence, however, is equivocal. For example, a study in a Canadian inner city setting found age and comorbidity were more strongly correlated with a diagnosis of dementia than SES (Fischer *et al.* 2009) and a study of Catholic clergy in the USA found that early life SES was related to cognition in later life but not to the risk of Alzheimer's disease (Wilson *et al.* 2005). One of the key problems here is that SES tends to be an umbrella term for a wide range of indicators, from occupational class, subjective measures of status and hierarchy, to measures of income and wealth at different points in time. Thus, some studies that have examined SES and dementia have concluded there is an inverse association between income and risk of dementia (Yaffe *et al.* 2013), while others have concluded that there is no such association (Kim *et al.* 2012) and yet others suggest the association is confounded by education (Chen *et al.* 2012, Karp *et al.* 2004). These latter studies also indicate that the educational or cognitive capacities effect appears to hold in different cultures and national contexts while the socioeconomic effect may vary cross-culturally. Moreover, studies that focus on income as a measure of SES face the issue of income levels fluctuating over the life course with subsequent fluctuations in the association (Anttila *et al.* 2002).

Life-course epidemiology has started to address the extent to which the socioeconomic environment in childhood and early adulthood may influence the risk of dementia in later life (Norton *et al.* 2011, 2014, Tschanz *et al.* 2013). For example, a meta-analysis of 11 prospective cohort studies in the UK based on over 86,000 men and women (Russ *et al.* 2013) found that women who left full-time education early had an increased risk of dementia death. However, this relationship was not apparent for men and indeed, occupational social class was not statistically significantly associated with dementia death in either men or women. An analysis of UK data indicates that, while there appears to be an association with years spent in education, there was no link between social class and dementia (Yip *et al.* 2006). Such studies have also focused on the relationship between cerebrovascular disease and dementia, drawing on evidence linking social class and educational level with cerebrovascular disease through behavioural pathways and making further links to the lowering of dementia risk. An analysis of UK cognitive function and ageing studies (CFAS)¹ data, however, found that, while there were significant differences in risk, the absolute differences based on class and education were small (Brayne *et al.* 2006).

Researchers have postulated a number of explanatory frameworks linking factors in the early life with dementia in later life (Hogervorst and Clifford 2013). Links have been drawn between low SES and harmful lifestyles across the life course with stress and a range of chronic health problems in later life that are also related to dementia (McEwen *et al.* 2010). Evidence for a link between smoking and risk of dementia in later life is strong (Zhong *et al.* 2015) and there may be cohort effects that are related to variations in declining smoking patterns by social class. One pathway focuses on higher levels of IQ in childhood, providing access to higher levels of social, cultural and economic capital in adulthood that protect against illnesses, including dementia. The pathways are clearly complex and a focus on lifestyles is overly simplistic. Parental social class, for example, may be viewed as important because it may mean a healthier environment in childhood. Moreover, maternal health is viewed by some as an important determinant of child health with concomitant effects in mid-life. Risks are transferred across generations and there is an increasing focus on the role of epigenetics in foetal and child development, influencing pathways to dementia in later life.

As previously noted however, studies often suffer from problems of measurement, confounding and reverse causality (Deaton 2013, Lynch *et al.* 2004). A key problem for scholars studying dementia is that SES and education are interrelated, making it difficult to

untangle both their relative effects and causal properties. The association between income and dementia in later life may reflect ‘hidden’ dementia in mid-life affecting individual earning capacities (Anttila *et al.* 2002). Education may have an independent protective effect against the development of dementia and in many studies what initially appear to be strong class effects tend to disappear when a measure of educational status is introduced into regression analyses (Staff *et al.* 2016). Karp *et al.* (2004) found that while low education levels and low SES were individually associated with Alzheimer’s and dementia, only education remained a risk factor when they were examined simultaneously. These authors argue that the relationship between low education and increased risk of Alzheimer’s was not mediated by SES and they concluded that early life factors may be particularly relevant in developing a risk of dementia. So, while the relationship between low education levels and high risk of dementia is well documented (Evans *et al.* 1997) the evidence remains unclear. A recent review of studies examining the relationship between dementia and education found lower educational levels to be associated with greater risk of dementia in many but not across all studies and the relationship was more consistent in studies where the measure of education level reflected cognitive capacity (Sharp and Gatz 2010, 2011). An analysis of CFAS data (Muniz-Terrera *et al.* 2009) showed associations between a range of socio-demographic variables and cognitive performance but education was not related to the rate of cognitive decline (in this case measured by the mini-mental state examination [MMSE]²). Indeed, higher levels of education were not found to protect against cognitive decline; though the use of MMSE in diagnosis may lead to those with lower education being diagnosed earlier with dementia. This is a controversial area but it has been established for some time now that social and psychological factors contribute substantially to cognitive test scores and thus assessment procedures in epidemiological surveys of dementia need to be treated with caution (O’Connor *et al.* 1991).

The theory of cognitive reserve suggests that levels of intelligence and associated educational or occupational attainments may lead to a ‘reserve’ of skill sets or repertoires that may help prevent the onset of dementia and act as a buffer to help individuals with dementia cope better with their symptoms (Meng and D’Arcy 2012, Stern, 2002, 2012, Tucker and Stern 2011). In the preventative sense this is sometimes crassly referred to as a ‘use or lose it’ model, where the brain is viewed as a muscle that, like any other muscle, needs regular exercise. Within such a model education is seen as a strong predictor of a later age at onset of dementia symptoms but a faster rate of decline once these are present (Andel *et al.* 2006, Esiri and Chance 2012). Analysis of US data indicates that the main determinant of ethnic and socioeconomic disparities in cognitive function in older Americans is the level of peak cognitive performance achieved earlier in the life course (Karlman et al. 2009). Nevertheless, occupational class may still be relevant because of the cognitive requirements for different jobs, with some studies indicating that complexity of work tasks is associated with better cognitive performance in later life, independent of age, schooling, income and duration of occupation (Ribeiro *et al.* 2013). Complex tasks and work activities have been identified as a source of cognitive reserve (Kroger *et al.* 2008), while the positive protective effects of work settings has been identified both in terms of physical activity (Rovio *et al.* 2007) and psychosocial benefits (Seidler *et al.* 2004). Other studies, however, show no such protective effect from occupation-based SES (Helmer *et al.* 2001, Karp *et al.* 2004) and indeed, no evidence of SES in early life being associated with cognitive reserve (Wilson *et al.* 2005).

A prospective study of over 45,944 Norwegian men who were over 30 years of age found no association between mid-life income and dementia mortality risk but lower educational attainment was significantly associated with dementia risk. These authors concluded that their study supported the cognitive reserve hypothesis, emphasising that it was mental activity and capacity, not access to material resources, that determined dementia risk

(Strand *et al.* 2015). Despite such findings, the cognitive reserve model does encounter problems and criticisms in terms of the role of educational level in influencing the initial diagnosis and in determining the rate of cognitive decline that might be attributed to dementia. Education may have an independent protective effect through promoting knowledge of healthier lifestyles and providing the basis for health-promoting activities (Karp *et al.* 2004). At the same time, education may also promote cognitive resources through access to a wider vocabulary and through coping styles that enable individuals to solve problems.

A study of lifetime principal occupation and risk of Alzheimer's disease (Qiu *et al.* 2003) found that manual work appeared to increase the risk of dementia. While these researchers argue that their findings are consistent with the theory of cognitive reserve they equally accept that their results may be affected by a tendency for earlier diagnosis, at least of clinical Alzheimer's, among people with lower levels of education. Furthermore, they state that a strong role for occupational status in developing forms of dementia cannot be dismissed. There is some, disputed, evidence that the mechanisms for this may be found in occupational exposure to bio-material hazards (Koeman *et al.* 2015, Santibanez *et al.* 2007); for example, from exposure to electro-magnetic fields (García *et al.* 2008, Qiu *et al.* 2004, Vergara *et al.* 2013) and pesticides (Hayden *et al.* 2010) and from psycho-social stress at work (Wang *et al.* 2012). Such studies are an indication of the continued need to take account of those social, environmental and economic factors that are related to social class, when we consider the aetiology of dementia. They also suggest that a political economy of dementia can offer further insights into the social context of illness and provide further questioning of what is taken for granted about causal accounts of dementia and its treatments (Innes 2009). In this sense, it is important to examine the role of social class in the diagnosis and care of people with dementia.

The role of social class in diagnosis and treatment

A number of studies have highlighted the potential role that different forms of social location, including social status, class, ethnicity and educational background may have in determining diagnosis and access to treatment and care for people with dementia. A recent study of general practice (GP) patients in England (Connolly *et al.* 2011) found that fewer than half of the expected numbers of patients with dementia were identified in the GP dementia registers. This under-diagnosis of dementia appears to vary with practice characteristics, indicators of socioeconomic deprivation for practice areas and between administrative bodies responsible for commissioning health care. There is also evidence of social determinants playing a role in the prescription of drugs. An analysis of CFAS data (Matthews *et al.* 2007) indicated that the uptake of cholinesterase inhibitors was biased towards individuals with more education and higher social class, though it should be noted that this was in the early period of prescribing these drugs.

Prescription was also an issue in a study of people with dementia living independently (Cooper *et al.* 2010), which found that owning one's own home was a strong predictor of being prescribed drugs. The same study, however, did not find barriers to access to treatment for socioeconomically disadvantaged people when controlling for dementia severity. Inequalities in access to treatment and services may be more closely related to the status of having a dementia diagnosis whatever one's social background. For example, a cross-sectional study of patients in British general practice found that people with dementia were less likely than those without dementia to receive routine care measurements for vascular diseases. Within the group who had dementia the most disadvantaged appeared to be women, individuals living in care homes and those with fewer comorbid physical conditions and medications (Connolly *et al.* 2013).

Before considering the role of class and socioeconomic context, however, we need to recognise that the reasons for low levels of diagnosis are complex and traditional insights of medical sociology on diagnosis and referral processes are pertinent here (Stimson and Webb 1975), as well as research indicating that class plays a key role in health-seeking behaviour (Young 2004). In the case of dementia such processes may cut across traditional class distinctions. It may be that subtle changes in memory, behaviour and cognitive abilities go unnoticed or are dismissed as a normal part of growing old and that this is related to class and occupational histories. Even where problems are noticed individuals may delay taking action, may hide their problems or seek alternative advice to medical professionals. Where medical advice is sought this may not lead directly to diagnosis. There may be an element of professional avoidance of diagnosis for a variety of reasons including avoiding distress and stigma. Delaying diagnosis may also be related to the wider context of health and social care provision. Where there is a sense that service levels are low or inadequate, or there are long waiting lists, this may influence professional responses and decisions that follow rationing pathways of denial, delay, deflection, deterrence and dilution (Klein *et al.* 1996). In the UK concerns have been raised about the impact of government cuts to social care budgets and their potential consequences, in terms of inequalities in access to care and treatment (qualitywatch.org.uk).

Overviews of research on health-seeking behaviour and dementia highlight a preference for seeking help from close relatives in the first instance coupled with low levels of knowledge and the presence of stigma and fear of diagnosis. But existing studies also appear to lack theoretical and conceptual insights (Werner *et al.* 2014). Here it may be useful to draw on understandings from related areas. We know, in the field of mental health services, that talking therapies are underused by those in lower socioeconomic groups despite higher rates of common mental health problems among such groups (Eaton and Muntaner 2010). Furthermore, while there is evidence of an underuse of talking therapies, this is coupled with a higher use of prescription medication (Anderson *et al.* 2009). While such patterns do not directly translate to inequalities in access and use of dementia treatment and care it is useful to reflect on attempts to explain difference in uptake of treatments in mental health. These have a long legacy and in the past have tended to focus on working-class 'mind sets' as a problem; for example the expression of short-term preferences for immediate treatment (orientation to the future) rather than the longer term perspectives of therapeutic approaches (Hollingshead and Redlich 1958). Others have viewed the problem in terms of low expectations of professional services among working-class groups (Lorion 1974). More recent research has focused on the dissonance between middle-class therapeutic professionals and mental health users from working-class backgrounds (Sue and Sue 2003). While it is important to avoid the trap of viewing working-class people as stereotypically fatalistic (Bennett 2007, Bourdieu 1984), differences in linguistic expression and in values may be important in terms of social class differences in speech systems. Interestingly, Cicourel (2013) uses the term 'reverse socialization' to refer to how adult capacities weaken over time leading to loss of sense of self, a sense of others and a decline in routine practices. Cicourel argues that this is 'differentiated' and that caregivers 'scaffolding practices' (Vygotsky 1978) in socio-cultural interaction are designed to maintain their own identity in response to the person with dementia. There is not enough research into the ways in which class may influence the management of changes in behaviour associated with dementia and how social relations are 'maintained' or 'repaired.' Such research could provide important clues to class differences in diagnosis, health-seeking behaviour, access and responses to treatment and care in the field of dementia.

Class in the framing of care and access to care

The lack of awareness of dementia has been seen, from a dominant biomedical perspective, as a symptom reflecting underlying biological conditions. However, in a series of articles Clare (2002, 2004, Clare *et al.* 2012) has argued that in early stage dementia expressions of awareness or unawareness (anosognosia) are strongly related to socio-psychological factors. Drawing on in-depth interviews, her work shows that this is not an either/or situation. While cognitive impairment clearly affects awareness, there are also instances when individual understandings are moulded by social and psychological factors. Here the context in which individuals talk about their lives becomes important. The expression of attitudes and beliefs may be related to a host of different factors including societal attitudes, avoidance of stigma, individual coping styles, forms of denial, relationships with partners, health services and health professionals and a host of other influences that in turn may be related to aspects of social location, including class and SES.

These influences have a knock-on effect in terms of the uptake of dementia services and may be reflected in the demographic patterning of patients and carers attending services such as memory clinics (Bruce and Paterson 2000, Johnston *et al.* 2011). Research has identified important disparities in uptake among black and minority ethnic populations (Cooper *et al.* 2010, Mukadam *et al.* 2011a, 2011b) as well as communication issues between professionals and patients (Bruce *et al.* 2002). The reasons for refusing or not seeking services are clearly complex but one possible explanation, from a carers' perspective, is that of 'ambiguous gain' or a mismatch between the logic of bureaucratic systems and everyday domestic 'lifeworlds' (Lloyd and Stirling 2011). Once a person begins to encounter a healthcare system as a person with dementia there may also be barriers and obstacles that may or may not be related to socioeconomic and cultural factors.

Work by Peel and Harding (2014) offers a view of carers not, as is often assumed, as individuals 'failing' to engage, but as individuals attempting to navigate a complex system that is often more difficult and time consuming than the day to day caring work they undertake. In their sample of middle-class and working-class carers they found that although the carers diverged in terms of class background, funding status and location of care they shared a central frustration with services, which they commonly referred to as 'the system.' While this suggests there may be systemic problems that cut across issues of class and class identity, other researchers have identified forms of multiple disadvantage that impact on the negotiation of pathways through mental health services for particular groups (Kovandzic *et al.* 2011).

Work by Koehn *et al.* (2014) has drawn on the 'candidacy' framework (Dixon-Woods *et al.* 2006) to illustrate potential barriers to dementia diagnosis and to services. They found that forms of social and cultural capital were important in conferring disadvantage on all people with dementia as levels of social capital declined, but they also conferred a potential advantage for some groups in terms of identifying a problem, having a diagnosis and accessing services.

It is also important to acknowledge potential inequalities in access to research studies, for example, ensuring diversity of recruitment onto drug trials (Cooper *et al.* 2010) and low levels of participation among working-class groups in studies of social aspects of dementia (Bunn *et al.* 2012). Further research is required to explore the possible mechanisms for disadvantage, drawing on understandings from the general health inequalities literature (Abel 2008, Abel and Frohlich 2012) of the ways in which different forms of capital (social capital and cultural capital) interact with access to assets and resources to contribute to disadvantage in accessing dementia services (Clare *et al.* 2014).

Dementia, class and social relations

Following critiques of biomedical approaches (Kitwood 1997, Sabat *et al.* 1999) dementia is increasingly viewed as *both* a consequence of neuropathological processes and the social

relations that influence the way people are perceived and treated. MacRae (2008, 2011) has shown the significance of social context and the ways in which positive social interactions can help address the potentially negative impact of dementia and how access to economic resources and educational capital may enable more privileged individuals to respond positively to adversity. Responses to dementia may range from fear of a 'social death' (Sweeting and Gilhooly 1997) to its incorporation into ideas of normal ageing (Peel 2014). Such responses are related to the biographies of individuals, their social context and changing social norms. For Hulko (2009), expectations of ageing that develop through socialisation (that forms and is formed by the habitus) play a key role in constructions of dementia. Moreover, she suggests that memory loss is more difficult to cope with and adapt by privileged groups, where memory and intellectual capacities are viewed as a key component of their social status.

Despite the problems associated with class and dementia outlined earlier in this article, therefore, class identities may have an important role to play in individual responses both to the experience and the conceptualisation of dementia. Indeed, careful and detailed observational research has illustrated the ways in which etiquette, manners and bodily dispositions, derived from identity and class relations, reflect a habitus that is carried by individuals through their lived experience of dementia (Kontos 2012). This body of work has highlighted how signifiers of class and gender retrain their power and influence for the person with dementia and their carers (Kontos and Martin 2013, Kontos *et al.* 2011). Building on these insights, Twigg and Buse (2013) show how dementia disrupts the everyday practices of dressing and washing and the everyday work of maintaining bodily appearance. Such 'disruptions' can have different meanings for the person with dementia, their family, their friends and professionals. Crucially, Twigg and Buse argue, forms of social location, including gender and class, influence the different ways in which dress maintains and disrupts embodied identity. In a similar vein, Peet has argued that individual and specific responses to dementia are understood in the context of structures of social class and gender that shape everyday meanings (Peet 2014).

In an attempt to capture the effects of different forms of social location, some writers in the past have drawn on the idea of double or multiple jeopardy in relation to dementia (Innes *et al.* 2004). More recently, researchers have drawn on the concept of intersectionality where categories of social relations are understood in terms of interlocking sets of power relations (Dressel *et al.* 1997, Vega 2012). Work in this field has attempted to show how relationships between multiple dimensions and modalities of social relationships and subject formations, including those of age, class, gender and ethnicity, contribute to individual and group advantage and disadvantage. The concept has had an important influence in recent years in the field of ageing (Calasanti 2004, 2010, Krekula 2007, Levy 1988). Indeed, some researchers have embraced this approach to argue that people 'do age' in the context of age-specific and gendered process that are shaped by class-based values, ideals and practices (Pietila and Ojala 2011). However, while work of this nature contributes to perspectives that emphasise the importance of social location and social context, there are significant problems with the approach in terms of method and subjectivity. In particular, researchers have criticised intersectionality in terms of how interactions are judged and analysed and how decisions are made on priority and emphasis (McCall 2005, Massey *et al.* 2014).

Conclusion

This article began with a description of Auguste D that tried to set what little we know of her life in the context of a hierarchical imperial Germany as a means of highlighting the need to situate the lives of people suffering from dementia in the present day within their own social context and biographies. While research appears to show that education and cognitive

capacity play a key role in relation to class and the aetiology of dementia across the life-course, there is some evidence from epidemiology, health research and sociology that indicates that forms of distinction based on class may have a role to play in the diagnosis of dementia, in access to treatment and care, and in the social relations that underpin the lived experience of dementia. Sociological research in this area has explored the ways in which individual and group responses to dementia develop in the context of the larger structural processes that shape everyday meanings.

Much work remains to be done, therefore, and in particular work needs to focus on class relations that are part of the lives of people with dementia and their carers in the context of wider social change. We know, for example, that contemporary societies place a high value on cognitive skills, intellectual capacities and associated forms of accreditation. Consequently, the impact of dementia is likely to be devastating for individuals in terms of the loss of status that might accompany a spoiled identity or the threat of a spoiled identity. Such losses may be associated with educational status and aspects of social and cultural capital that are strongly related to class.

Research on occupational and class differences in health can only get us so far in this respect. If we are to understand the relationship between class identity and the impact of dementia we need to explore lay normative responses to both class and dementia and start to unpick how, and under what circumstances, people value themselves and others. In relation to the themes addressed in this special issue, closer attention is needed to the way that feelings of shame, embarrassment and contempt, as well as notions of compassion, dignity and respect, are closely tied up with class relationships, if we are to better understand the attitudes to frailty and cognitive decline that are part of the social imaginary of the fourth age. In short, rather than seek to insert class into an aetiological model of dementia, it may be more productive to bring to bear a class perspective on the social relations that initiate, support and maintain the capacity of people to live well with dementia.

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Notes

1. The CFAS studies are population based studies in the UK of individuals aged 65 years and over living in the community, including institutions.
2. The MMSE is a 30-point questionnaire that is used extensively in clinical and research settings to measure cognitive impairment. It is recognised that demographic factors may affect the score.

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References

- Abel, T. (2008) Cultural capital and social inequality in health, *Journal of Epidemiology and Community Health*, 62, 7, e13–13.
- Abel, T. and Frohlich, K. (2012) Capitals and capabilities: linking structure and agency to reduce health inequalities, *Social Science & Medicine*, 74, 2, 236–44.
- Al Hazzouri, A., Haan, M., Kalbfleisch, J., Galea, S. *et al.* (2011) Life-course socioeconomic position and incidence of dementia and cognitive impairment without dementia in older Mexican Americans: results from the Sacramento Area Latino Study on Aging, *American Journal of Epidemiology*, 173, 10, 1148–1158.
- Andel, R., Vigen, C., Mack, W., Clark, L. *et al.* (2006) The effect of education and occupational complexity on rate of cognitive decline in Alzheimer's patients, *Journal of the International Neuropsychological Society*, 12, 1, 147–152.
- Anderson, S., Brownlie, J. and Given, L. (2009) Therapy culture? Attitudes towards emotional support. In Park, A., Curtice, J., Thomson, K., Phillips M. *et al.* (eds) *British Social Attitudes, the 25th Report*. London: National Centre for Social Research.
- Anttila, T., Helkala, E., Kivipelto, M., Hallikainen, M. *et al.* (2002) Midlife income, occupation, APOE status, and dementia – a population-based study, *Neurology*, 59, 6, 887–93.
- Archer, M. (2007) *Making Our Way through the World, Human Reflexivity and Social Mobility*. Cambridge: Cambridge University Press.
- Archer, M.S. (2010) Routine, reflexivity, and realism, *Sociological Theory*, 28, 3, 272–303.
- Bennett, T. (2007) Habitus clivé: aesthetics and politics in the work of Pierre Bourdieu, *New Literary History*, 38, 1, 201–28.
- Bourdieu, P. (1984) *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge.
- Brayne, C., Gao, L., Dewey, M., Matthews, F. *et al.* (2006) Dementia before death in ageing societies – the promise of prevention and the reality, *Plos Medicine*, 3, 10, 1922–30.
- Bruce, D. and Paterson, A. (2000) Barriers to community support for the dementia carer: a qualitative study, *International Journal of Geriatric Psychiatry*, 15, 5, 451–7.
- Bruce, D., Paley, G., Underwood, P., Roberts, D. *et al.* (2002) Communication problems between dementia carers and general practitioners: effect on access to community support services, *Medical Journal of Australia*, 177, 4, 186–8.
- Bunn, F., Goodman, C., Sworn, K., Rait, G. *et al.* (2012) Psychosocial factors that shape patient and carer experiences of dementia diagnosis and treatment: a systematic review of qualitative studies, *Plos Medicine*, 9, 10, e1001331.
- Calasanti, T. (2004) Feminist gerontology and old men, *Journals of Gerontology Series B*, 59, 6, S305–14.
- Calasanti, T. (2010) Gender relations and applied research on aging, *Gerontologist*, 50, 6, 720–34.
- Chen, R., Ma, Y., Wilson, K., Hu, Z. *et al.* (2012) A multicentre community-based study of dementia cases and subcases in older people in China – the GMS-AGECAT prevalence and socio-economic correlates, *International Journal of Geriatric Psychiatry*, 27, 7, 692–702.
- Cicourel, A. (2013) Origin and demise of socio-cultural presentations of self from birth to death: caregiver 'scaffolding' practices necessary for guiding and sustaining communal social structure throughout the life cycle, *Sociology*, 47, 1, 51–73.
- Cipriani, G. and Borin, G. (2015) Understanding dementia in the sociocultural context: a review, *International Journal of Social Psychiatry*, 61, 2, 198–204.
- Clare, L. (2002) Developing awareness about awareness in early-stage dementia: the role of psychosocial factors, *Dementia*, 1, 3, 295–312.
- Clare, L. (2004) Awareness in early-stage Alzheimer's disease: a review of methods and evidence, *British Journal of Clinical Psychology*, 43, 2, 177–96.

- Clare, L., Nelis, S., Martyr, A., Roberts, J. *et al.* (2012) The influence of psychological, social and contextual factors on the expression and measurement of awareness in early-stage dementia: testing a biopsychosocial model, *International Journal of Geriatric Psychiatry*, 27, 2, 167–77.
- Clare, L., Nelis, S., Quinn, C., Martyr, A. *et al.* (2014) Improving the experience of dementia and enhancing active life – living well with dementia: study protocol for the IDEAL study, *Health and Quality of Life Outcomes*, 12, 164. doi: 10.1186/s12955-014-0164-6.
- Connolly, A., Campbell, S., Gaehl, E., Iliffe, S. *et al.* (2013) Under-provision of medical care for vascular diseases for people with dementia in primary care: a cross-sectional review, *British Journal of General Practice*, 63, 607, E88–96.
- Connolly, A., Gaehl, E., Martin, H., Morris, J. *et al.* (2011) Underdiagnosis of dementia in primary care: variations in the observed prevalence and comparisons to the expected prevalence, *Aging and Mental Health*, 15, 8, 978–84.
- Cooper, C., Blanchard, M., Selwood, A. and Livingston, G. (2010) Antidementia drugs: prescription by level of cognitive impairment or by socio-economic group? *Aging and Mental Health*, 14, 1, 85–9.
- Cooper, C., Tandy, A., Balamurali, T and Livingston, G. (2010) A systematic review and meta-analysis of ethnic differences in use of dementia treatment, care, and research, *American Journal of Geriatric Psychiatry*, 18, 3, 193–203.
- Crompton, R. (2006) Class and family, *Sociological Review*, 54, 4, 658–77.
- Deaton, A. (2013) *The Great Escape: Health, Wealth, and the Origins of Inequality*. Princeton: Princeton University Press.
- Dixon-Woods, M., Cavers, D., Agarwal, S., Annandale, E. *et al.* (2006) Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups, *BMC Medical Research Methodology*, 6, 35.
- Dressel, P., Minkler, M. and Yen, I. (1997) Gender, race, class, and aging: advances and opportunities, *International Journal of Health Services*, 27, 4, 579–600.
- Eaton, W.W. and Muntaner, C. (2010) Socio-economic stratification and mental disorder. In Schend, T.L. and Brown, T.N. (eds), *Handbook for the Study of Mental Health: Social Contexts Theories and Systems*. Cambridge: Cambridge University Press.
- Esiri, M. and Chance, S. (2012) Cognitive reserve, cortical plasticity and resistance to Alzheimer's disease, *Alzheimers Research and Therapy*, 4, 2. doi: 10.1186/alzrt105.
- Evans, D.A., Hebert, L.E., Beckett, L.A., Scherr, P.A. *et al.* (1997) Education and other measures of socioeconomic status and risk of incident Alzheimer disease in a defined population of older persons, *Archives of Neurology*, 54, 11, 1399–405.
- Fischer, C., Yeung, E., Hansen, T., Gibbons, S. *et al.* (2009) Impact of socioeconomic status on the prevalence of dementia in an inner city memory disorders clinic, *International Psychogeriatrics*, 21, 6, 1096–104.
- García, A.M., Sisternas, A. and Hoyos, S.P. (2008) Occupational exposure to extremely low frequency electric and magnetic fields and Alzheimer disease: a meta-analysis, *International Journal of Epidemiology*, 37, 2, 329–40.
- Goldbourt, U., Schnaider-Beerli, M. and Davidson, M. (2007) Socioeconomic status in relationship to death of vascular disease and late-life dementia, *Journal of the Neurological Sciences*, 257, 1–2, 177–81.
- Hayden, K., Norton, M., Darcey, D., Ostbye, T. *et al.* (2010) Occupational exposure to pesticides increases the risk of incident A.D. The Cache County Study, *Neurology*, 74, 19, 1524–30.
- Helmer, C., Letenneur, L., Rouch, I., Richard-Harston, S. *et al.* (2001) Occupation during life and risk of dementia in French elderly community residents, *Journal of Neurology Neurosurgery and Psychiatry*, 71, 3, 303–9.

- Hogervorst, E. and Clifford, A. (2013) What is the relationship between higher levels of education delaying age at onset of dementia? *Journal of Alzheimers Disease and Parkinsonism*, 3, e128,. doi: 10.4172/2161-0460.1000e128.
- Hollingshead, A.B. and Redlich, F.C. (1958) *Social Class and Mental Illness: A Community Study*. New York: John Wiley.
- Hulko, W. (2009) From 'not a big deal' to 'hellish': experiences of older people with dementia, *Journal of Aging Studies*, 23, 3, 131–44.
- Innes, A. (2009) *Dementia Studies: A Social Science Perspective*. London: Sage.
- Innes, A., Archibald, C. and Murphy, C. (eds) (2004) *Dementia and Social Inclusion: Marginalised Groups and Marginalised Areas of Dementia Research, Care and Practice*. London: Jessica Kingsley.
- Johnston, D., Samus, Q., Morrison, A., Leoutsakos, J. *et al.* (2011) Identification of community-residing individuals with dementia and their unmet needs for care, *International Journal of Geriatric Psychiatry*, 26, 3, 292–8.
- Jones, I.R. and Higgs, P. (2013) Class and health inequalities in later life. In Formosa, M. and Higgs, P. (eds) *Social Class in Later Life, Power, Identity and Lifestyle*. Bristol: Policy Press.
- Karlamangla, A., Miller-Martinez, D., Aneshensel, C., Seeman, T. *et al.* (2009) Trajectories of cognitive function in late life in the United States: demographic and socioeconomic predictors, *American Journal of Epidemiology*, 170, 3, 331–42.
- Karp, A., Kareholt, I., Qiu, C.X., Bellander, T. *et al.* (2004) Relation of education and occupation-based socioeconomic status to incident Alzheimer's disease, *American Journal of Epidemiology*, 159, 2, 175–83.
- Kim, M., Park, J., Lee, C., Kang, N. *et al.* (2012) Prevalence of dementia and its correlates among participants in the National Early Dementia Detection Program during 2006–2009, *Psychiatry Investigation*, 9, 2, 134–42.
- Kitwood, T. (1997) *Dementia Reconsidered: the Person Comes First*. Buckingham: Open University Press.
- Kitwood, T. and Benson, S. (eds) (1995) *The New Culture of Dementia Care*. London: Hawker.
- Klein, R., Day, P. and Redmayne, S. (1996) *Managing Scarcity: Priority Setting and Rationing in the National Health Service*. Buckingham: Open University Press.
- Koehn, S., Badger, M., Cohen, C., McCleary, L. *et al.* (2014) Negotiating access to a diagnosis of dementia: implications for policies in health and social care. *Dementia*, 1471301214563551.
- Koeman, T., Schouten, L., van den Brandt, P., Slottje, P. *et al.* (2015) Occupational exposures and risk of dementia-related mortality in the prospective Netherlands Cohort Study, *American Journal of Industrial Medicine*, 58, 6, 625–35.
- Kontos, P. (2012) Rethinking sociability in long-term care: an embodied dimension of selfhood, *Dementia*, 11, 3, 329–46.
- Kontos, P. and Martin, W. (2013) Embodiment and dementia: exploring critical narratives of selfhood, surveillance, and dementia care, *Dementia*, 12, 3, 288–302.
- Kontos, P., Miller, K., Mitchell, G. and Cott, C. (2011) Dementia care at the intersection of regulation and reflexivity: a critical realist perspective, *Journals of Gerontology Series B*, 66, 1, 119–28.
- Kovandzic, M., Chew-Graham, C., Reeve, J., Edwards, S. *et al.* (2011) Access to primary mental health care for hard-to-reach groups: from 'silent suffering' to 'making it work,' *Social Science & Medicine*, 72, 5, 763–72.
- Krekula, C. (2007) The intersection of age and gender – reworking gender theory and social gerontology, *Current Sociology*, 55, 2, 155–71.
- Kroger, E., Andel, R., Lindsay, J., Benounissa, Z. *et al.* (2008) Is complexity of work associated with risk of dementia? *American Journal of Epidemiology*, 167, 7, 820–30.

- Kuiper, J., Zuidersma, M., Voshaar, R., Zuidema, S. *et al.* (2015) Social relationships and risk of dementia: a systematic review and meta-analysis of longitudinal cohort studies, *Ageing Research Reviews*, 22, 39–57.
- Levy, J. (1988) Intersections of gender and aging, *Sociological Quarterly*, 29, 4, 479–86.
- Lloyd, B. and Stirling, C. (2011) Ambiguous gain: uncertain benefits of service use for dementia carers, *Sociology of Health & Illness*, 33, 6, 899–913.
- Lorion, R.P. (1974) Patient and therapist variables in treatment of low-income patients, *Psychological Bulletin*, 81, 6, 344–54.
- Lynch, J., Smith, G., Harper, S. and Hillemeier, M. (2004) Is income inequality a determinant of population health? Part 2. US national and regional trends in income inequality and age- and cause-specific mortality, *Milbank Quarterly*, 82, 2, 355–400.
- McCall, L. (2005) The complexity of intersectionality, *Signs*, 30, 3, 1771–800.
- McEwen, B., Gianaros, P., Adler, N. and Stewart, J. (2010) Central role of the brain in stress and adaptation: links to socioeconomic status, health, and disease, *Biology of Disadvantage: Socioeconomic Status and Health*, 1186, 190–222.
- MacRae, H. (2008) ‘Making the best you can of it’: living with early-stage Alzheimer’s disease, *Sociology of Health & Illness*, 30, 3, 396–412.
- MacRae, H. (2011) Self and other: the importance of social interaction and social relationships in shaping the experience of early-stage Alzheimer’s disease, *Journal of Aging Studies*, 25, 4, 445–56.
- Marengoni, A., Fratiglioni, L., Bandinelli, S. and Ferrucci, L. (2011) Socioeconomic status during lifetime and cognitive impairment no-dementia in late life: the population-based aging in the Chianti area (InCHIANTI) study, *Journal of Alzheimers Disease*, 24, 3, 559–68.
- Massey, D., McCall, L., Tomaskovic-Devey, D., Avent-Holt, D. *et al.* (2014) Understanding inequality through the lens of cultural processes: on Lamont, Beljean and Clair ‘What is Missing? Cultural Processes and Causal Pathways to Inequality’, *Socio-Economic Review*, 12, 3, 609–36.
- Matthews, F.E., Arthur, A., Barnes, L.E., Bond, J. *et al.* (2013) A two-decade comparison of prevalence of dementia in individuals aged 65 years and older from three geographical areas of England: results of the Cognitive Function and Ageing Study I and II, *The Lancet*, 382, 9902, 1405–12.
- Matthews, F.E., McKeith, I., Bond, J., Brayne, C. *et al.* (2007) Reaching the population with dementia drugs: what are the challenges? *International Journal of Geriatric Psychiatry*, 22, 7, 627–31.
- Meng, X. and D’Arcy, C. (2012) Education and dementia in the context of the cognitive reserve hypothesis: a systematic review with meta-analyses and qualitative analyses, *Plos One*, 7, 6, e38268.
- Mukadam, N., Cooper, C., Basit, B. and Livingston, G. (2011a) Why do ethnic elders present later to UK dementia services? A qualitative study, *International Psychogeriatrics*, 23, 7, 1070–7.
- Mukadam, N., Cooper, C. and Livingston, G. (2011b) A systematic review of ethnicity and pathways to care in dementia, *International Journal of Geriatric Psychiatry*, 26, 1, 12–20.
- Muniz-Terrera, G., Matthews, F., Denning, T., Huppert, F.A. *et al.* (2009) Education and trajectories of cognitive decline over 9 years in very old people: methods and risk analysis, *Age and Ageing*, 38, 3, 277–82.
- Norton, M., Smith, K., Hanson, H. and Tschanz, J. (2014) The role of early stressors and late-life dementia: The Cache County Memory Study linked to the UPDB, *Gerontologist*, 54, 141.
- Norton, M., Smith, K., Ostbye, T., Tschanz, J. *et al.* (2011) Early parental death and remarriage of widowed parents as risk factors for Alzheimer disease: The Cache County Study, *American Journal of Geriatric Psychiatry*, 19, 9, 814–24.

- O'Connor, D., Pollitt, P. and Treasure, F. (1991) The influence of education and social class on the diagnosis of dementia in a community population, *Psychological Medicine*, 21, 1, 219–24.
- Page, S. and Fletcher, T. (2006) Auguste D: one hundred years on: 'the person' not 'the case,' *Dementia*, 5, 4, 571–83.
- Peel, E. (2014) 'The living death of Alzheimer's' versus 'take a walk to keep dementia at bay': representations of dementia in print media and carer discourse, *Sociology of Health & Illness*, 36, 6, 885–901.
- Peel, E. and Harding, R. (2014) 'It's a huge maze, the system, it's a terrible maze': dementia carers' constructions of navigating health and social care services, *Dementia*, 13, 5, 642–61.
- Peet, J. (2014) The influence of social location on the experience of early dementia. Unpublished PhD thesis. University of Kent.
- Pietila, I. and Ojala, H. (2011) Acting age in the context of health: middle-aged working-class men talking about bodies and aging, *Journal of Aging Studies*, 25, 4, 380–89.
- Qiu, C., Karp, A., von Strauss, E., Winblad, B. *et al.* (2003) Lifetime principal occupation and risk of Alzheimer's disease in the Kungsholmen Project, *American Journal of Industrial Medicine*, 43, 2, 204–11.
- Qiu, C., Fratiglioni, L., Karp, A., Winblad, B. *et al.* (2004) Occupational exposure to electromagnetic fields and risk of Alzheimer's disease, *Epidemiology*, 15, 6, 687–94.
- Ribeiro, P., Lopes, C. and Lourenco, R. (2013) Complexity of lifetime occupation and cognitive performance in old age, *Occupational Medicine*, 63, 8, 556–62.
- Robinson, L., Tang, E. and Taylor, J.-P. (2015) Dementia: timely diagnosis and early intervention, *BMJ*, 350, doi: <http://dx.doi.org/10.1136/bmj.h3029>.
- Rovio, S., Kareholt, I., Viitanen, M., Winblad, B. *et al.* (2007) Work-related physical activity and the risk of dementia and Alzheimer's disease, *International Journal of Geriatric Psychiatry*, 22, 9, 874–82.
- Russ, T.C., Stamatakis, E., Hamer, M., Starr, J. M. *et al.* (2013) Socioeconomic status as a risk factor for dementia death: individual participant meta-analysis of 86 508 men and women from the UK, *British Journal of Psychiatry*, 203, 1, 10–17.
- Sabat, S., Fath, H., Moghaddam, F. and Harre, R. (1999) The maintenance of self-esteem: lessons from the culture of Alzheimer's sufferers, *Culture and Psychology*, 5, 1, 5–31.
- Santibanez, M., Bolumar, F. and Garcia, A. (2007) Occupational risk factors in Alzheimer's disease: a review assessing the quality of published epidemiological studies, *Occupational and Environmental Medicine*, 64, 11, 723–32.
- Sayer, A. (2002) What are you worth? Why class is an embarrassing subject, *Sociological Research Online*, 7, 3.
- Sayer, A. (2005) *The Moral Significance of Class*. Cambridge: Cambridge University Press.
- Seidler, A., Nienhaus, A., Bernhardt, T., Kauppinen, T. *et al.* (2004) Psychosocial work factors and dementia, *Occupational and Environmental Medicine*, 61, 12, 962–71.
- Sharp, E. and Gatz, M. (2010) Education and dementia: a systematic review of published studies, *Gerontologist*, 50, 64–5.
- Sharp, E. and Gatz, M. (2011) Relationship between education and dementia an updated systematic review, *Alzheimer Disease and Associated Disorders*, 25, 4, 289–304.
- Skeggs, B. (2011) Imagining personhood differently: person value and autonomist working-class value practices, *Sociological Review*, 59, 3, 496–513.
- Skeggs, B. and Loveday, V. (2012) Struggles for value: value practices, injustice, judgment, affect and the idea of class, *British Journal of Sociology*, 63, 3, 472–90.
- Staff, R.T., Chapko, D., Hogan, M. and Whalley, L.J. (2016) Life course socioeconomic status and the decline in information processing speed in late life, *Social Science and Medicine*, 151, 130–8.

- Stern, Y. (2002) What is cognitive reserve? Theory and research application of the reserve concept, *Journal of the International Neuropsychological Society*, 8, 3, 448–60.
- Stern, Y. (2012) Cognitive reserve in ageing and Alzheimer's disease, *Lancet Neurology*, 11, 11, 1006–12.
- Stimson, G. and Webb, B. (1975) *Going to See the Doctor*. London: Routledge.
- Strand, B.H., Skirbekk, V., Rosness, T.A., Engedal, K. *et al.* (2015) Income in midlife and dementia related mortality over three decades: a Norwegian prospective study, *eNeurologicalSci*, 1, 2, 24–9.
- Sue, D.W. and Sue, D. (2003) *Counseling the Culturally Diverse* (4th edn). New York: John Wiley.
- Sweeting, H. and Gilhooly, M. (1997) Dementia and the phenomenon of social death, *Sociology of Health & Illness*, 19, 1, 93–117.
- Tschanz, J., Norton, M., Zandi, P. and Lyketsos, C. (2013) The Cache County Study on memory in aging: factors affecting risk of Alzheimer's disease and its progression after onset, *International Review of Psychiatry*, 25, 6, 673–85.
- Tucker, A. and Stern, Y. (2011) Cognitive reserve in aging, *Current Alzheimer Research*, 8, 4, 354–60.
- Twigg, J. and Buse, C. (2013) Dress, dementia and the embodiment of identity, *Dementia*, 12, 3, 326–36.
- Vega, W. (2012) Aging and chronic disease burden using an intersectionality lens, *Gerontologist*, 52, 689–89.
- Vergara, X., Kheifets, L., Greenland, S., Oksuzyan, S. *et al.* (2013) Occupational exposure to extremely low-frequency magnetic fields and neurodegenerative disease a meta-analysis, *Journal of Occupational and Environmental Medicine*, 55, 2, 135–46.
- Vygotsky, L.S. (1978) *Mind in Society: the Development of Higher Psychological Processes*. Cambridge: Harvard University Press.
- Wang, H., Wahlberg, M., Karp, A., Winblad, B. *et al.* (2012) Psychosocial stress at work is associated with increased dementia risk in late life, *Alzheimers and Dementia*, 8, 2, 114–20.
- Werner, P., Goldstein, D., Karpas, D., Chan, L. *et al.* (2014) Help-seeking for dementia a systematic review of the literature, *Alzheimer Disease and Associated Disorders*, 28, 4, 299–310.
- Wilson, R.S., Scherr, P.A., Hoganson, G., Bienias, J. *et al.* (2005) Early life socioeconomic status and late life risk of Alzheimer's disease, *Neuroepidemiology*, 25, 1, 8–14.
- Yaffe, K., Falvey, C., Harris, T., Newman, A. *et al.* (2013) Effect of socioeconomic disparities on incidence of dementia among biracial older adults: prospective study, *BMJ*, 347, f7051.
- Yip, A., Brayne, C. and Matthews, F. (2006) Risk factors for incident dementia in England and Wales: the medical research council cognitive function and ageing study. A population-based nested case-control study, *Age and Ageing*, 35, 2, 154–60.
- Young, J.T. (2004) Illness behaviour: a selective review and synthesis, *Sociology of Health & Illness*, 26, 1, 1–31.
- Zhong, G., Wang, Y., Zhang, Y., Guo, J. J. *et al.* (2015) Smoking is associated with an increased risk of dementia: a meta-analysis of prospective cohort studies with investigation of potential effect modifiers, *Plos One*, 10, 3, e0118333.