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"The we's have it": Evidence for the distinctive benefits of group engagement in enhancing cognitive health in aging

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ABSTRACT

Aligned with research in the social capital and general health literature, a large body of evidence shows that older people who are more socially active have better cognitive integrity and are less vulnerable to cognitive decline. The present research addresses the question of whether the type of social engagement (group-based vs. individual) has differential effects on these cognitive health outcomes. Drawing on population data ($N = 3413$) from three waves (i.e., Waves 3, 4 and 5) of the English Longitudinal Study of Ageing, we investigated the independent contribution of group and individual engagement in predicting cognitive functioning four years later. Hierarchical linear regression was used entering age, gender, socioeconomic status, ethnicity, and physical health as covariates. The final model, controlling for initial cognitive function and social engagement (both group and individual) showed that only group engagement made a significant, sustained, and unique contribution to subsequent cognitive function. Furthermore, the effects of group engagement were stronger with increasing age. These findings extend previous work on the social determinants of health by pinpointing the types of relationships that are particularly beneficial in protecting cognitive health. The fact that group engagement optimized health outcomes, and that this was especially the case with increasing age, has important implications for directing community resources to keep older adults mentally active and independent for longer.

There is no doubt that social factors affect health and well-being outcomes. Social isolation and exclusion are associated with increased rates of premature death (e.g., Berkman and Syme, 1979; Cacioppo and Hawkley, 2003; Holt-Lunstad et al., 2010; Holt-Lunstad and Smith, 2012; House et al., 1981), and greater vulnerability to, and adverse outcomes in recovery from, chronic disease (e.g., Boden-Albala et al., 2005; Ertel et al., 2009; Uchino, 2006; Umberson and Montez, 2010). They are also key contributors to declining mental health (e.g., Cruwys et al., in press, 2013; Nguyen and Berry, 2013) and well-being (e.g., Berry and Shipley, 2009; Olesen and Berry, 2011; Tomaszewski, 2013). Moreover, these effects are more pronounced among those whose health is already compromised (House, 2001).

Particularly important for older populations, these social factors are implicated in cognitive health outcomes. Results of numerous longitudinal investigations show that older people who are more socially connected have better cognitive integrity and are less vulnerable to progressive decline (Barnes et al., 2004; Bassuk et al., 1999; Crooks et al., 2008; Ertel et al., 2008; Fabrigoule et al., 1995; Giles et al., 2012; Holtzman et al., 2004; Seeman et al., 2001; Seeman et al., 2011; Zunzunegui et al., 2003). What is notable from these studies is that the effects are substantial. Thus among seniors with the highest number of social networks, there is evidence that general cognitive decline is reduced by 39% (Barnes et al., 2004) and that memory decline is halved (Ertel et al., 2008) over a period of five to six years, relative to people with the lowest levels of social integration. The challenge researchers and practitioners currently face is how best to use these findings to optimize cognitive health as people age.

There is general agreement that improving our understanding of causal mechanisms will address this challenge. This requires the integration of two components: (a) understanding what determines the formation and quality of beneficial social engagement, and (b) understanding the processes through which such engagement exerts its effects. Much of the focus to date has been on understanding the latter, with many researchers arguing that supportive social relationships are vital in controlling the body's response to heightened arousal and stress (Cohen, 2004; Seeman et al., 2002; Uchino, 2004) and that this in turn offers protection against adverse neurodegenerative outcomes (Fillet et al., 2002). Yet while they are an important part of the story, these

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physiological effects are primarily a response to a given social stimulus (e.g., receiving social support from a spouse). Accordingly, it is important to interrogate the psychological processes that underpin these effects so that we are in a position to understand why and how social experiences (e.g., of support) influence biological processes. By way of example, evidence that the nature of social relationships (e.g., those based on shared vs. non-shared group membership) has a profound impact on the trajectory of social support and stress (Haslam et al., 2012; Umberson and Montez, 2010), points to the need to understand how the quality and nature of social relationships feed into positive health outcomes.

Yet to understand these processes we first need to clarify what is the "active ingredient" of social networks in those studies that have investigated its effects on cognitive integrity. To date, the majority of studies in the aging literature have conceptualized social relationships predominantly in interpersonal terms. As a result, indices of network structure typically conflate different types of social relationships – so that they fail to differentiate between the effects of individual, or one-on-one, engagement (i.e., with other well-known individuals; e.g., a spouse, child, friend or relative) and the effects of engagement with broader social groups (e.g., one's wider family, recreational clubs, voluntary and church groups). Moreover, the majority of studies tend to place greater emphasis on the former (e.g., see Bennett et al., 2006; Crooks et al., 2008; Ertel et al., 2008; Fratiglioni et al., 2000; Giles et al., 2012; Green et al., 2008; Holtzman et al., 2004). Indeed, where group engagement is measured, the data tends to be coded for its presence or absence and treated as an equivalent construct to engagement with individuals, often resulting in the two constructs being collapsed into a single social network index (Barnes et al., 2004; Bassuk et al., 1999; Seeman et al., 2001; Zunzenugui et al., 2003).

Nevertheless, there is evidence that some relationships (i.e., family and spousal) may be especially important for some aspects of health (Kiecolt-Glaser and Newton, 2001; Christakis and Allison, 2006), with additional relationships and activities identified as protective of mental health and psychological distress (i.e., with friends, and neighbors, community activity, interest in current affairs and religious observance; Berry et al., 2007; Berry and Welsh, 2010). There is also evidence that particular forms of community participation – notably, political participation and political protest – has been found to be bad for one's mental health (Berry et al., 2007; Berry and Welsh, 2010). Although cognitive health was not the focus of these studies with younger participants, this evidence strengthens the case for investigating the effects of different types of social relationships. Indeed, the need to identify the most effective forms of engagement has been highlighted as an important research agenda in the aging field (Carstensen and Hartel, 2006).

Perhaps most informative in the light of this characterization of the "social", are findings from a longitudinal study of 2387 elderly Taiwanese conducted by Glei et al. (2005). As in many other studies, social relationships were measured as a function of individual engagement including marital status and the number of close relatives, other relatives, friends and neighbors with whom a person had weekly contact. In line with the above reasoning, though, these researchers included an additional measure comprising largely group-based relationships and activities (e.g., involvement in elderly organizations, political groups, volunteering). Interestingly, the study found that people who participated in one or two group activities displayed 13% fewer cognitive deficiencies up to three years later and that those who participated in three or more group activities had 33% fewer. At the same time, individual relationships alone had no impact at all on these same cognitive outcomes. The implications of these findings are important for the present analysis, as they point, for the first time in the aging literature, to the possibility that the *type of relationship* that is implicated in the social connectivity that people enjoy (specifically, group vs. individual) has a significant bearing on their cognitive health outcomes.

Also interesting in the context of Glei's findings is the fact that the size of these different social networks was not a key predictor of health outcomes. Rather, preservation of function was best predicted by the quality of these relationships as indexed by measures of the extent of active participation and engagement. Indeed, this is a finding that has emerged from many other studies investigating relationships between social capital and cognition (e.g., James et al., 2011; Fabrigoule et al., 1995; Krueger, 2009) and the role of social and emotional support in this link (Bassuk et al., 1999; Seeman et al., 2001). The study conducted by Barnes et al. (2004) provides further interesting data on this point. As noted earlier, here cognitive decline was reduced by 39% in those with the greatest social network size, but it was reduced much further, by 91%, among those with the highest levels of social engagement. These data make an important point about the added value of engagement and support and highlight that cognitive preservation is not a natural or inevitable consequence of all social relationships. If this were the case, we should see no difference in the contribution of network size and relationship quality, but, as this and other research shows, the latter appears to have considerable impact on cognitive outcome.

The critical question, relevant to social mechanism, raised by findings such as these is what makes engagement and social support possible? This is where social psychological theory offers some potential answers – not least because this points to important differences between group and individual engagement that explain why they might affect health in different ways. In particular, the social identity framework (Tajfel and Turner, 1979; Turner et al., 1987; Turner et al., 1994), and the recently developed social identity approach to health (Haslam et al., 2009; Jetten et al., 2012, 2014) explain how social group memberships can influence health outcomes through their impact on a person's sense of *social identity*. Fundamental to these theories and approach is the idea that social groups (whatever their basis; e.g., family, friendship, religious, community, recreational) provide an important and distinctive basis for self-understanding because they furnish people with a sense of themselves as part of a larger collective ("us", e.g., "us Australians", "us grandmothers", "us Democrats") rather than as merely unique individuals (in terms of personal identity, "I"; Turner, 1982).

To the extent that they are incorporated as an important part of our identity, groups frame and inform our values (e.g., our belief in free speech when our Democratic identity is salient), and structure our thoughts, emotions, and behavior (e.g., to question, feel disillusionment, and protest when our democratic rights are infringed). More importantly still, a sense of shared identity provides a meaningful basis to give, receive, and benefit from various forms of health-enhancing social support (i.e., emotional, cognitive, material; Haslam et al., 2009, 2012). Critically, then, social identification explains why we willingly engage – and benefit from relationships – with some people (e.g., members of our local church, when religious identity is salient), but not others (e.g., members of a conservative political party with whom one has neither a sense of connectedness or belonging).

Applying this logic to the present context, social identity theorizing would argue that *social identification* provides an important basis for social participation, and thus the mechanism through which health benefit – whether mental, physical or cognitive – is gained. This is because social participation does not occur in a psychological vacuum. On the contrary, there must be a basis, reason, and motivation to actively participate in social activities with others, and this is more likely to be the case when people perceive themselves as sharing social identity (e.g., as members of