Accepted Manuscript

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PII: S0277-9536(18)30292-2

DOI: 10.1016/j.socscimed.2018.05.049

Reference: SSM 11785

To appear in: *Social Science & Medicine*

Received Date: 6 November 2017

Revised Date: 16 May 2018

Accepted Date: 26 May 2018

Please cite this article as: Lam, B.C.P., Haslam, C., Haslam, S.A., Steffens, N.K., Cruwys, T., Jetten, J., Yang, J., Multiple social groups support adjustment to retirement across cultures, *Social Science & Medicine* (2018), doi: 10.1016/j.socscimed.2018.05.049.

Multiple Social Groups Support Adjustment to Retirement across Cultures

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Author Note:

This work was supported by an Australian Research Council Discovery grant (DP160102514) and the Canadian Institute for Advanced Research, Social Identity Interactions, and Well-being Program.

Abstract

Rationale: Research has demonstrated the positive effects that social identification with multiple groups has on people's health and well-being, in part during the transition from work to retirement. However, these effects have not been examined outside Western retirement contexts. This study addresses this gap.

Objective: This investigation aims to examine the contribution that group membership and identification with multiple social groups makes to supporting retirees' physical health and well-being across cultures.

Method: Responses from a representative sample of 10,513 retired individuals from 51 countries drawn from the World Values Survey were used in this analysis. This research focused on the number of group memberships, identification with multiple groups, subjective health, and well-being that respondents reported.

Results: Analysis showed that belonging to multiple groups positively predicted retirees' health and well-being in both Western and non-Western cultural contexts. In line with cross-cultural research, there was evidence that country-level collectivism moderated the strength of this association, with the effect being weaker in collectivistic (vs. individualistic) countries.

Conclusion: Findings confirm the utility of using the social identity approach to understand people's adjustment to retirement across cultures.

Keywords: social identity, group membership, retirement, culture, collectivism

Introduction

Not all people transition from work to retirement successfully, with evidence suggesting that this life change poses particular challenges that cannot be explained solely by differences in policy and the form that retirement takes across societies. Research indicates that about 25% of retirees in the United States experience a marked reduction in health and well-being during this transition (Wang, 2007). While these figures are lower in Europe—about 10% in Germany (Pinquart & Schindler, 2007) and 13% in the Netherlands (van Solinge & Henkens, 2008)—adjustment difficulties remain. Research has identified multiple factors that affect this transition; among these, social relationships, and identification derived from social group memberships in particular, are gaining considerable attention not only for the role they play in promoting health (C. Haslam, Jetten, Cruwys, Dingle, & Haslam, 2018; S. A. Haslam et al., 2018), but also for the influence they have in supporting successful aging in general (e.g., Haslam, Cruwys, & Haslam, 2014; Seeman, Lusignolo, Albert, & Berkman, 2001). Nevertheless, the question of whether these social relationships have the same protective role in retirement adjustment across cultures remains unresolved, with some research showing that their value as a psychological buffer is greater in individualistic cultures (e.g., Chang, Jetten, Cruwys, Haslam, & Praharso, 2016; Kim, Sherman, & Taylor, 2008), and other research suggesting that they have a greater impact in collectivistic cultures (e.g., Lee, Park, & Koo, 2015). By interrogating the influence of culture further, the current research examines the contribution that social relationships and identification make in supporting the health and well-being of retirees across nations.

The Role of Social Factors in Retirement Adjustment

Models of retirement adjustment have identified a wide range of factors that contribute to this transition, including individual factors (e.g., health, financial conditions), organizational factors (e.g., working conditions, organizational polices), family and social

network factors (e.g., family and social support), and socio-economic factors (e.g., health care and pension systems; see Barbosa, Monteiro, & Murta, 2016; Wang & Schultz, 2010; Wang & Shi, 2014, for reviews). Among these, social relationships have gained attention for their capacity to support retirement adjustment, but much of this attention has focused on understanding the effects of marital or couple status and relationship quality. Here, evidence from both cross-sectional and longitudinal studies shows that retirees who are married and report better-quality relationships experience better adjustment to the transition (see Appendix A in the online supplementary material for a summary of retirement studies investigating social factors).

Relative to the number of studies that have investigated the influence of intra-household relationships in retirement, research on the contribution of other social relationships is relatively limited. Indeed, it was only relatively recently that the impact of wider social relationships, including those with social groups (e.g., peer groups, activity groups, and community groups), was recognized in Hesketh's Retirement Transition Adjustment Framework (RTAF; Hesketh, Griffin, Dawis, & Bayl-Smith, 2015). This model draws on social identity theorizing (Tajfel & Turner, 1979) to explain how a person's sense of identification with social groups is key to understanding how well they transition to retirement. For instance, identifying as a retiree and seeing this as a meaningful way to define oneself makes a person not only more open to the influence of other retirees (e.g., when planning for retirement) but also to seeking their support to help deal with the challenges that retirement poses (e.g., by joining retirement groups and sharing experiences).

The RTAF argues for the value of the social identity approach as a lens through which to understand retirement adjustment by taking into account the contribution that social groups make to this particular life change. Although meta-analytic evidence has supported the positive associations between social group identifications and health outcomes (e.g., Steffens,

Haslam, Schuh, Jetten, & van Dick, 2017), to date there has been limited interrogation of the various ways in which group life — and in particular multiple group memberships — affects retirement adjustment. On this point, the Social Identity Model of Identity Change (SIMIC; Haslam et al., 2008; Jetten, Haslam, Iyer, & Haslam, 2009), also grounded in social identity theorizing, specifies the general group processes that can affect adjustment in periods of life change, and is discussed further in the following section.

Retirement Adjustment as a Process of Social Identity Change

For many, retirement is viewed as a positive life change — a reward for a lifetime of work. But even positive, well-planned life changes (e.g., having a baby, moving cities to study or work, retiring) can be associated with uncertainty. This uncertainty has the capacity to negatively affect the health and well-being of people undergoing life change. SIMIC recognizes this possibility and identifies multiple group membership as one of the key protective factors that provides the foundation for development of other supportive processes to counter any potential detrimental effects of life change. This construct has been assessed in a variety of ways: (a) counting the number of social groups people engage in (e.g., Steffens, Cruwys et al., 2016); (b) averaging people's identification with different social groups (e.g., Greenaway et al., 2015); or (c) directly measuring the strength of identification with these multiple social groups (e.g., Jetten et al., 2015).

Social group capital of this form is beneficial for two reasons. *First*, group membership and identification enable access to tangible social and psychological resources—most notably, social support (Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005)—but also a sense of perceived control (Greenaway et al., 2015), esteem (Jetten et al., 2015), and physical resilience (Jones & Jetten, 2011). Resources of this form have been shown to have health-protective effects in periods of life change, including recovery from stroke (Haslam et al., 2008), living with depression (Cruwys et al., 2013), transitioning to university (Iyer,

Jetten, Tsivrikos, Postmes, & Haslam, 2009), and becoming a mother (Seymour-Smith, Cruwys, Haslam, & Brodribb, 2017). The benefit of accumulating such resources through membership in multiple social groups has become known as the "more-the-merrier effect" (see Iyer et al., 2009). *Second*, multiple group memberships have implications for the ways in which people subsequently engage with groups, which in turn help to protect health and well-being in the context of life change (see C. Haslam et al., 2018, for a discussion). In particular, belonging to multiple groups (a) increases the likelihood that a person will be able to hang on to the groups that matter to them when undergoing change (i.e., so that they experience *social identity continuity*) and (b) provides a platform from which to extend their social network by joining new groups (i.e., *social identity gain*).

There is emerging evidence of the importance of identification with multiple social groups specifically during the transition to retirement. Two recent studies have examined the psychological benefits of multiple group memberships for retirement adjustment. First, a cross-sectional survey study of Australian retirees found that people who belonged to more social groups after retirement experienced higher levels of retirement satisfaction, physical health, and quality of life (Steffens, Jetten et al., 2016). Second, a longitudinal study using population data from a representative sample of British retirees found that belonging to multiple groups reduced the risk of mortality and was associated with higher quality of life six years after retirement (Steffens, Cruwys et al., 2016). Taken together, these results support SIMIC's prediction that multiple group memberships are an important protective resource as people negotiate retirement. However, these data have been collected purely from Western populations, and accordingly it is unclear the extent to which belonging to multiple groups is beneficial in the adjustment of retirees in other cultural groups. This is the issue that the present research addresses.

A Cultural Perspective on Social Group Processes

Scholars have observed that participants in psychological research have predominantly been recruited from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) samples, and that this limits the generalizability of research findings to this subpopulation (Henrich, Heine, & Norenzayan, 2010). In addition, even in studies where participants are drawn from non-WEIRD populations, researchers do not clearly define culture, measure relevant cultural constructs, or develop conceptual models that seek to understand the impact of culture on health outcomes (Rudell & Diefenbach 2008; Singer et al., 2016).

In the current research context, there is a lack of cross-cultural research that examines the contribution of social identity processes to retirement adjustment in different countries. This is important because Western retirees may have particular views about social relationships and group memberships that differ from those of non-Western retirees. Accordingly, the present research seeks to explore the degree to which SIMIC's predictions about the role of multiple group memberships in retirement transition generalizes to other non-Western cultural contexts.

Culture can be defined as shared programming of the mind that distinguishes one group of people from another, and it can manifest through shared values, beliefs, norms, and patterns of behavior (Hofstede, 2001). While cross-cultural research has focused on a number of meaningful dimensions to differentiate societies and ethnic groups (e.g., Hofstede, 2001; Schwartz, 1992), one of the most relevant for understanding cultural differences in social relationships is *individualism-collectivism*.

Individualism is often used to characterize an emphasis on personal goals and uniqueness, and the concerns of an individual (or his or her individual immediate family members) tend to be prioritized over those of a collective or group (Oyserman, Coon, & Kemmelmeier, 2002; Triandis, 1995). Moreover, people from individualistic societies or

cultures tend to see themselves as largely autonomous and independent, and they understand the self in terms of individual attributes and abstract traits (Markus & Kitayama, 1991; Oyserman et al., 2002). Individualism is more prevalent in Western societies, such as in Northern and Western Europe, North America, and Australia. In contrast, collectivism is characterized by the prioritizing of the goals of (in)group members or close others over personal goals, and the self is understood as part of a collective (Oyserman et al., 2002; Triandis, 1995). Collectivism is particularly prevalent in Asian, African, and South American cultures, where people tend to define themselves in terms of valued relationships and group memberships (Markus & Kitayama, 1991; Oyserman et al., 2002).

While it is generally recognized that group life is fundamental to human survival and adaptation (Brewer & Caporael, 2006), the nature of social groups and the way they function varies across individualistic and collectivistic cultures (see Brewer & Yuki, 2007). For instance, it has been argued that individualists are more likely to leave groups when they think that there is a cost associated with involvement in a relationship that exceeds the benefits, and they are more likely to form new relationships and join new groups when their personal goals shift (Oyserman et al., 2002; Yuki & Takemura, 2014). For collectivists, alternatively, important relationships and group memberships are more likely to be viewed as ascribed and fixed (i.e., as akin to something one is born with), and, as a result, leaving groups may be difficult even when membership is neither desired nor beneficial (Oyserman et al., 2002; Yuki & Takemura, 2014).

In light of the relative importance of social groups within collectivistic cultures, one might predict that the relationship between multiple group memberships and health would be stronger in collectivistic than in individualistic cultures. Consistent with this proposition, there is evidence that organizational identification is a better predictor of organizational attitudes and behaviors in collectivistic than in individualistic cultures (Lee et al., 2015). In

contrast, meta-analytic evidence indicates that the benefit of multiple group memberships for health and well-being is smaller and less robust in collectivistic Asian societies than in individualistic Western societies (Chang et al., 2016). Indeed, the average effects of multiple group memberships on health and well-being while significant in both cultures were weaker for Asian (r = .13) than for Western participants (r = .25; Chang et al., 2016). Other research has found that people from collectivistic cultures may be more likely to benefit from social support if it is implicit (e.g., when the problem is not directly mentioned to the support provider; Taylor, Welch, Kim, & Sherman, 2007) and mutual (e.g., in a relationship context that involves mutual sharing of help and comfort; Wang & Lau, 2015). Together, these findings suggest that people from collectivistic cultures *do* benefit from social group memberships, but these effects may be smaller compared to individualistic cultures.

One potential reason why people from collectivistic societies receive fewer psychological benefits from multiple group memberships is that they might be more concerned about the potentially negative consequences of seeking support from fellow group members (Kim et al., 2008). In collectivistic cultures, seeking support from group members can be perceived as a source of burden to others, and so may be the cause of disruption to group harmony (Taylor et al., 2004). As a result, people from collectivistic cultures may not only seek less support than their counterparts from individualistic cultures but may also find seeking support to be less effective and helpful (Kim, Sherman, Ko, & Taylor, 2006). In line with this reasoning, Chang et al. (2016, Study 3) found that people who were reluctant to seek support due to a concern about burdening others were less likely to benefit from belonging to multiple groups than those who did not have such concerns.

In the context of the present discussion, these observations have important implications for the way in which people from different cultures manage stressors associated with life transition, not least of the form experienced in retirement. In particular, they suggest

that people from individualistic societies may readily draw on their important group memberships for support to protect health and well-being, but that those from collectivistic societies may be less willing to do so because they want to avoid being a source of burden on others. To address this problem, we examine cultural variation in the "more-the-merrier effect" and explain this in terms of individualism and collectivism in the present study.

The Present Research

The present research has two objectives. The first is to explore the contribution of multiple group memberships to retirement adjustment as indexed by health and psychological well-being in a range of different countries. We expect the overall effects of multiple group memberships on retirement adjustment outcomes to be positive and of small-to-moderate size across nations (based on previous research using Western samples; Steffens, Cruwys et al., 2016; Steffens, Jetten et al., 2016), despite potential cultural differences in the magnitude of these effects (the *multiple group memberships hypothesis*; H1). In this context, social group membership is indexed by two measures applied in previous research: (a) the number of a person's group memberships (Steffens, Cruwys et al., 2016) and (b) their group identification (Greenaway et al., 2015). These permit an examination of the contribution that a diverse range of social groups have on health and well-being outcomes. Moreover, to consider the unique effects of social group memberships on these outcomes relative to the contribution of other social-psychological constructs, we contrast these variables against social trust, given that the latter has also been conceptualized as an important social capital resource that protects health and well-being among older adults from diverse cultures (e.g., Pollack & van dem Knesebeck, 2004; Yip et al., 2007). Indeed, Helliwell and Barrington-Leigh (2012) found that identification with different social groups was *as* important as social trust in the prediction of psychological well-being. We extend on this finding to examine the extent to which a person's multiple group memberships uniquely predicts their health and well-being

in the retirement context, over and above the contribution by general trust in ingroup and outgroup members.

A second objective is to test the strength of this more-the-merrier effect across cultures. In light of the previous literature on cultural variation in the experience of group memberships, we expect that people from individualistic countries will be more likely to draw on, and benefit from, multiple group memberships than those in collectivistic countries. More specifically, to investigate the contribution of culture to retirement adjustment outcomes, we examine the extent to which the beneficial effects of multiple group memberships are moderated by individualism-collectivism, and we predict that these effects will be stronger in individualistic than in collectivistic societies (the *cultural variation hypothesis*; H2).

To test these hypotheses, we draw on data from the World Values Survey (WVS). One of the largest cross-national datasets, the WVS represents almost 90% of the world's population and covers countries in all of the major cultural zones in the world. This dataset provides the basis to extend on previous retirement research not only to explore the generalizability of the role of multiple group memberships in retirement adjustment but also to test for any moderating effects of cultural individualism-collectivism.

Method

Participants and Procedure

The World Values Survey collects data from about 100 countries on changing beliefs and values and their impact on the psychological, social, and political lives of individuals. There are currently six waves of cross-sectional data available for analysis, but different waves of data do not link individual respondents over time. Details about survey content and data collection procedures (e.g., sampling, language of instructions) can be found at

http://worldvaluessurvey.org. The use of the data was reviewed and approved by the research ethics office in the authors' university (approval no. 2017001606).

For the present study, we used the most recent wave of data (Wave 6; World Values Survey Association, 2015). These survey data were collected between 2010 and 2014, with 90,350 respondents from 60 countries. Only respondents who indicated that they were retired were included in our analysis. Nine countries (Argentina, Ghana, Morocco, Nigeria, Pakistan, Qatar, Rwanda, Sweden, and Thailand) with fewer than 30 respondents were excluded in order to reduce bias in the estimates of the individual-level effects (Maas & Hox, 2005). The result was a final sample of 10,513 retired individuals (50.39% females; M_{age} = 66.83, *SD* = 10.44) from 51 countries (most of which were non-Western countries). Only 0.2 to 4% of responses were missing across the variables of interest. Following Schaffer's (1997) recommendation where less than 5% of data is missing, no imputation strategy was employed for missing values; instead, the maximum likelihood estimation method was used to deal with missing data. Demographic information for each country as well as country collectivism scores are presented in Appendix B in the supplementary material.

Measures

Multiple group membership. Two measures tapping the bonds that people had with multiple social groups were extracted from the WVS. The first was the *number of group memberships*, which was calculated by summing the number of groups or organizations (e.g., religious group, sport/recreational group, and professional association) that respondents reported being a member of. This variable had scores ranging from 0 to 10. The second measure, *identification with multiple groups*, assayed people's psychological sense of identification with three groups, drawing on survey responses to items assessing community, national, and global identification (i.e., "I see myself as part of my local community", "I see myself as part of the [country]", and "I see myself as a world citizen"). Responses were made

on 4-point scales (1 = *strongly agree* to 4 = *strongly disagree*) and were reverse scored and averaged so that higher scores indicated stronger group identification (α = .55).

Social trust. Six items were used to capture the extent to which people trusted others, specifically their family, neighborhood, personal acquaintances, people that are met for the first time, people from another religion, and people from another nation. These six items were all rated on 4-point scales (1 = *trust completely* to 4 = *do not trust at all*). Previous research identified two forms of trust based on these items (Delhey, Newton, & Welzel, 2011): *ingroup trust*, which consisted of trust in one's family, neighborhood, and acquaintances (α = .59), and *outgroup trust*, which consisted of trust in strangers and in people of another religion and nation (α = .81). These were included separately in the analysis.

Physical health. A single item was used to measure physical health (i.e., "All in all, how would you describe your state of health these days?"; see Idler & Benyamini, 1997) on a scale with 1 = *very good* and 4 = *very poor*. We reversed the scores of this measure so that higher scores indicated better physical health.

Psychological well-being. Two items were used to index psychological well-being (see Diener, Diener, & Diener, 1995). The first assessed life satisfaction (i.e., "All things considered, how satisfied are you with your life as a whole these days?") and was rated on a scale from 1 = *completely satisfied* to 7 = *completely dissatisfied*. The second tapped subjective happiness (i.e., "Taking all things together, would you say you are happy?") as was rated on a scale from 1 = *very happy* to 4 = *not at all happy*. Responses on these two items were reversed, standardized, and averaged so that higher scores indicated greater psychological well-being (α = .70).

Collectivism (vs. Individualism). Our measure of country-level collectivism was a combined score generated from three cross-national projects conducted between 1992-2004 (Hofstede, 2001; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Schwartz, 1992).

Although cultural value dimensions have been identified using the World Values Survey data (Inglehart, 1997), some of the items that assess cultural values overlap with the predictor and outcome measures we used in the current study. Accordingly, we relied on data from external sources to assess country-level collectivism.

We standardized three sets of country-level collectivism scores and then averaged them to compute an overall index of collectivism ($\alpha = .91$), following previous research (Vignoles et al., 2016). The first set of scores were extracted from Hofstede's (2001) cross-national data where cultural value scores (ranging from 0 to 100) were obtained from employees in different organizations. According to Hofstede (2001), *collectivism* is defined as the preference for a tightly-connected social network where individuals in a society expect relatives or in-group members to support them in exchange for unquestioning loyalty. The second set of scores came from the GLOBE research program that surveyed managers from various organizations around the world (Gelfand, Bhawuk, Nishii, & Bechtold, 2004; House et al., 2004). The dimension of *in-group collectivism*, defined as the extent to which people expressed pride, loyalty, and cohesiveness in their organizations or families in a society, was used. Countries received a score from 1 to 7 based on their members' responses to items such as "In this society, being accepted by the other members of a group is very important," where higher scores indicate stronger collectivism. The final set of scores were sourced from data collected as part of the human values project (see Schwartz, 1992, 2004) among school teachers and college students across cultures. Schwartz (1992, 2004) identified seven values on which cultures differ. The value dimension of autonomy versus embeddedness most closely resembles individualism versus collectivism that denotes the relations and boundaries between the person and the group. The value scores for each country were computed from people's responses on value items such as obedience and respect for tradition, and these scores ranged from -1 (*opposed to my values*) to +7 (of *supreme importance).*

It is important to note that this index of collectivism captures differences in collectivism at the societal-level rather than differences across individuals. Yemen and Egypt scored the highest on this index of country collectivism, while the Netherlands and Germany scored the lowest.

Results

Table 1 presents the means, standard deviations, and bivariate correlations among the major variables. As evident in this table, the zero-order correlations revealed significant, small-to-moderate associations between multiple group membership and retirement adjustment outcomes across the sample as a whole (*r*s = .14 to .22).

<INSERT TABLE 1 ABOUT HERE>

Given the hierarchical structure in the data, with individuals nested within countries, multilevel analysis was employed to test the effects of multiple group memberships on retirees' health and well-being across countries, using the mixed-effects module in SPSS Version 24. The maximum likelihood method was used to estimate our models using all available information from the data. To facilitate interpretation, predictors at both the individual- and country-level as well as outcome variables were standardized in the models. Standardized estimates were reported which reflect the change in standard deviation in the outcome associated with one standard deviation change in the predictor (relative to the overall sample average for individual-level effects).

Effects of Social Group Membership on Health and Well-being

We first tested the extent to which number of group memberships and identification with multiple groups predicted physical health and psychological well-being across nations. The first model (M1) was the random intercept only model, which showed that 17% and 20% of the variance in health and psychological well-being, respectively, was due to between-country differences. With the random intercept included, the second model (M2) controlled

for demographic variables (i.e., respondents' sex, age, marital status, and income), and the third model (M3) included the two social trust variables. Both indices of social group membership were subsequently entered in the fourth model (M4), with their effects being fixed across nations. The final model (M5) examined whether the effects of the social group variables varied across nations by specifying random slopes. Results of these hierarchical models are summarized in Tables 2 and 3.

<INSERT TABLES 2 & 3 ABOUT HERE>

In predicting retirees' physical health, we found that the social trust variables made a significant contribution to the model after controlling for demographic variables, $\chi^2(2) = 887.30$, $p < .001$. Trust in ingroup ($\beta = 0.05$, $p < .001$) and outgroup members ($\beta = 0.03$, $p < .01$) positively predicted health at the individual-level. Importantly, beyond this, the number of group memberships and identification with multiple groups significantly predicted physical health, after taking into account demographic variables and trust, $\chi^2(2) = 327.46$, $p < .001$. Both number of group memberships and identification with multiple groups were significant positive predictors of physical health status (i.e., $\beta = 0.06$, $p < .05$, and $\beta = 0.06$, $p < .001$, respectively). When we treated group number and identification variables as random factors and examined whether regression slopes varied across countries, our results revealed that the two variance components were significant, $\chi^2(2) = 23.64$, $p < .001$. Specifically, the relationships (a) between the number of group memberships and health and (b) between identification with multiple groups and health varied across countries. Overall, our predictors explained 7% of the individual-level variance.

The same pattern of findings emerged when predicting retirees' psychological well-being. Social trust predicted psychological well-being after controlling for demographic variables ($\chi^2(2) = 1013.46$, $p < .001$), although only ingroup trust ($\beta = 0.13$, $p < .001$) and not outgroup trust ($\beta = 0.01$, $p = .22$) was positively associated with psychological well-being.

Analysis also revealed that a person's social group memberships significantly predicted their well-being, $\chi^2(2) = 419.32$, $p < .001$: Both number of group memberships ($\beta = 0.02$, $p < .05$) and identification with multiple groups ($\beta = 0.11$, $p < .001$) were positive and significant. Again, we found that the slopes of associations between social group variables and psychological well-being varied significantly across countries, $\chi^2(2) = 9.43$, $p < .05$. For psychological well-being, our predictors explained 20% of the individual-level variance.

These results suggest that retirees who placed more trust in ingroup members experienced a healthier and happier life in the retirement transition. More critical to the questions we sought to address, having more group memberships and a stronger sense of identification with multiple groups proved beneficial to retirees' health and well-being across nations after controlling for social trust and individual characteristics (e.g., age, income). Such factors might potentially affect post-retirement adjustment, supporting the *multiple group memberships hypothesis* (H1).

Moderation by Cultural Collectivism

In the next set of analyses, we tested the *cultural variation hypothesis* (H2) to determine whether country-level collectivism was a significant moderator of the relationship between social group memberships and health and well-being. To do this, we analyzed the cross-level interactions between collectivism and each of the two social group variables, with separate multilevel models constructed for physical health and psychological well-being. Interaction tests are summarized in Tables C1 and C2 in the supplementary material.

In the case of physical health, there was only a marginal interaction between identification with multiple groups and collectivism ($\beta = -0.03$, $p = .09$). For psychological well-being, the same interaction was significant for identification with multiple groups and collectivism ($\beta = -0.04$, $p < .05$) but not for number of group memberships and collectivism ($p = .83$). The interaction is plotted in Figure 1 and shows that the relationship between

multiple group identification and psychological well-being was stronger in countries with lower levels of collectivism (-1 *SD*; $\beta = 0.17$, $p < .001$) than in countries with higher levels of collectivism (+1 *SD*; $\beta = 0.09$, $p < .001$). These patterns provided partial support for H2, suggesting that retirees in individualistic cultures received greater well-being benefits from their identification with multiple groups than their counterparts from collectivistic cultures. Sensitivity analyses involving wealth and inequality are reported in Appendix D of supplementary material.

<INSERT FIGURE 1 ABOUT HERE>

Discussion

Retirement is a significant life change that comes with both opportunities (e.g., with more time to freely engage in activities of one's choosing) and potential threats (e.g., adjustment difficulties in the transition). Previous research has shown that social relationships—both with individuals (e.g., spousal and family relationships) and with social groups—can buffer against these threats (as summarized in Appendix A). The contribution of the present research is to examine the degree to which having multiple social groups is beneficial to retirees across cultural contexts.

Using data from a large cross-national survey, the World Values Survey, we examined the power of multiple group memberships to predict physical health and psychological well-being in a sample of over 10,000 retirees across 51 nations. Results confirmed our *social group membership hypothesis* (H1) by showing that belonging to and identifying with multiple groups was beneficial to retired individuals' health and well-being in both Western and non-Western nations. Moreover, multiple group memberships predicted these retirement outcomes after taking into consideration social trust and other individual attributes (e.g., age, income) that might account for these effects, which demonstrates the unique contribution of social group relationships to retirement adjustment. The effect of

multiple group membership was of small-to-moderate magnitude (see Table 1; in comparison to benchmarks in applied psychology that suggest a medium effect size of r = .16; Bosco, Aguinis, Singh, Field, & Pierce, 2015). Larger effects might have been observed if we had been able to assess our constructs of interest more precisely (given that the measures we used were drawn from data where these constructs could not be adequately indexed) and also to account for other moderating factors in addition to collectivism (given that the sample was diverse).

Consistent with our *cultural variation hypothesis* (H2), there was some evidence that the effects of identification with multiple groups on well-being varied as a function of culture, being weaker in collectivistic cultures. As predicted, retirees from collectivistic cultures experienced fewer well-being benefits from identifying with multiple social groups than their counterparts from individualistic cultures. This finding is consistent with other research which has found that people in collectivistic cultures perceive, and draw, less support from their social groups (Chang et al., 2016; Kim et al., 2008). Nevertheless, this moderating effect was found for psychological well-being, but not for physical health. Data from previous cross-cultural research may help to make sense of this divergent pattern in so far as this research has found that people from collectivistic cultures are less likely to express distress in psychological terms than people from individualistic cultures (Ryder et al., 2008). Following this logic, retirees from individualistic cultures, compared to their counterparts from collectivistic cultures, may find it more useful and acceptable to communicate their retirement-related difficulties in the form of psychological problems, and hence their psychological well-being is more protected by the support that they draw from their social groups. Further research is needed to interrogate this possibility. Nevertheless, the current study responds to the call for a systematic investigation of the effects of culture on health and

addresses the research gap by taking a cultural perspective to understand the nature and consequences of social factors in the retirement context.

Overall, these findings highlight the contribution of group-based relationships, in addition to that of family and spousal relationships, in facilitating retirement adjustment. This form of relationship is emphasized within models that draw on social identity theorizing to conceptualize the link between social groups and retirement adjustment, notably the RTAF (Hesketh et al., 2015) and SIMIC (Haslam et al., 2008; Jetten et al., 2009). Yet while the RTAF recognizes that social identity processes are involved in the retirement transition, these processes are not fully elaborated in the model. One key way in which SIMIC does this is by arguing that multiple group membership is a key social and psychological resource that protects people from the threats to health and well-being posed by changes in social identity in response to life transitions such as retirement. In providing further evidence of the importance of this resource, the current study therefore adds to a growing body of research (e.g., Steffens, Cruwys et al., 2016; Steffens, Jetten et al., 2016) which supports some of SIMIC's major premises and argues for the importance of social identity processes when seeking to understand and successfully manage the retirement transition. However, more research is needed to demonstrate that multiple group memberships have this function because they provide a basis for retirees both to maintain important group memberships and to develop new ones.

Limitations and Future Directions

While use of a large cross-national dataset provides a good opportunity to test predictions about the role of multiple group memberships and culture in a representative sample, it also comes with several limitations. First, the survey provides no data relevant to other retirement factors, such as length of retirement, retirement conditions, and retirement

planning. How these other factors might shape retirement adjustment across cultures is therefore unknown and remains to be examined.

Second, due to reliance on an existing dataset, our measures of multiple group membership and identification were not optimal. Notably, number of group memberships was based on a pre-determined list of voluntary groups or organizations, which may not capture all social groups important to retirees. In a similar vein, our measure of identification with multiple groups tapped respondents' identification with a specific set of broad and large social groups (i.e., community, nation, the globe) and thus did not capture other important social groups (e.g., family or retirement groups) that people might identify with strongly and which would be expected to have greater impact on retirement outcomes. We also relied on single items to index social identification, well-being, and physical health. Although, having said this, research has also shown that single-item measures of social identification and of health and well-being are not appreciably inferior to longer measures (e.g., Cheung & Lucas, 2014; DeSalvo et al., 2006; Postmes, Haslam, & Jans, 2013).

Third, our collectivism measure comprised cross-national data collected about two decades before the WVS Wave 6 data that were used in analysis. Although this is common practice in cross-cultural psychological research, it is important to recognize that our collectivism index may not reflect recent cultural changes in individualistic and collectivistic values (Hamamura, 2012). Moreover, whereas collectivism is recognized as a broad and multi-dimensional construct (Oyserman et al., 2002; Vignoles et al., 2016), we were unable to disentangle specific elements of this construct that might be especially influential in moderating the effects of identification with multiple groups on retirees' well-being (e.g., perceived and available support from groups, as well as more fine-grained aspects of a person's relationship with social groups). Clearly, to understand these intricacies there is a need for more nuanced measurement of this construct and its component parts.

Fourth, our analysis was based on cross-sectional data which cannot address questions about causal relationships between multiple group membership and retirement adjustment (but see Steffens, Cruwys et al., 2016, for longitudinal evidence in a Western sample). In particular, while social identity theorizing predicts that belonging to multiple groups will lead to positive retirement adjustment, it is also possible that people who have positive retirement adjustment experiences are more likely to have a positive social and group life. Longitudinal and experimental research evidence in non-Western retirement contexts is needed to interrogate this causal relationship further.

Finally, while the effect sizes in the current study are comparable to those reported in previous studies (especially in the Western retiree samples), the large sample size at the individual-level increases the chances of finding statistically significant results. Thus, there is clearly value in further research to examine more precisely the conditions under which retirees will benefit most from multiple group membership.

Conclusion

Multiple group identification provides people with a basis not only to define themselves (e.g., as Australians or retirees), but also to draw on psychological resources of support, connectedness, esteem, and control. The present research shows that in the context of the transition to retirement, the effects of multiple group memberships on health generalize across cultures. Nevertheless, these relationships also appear to vary as a function of the prevailing culture, at least in the case of psychological well-being where there was some evidence that the effects of multiple group memberships were stronger in more individualistic (vs. collectivistic) cultures. This work therefore confirms the complex interplay between social group processes, culture, and life changing contexts (e.g., the transition to retirement) when it comes to understanding health and well-being.

References

Barbosa, L. M., Monteiro, B., & Murta, S. G. (2016). Retirement adjustment predictors—A systematic review. *Work, Aging and Retirement, 2*(2), 262–280.

Bosco, F. A., Aguinis, H., Singh, K., Field, J. G., & Pierce, C. A. (2015). Correlational effect size benchmarks. *Journal of Applied Psychology, 100*(2), 431-491.

Brewer, M. B., & Caporael, L. R. (2006). An evolutionary perspective on social identity: Revisiting groups. In M. Schaller, J. A. Simpson, & D. T. Kenrick (Eds.), *Evolution and social psychology* (pp. 143–161). New York, NY: Psychology Press.

Brewer, M. B., & Yuki, M. (2007). Culture and social identity. In S. Kitayama, & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 307–322). New York, NY: Guilford Press.

Chang, M. X.-L., Jetten, J., Cruwys, T., Haslam, C., & Praharso, N. (2016). The more (social group memberships), the merrier: Is this the case for Asians? *Frontiers in Psychology, 7:1001*. doi: 10.3389/fpsyg.2016.01001.

Cheung, F., & Lucas, R. E. (2014). Assessing the validity of single-item life satisfaction measures: results from three large samples. *Quality of Life Research, 23*(10), 3809–2818.

Cruwys, T., Dingle, G. A., Haslam, C., Haslam, S. A., Jetten, J., & Morton, T. A. (2013). Social group memberships alleviate depression symptoms, prevent depression relapse, and protect against future depression. *Social Science & Medicine, 98*, 179–186.

Delhey, J., Newton, K., & Welzel, C. (2011). How general is trust in "most people"? Solving the radius of trust problem. *American Sociological Review, 76*(5), 786–807.

DeSalvo, K. B., Fisher, W. P., Tran, K., Bloser, N., Merrill, W., & Peabody, J. (2006). Assessing measurement properties of two single-item general health measures. *Quality of Life Research, 15*(2), 191–201.

Diener, E., Diener, M., & Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology, 69*(5), 851–864.

Gelfand, M. J., Bhawuk, D. P. S., Nishii, L. H., & Bechtold, D. J. (2004). Individualism and collectivism. In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman, & V. Gupta (Eds.), *Culture, leadership, and organizations: The GLOBE study of 62 societies* (pp. 437–512). Thousand Oaks: CA: Sage.

Greenaway, K. H., Haslam, S. A., Cruwys, T., Branscombe, N. R., Ysseldyk, R., & Heldreth, C. (2015). From "we" to "me": Group identification enhances perceived personal control with consequences for health and well-being. *Journal of Personality and Social Psychology, 109*(1), 53–74.

Hamamura, T. (2012). Are cultures becoming individualistic? A cross-temporal comparison of individualism-collectivism in the United States and Japan. *Personality and Social Psychology Review, 16*(1), 3–24.

Haslam, C., Jetten, J., Cruwys, T. Dingle, G. A., & Haslam, S. A. (2018). *The New Psychology of Health: Unlocking the Social Cure.* Oxford, UK: Taylor and Francis.

Haslam, C., Cruwys, T., & Haslam, S. A. (2014). "The we's have it": Evidence for the distinctive benefits of group engagement in enhancing cognitive health in aging. *Social Science & Medicine, 120*, 57–66.

Haslam, C., Holme, A., Haslam, S. A., Iyer, A., Jettem, J., & Williams, W. H. (2008). Maintaining group memberships: Social identity continuity predicts well-being after stroke. *Neuropsychological Rehabilitation, 18*, 671–691.

Haslam, S. A., McMahon, C., Cruwys, T., Haslam, C., Jetten, J., & Steffens, N. K. (2018). Social cure, what social cure? The propensity to underestimate the importance of social factors for health. *Social Science & Medicine, 198*, 14–21.

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support and the experience of stress. *British Journal of Social Psychology, 44*, 355–370.

Helliwell, J. F., & Barrington-Leigh, C. P. (2012). How much is social capital worth? In J. Jetten, C. Haslam, & S. A. Haslam (Eds.), *The social cure: Identity, health and well-being* (pp. 55–72). Hove, UK: Psychology Press.

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world. *Behavioral and Brain Sciences, 33*, 61–135.

Hesketh, B., Griffin, B., Dawis, R., & Bayl-Smith, P. (2015). Extensions to the dynamic aspects of the Retirement Transition and Adjustment Framework (RTAF): Adjustment behaviors, work styles, and identity. *Work, Aging and Retirement, 1*(1), 79–91.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organisations across nations* (2nd ed.). Thousand Oaks, CA: Sage.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Thousand Oaks, CA: Sage.

Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior, 38*(1), 21–37.

Inglehart, R. (1997). *Modernization and postmodernization*. Princeton, NJ: Princeton University Press.

Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., & Haslam, S. A. (2009). The more (and the more compatible) the merrier: Multiple group memberships and identity compatibility as predictors of adjustment after life transitions. *British Journal of Social Psychology, 48*, 707–733.

Jetten, J., Branscombe, N. R., Haslam, S. A., Haslam, C., Cruwys, T., Jones, J. M., . . . & Zhang, A. (2015). Having a lot of a good thing: Multiple important group memberships as a source of self-esteem. *PLoS ONE, 10*(5): e0124609. doi: 10.1371/journal.pone.0124609

Jetten, J., Haslam, S.A., Iyer, A., & Haslam, C. (2009). Turning to others in times of change: Social identity and coping with stress. In S. Stürmer, & M. Snyder, M. (Eds.), *The psychology of prosocial behavior: Group processes, intergroup relations, and helping* (pp. 139–156). Oxford, UK: Blackwell.

Jones, J. M., & Jetten, J. (2011). Recovering from strain and enduring pain: Multiple group memberships promote resilience in the face of physical challenges. *Social Psychological and Personality Science, 2*(3), 239–244.

Kim, H. S., Sherman, D. K., Ko, D., & Taylor, S. E. (2006). Pursuit of happiness and pursuit of harmony: Culture, relationships, and social support seeking. *Personality and Social Psychology Bulletin, 32*, 1595–1607.

Kim, H. S., Sherman, D. K., & Taylor, S. E. (2008). Culture and social support. *American Psychologist, 63*, 518–526.

Lee, E.-S., Park, T.-Y., & Koo, B. (2015). Identifying organizational identification as a basis for attitudes and behaviors: A meta-analytic review. *Psychological Bulletin, 141*(5), 1049–1080.

Maas, C. J. M., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modelling. *Methodology, 1*(3), 86–92.

Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224–253.

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128*, 3–72.

Pinquart, M., & Schindler, I. (2007). Changes of life satisfaction in the transition to retirement: A latent-class approach. *Psychology and Aging, 22*, 442–455.

Pollack, C. E., & von dem Knesebeck, O. (2004). Social capital and health among the aged: Comparisons between the United States and Germany. *Health & Place, 10*, 383–391.

Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology, 52*, 597–617.

Rudell, K., & Diefenbach, M. A. (2008). Current issues and new directions in psychology and health: Culture and health psychology. Why health psychologists should care about culture. *Psychology and Health, 23*(4), 387–390.

Ryder, A. G., Yang, J., Zhu, X., Yao, S., Yi, J., Heine, S. J., & Bagby, R. M. (2008). The cultural shaping of depression: Somatic symptoms in China, psychological symptoms in North America? *Journal of Abnormal Psychology, 117*(2), 300–313.

Schafer, J. L. (1997). *Analysis of incomplete multivariate data*. London, UK: Chapman & Hall.

Schwartz, S. H. (2004). Mapping and interpreting cultural differences around the world. In H. Vinken, J. Soeters, & P. Ester (Eds.), *Comparing cultures, Dimensions of culture in a comparative perspective* (pp. 43–73). Leiden, The Netherlands: Brill.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). San Diego, CA: Academic Press.

Seeman, T. E., Lusignolo, T. M., Albert, M., & Berkman, L. (2001). Social relationships, social support, and patterns of cognitive aging in healthy, high-functioning older adults: MacArthur studies of successful aging. *Health Psychology, 20*(4), 243–255.

Seymour-Smith, M., Cruwys, T., Haslam, S. A., & Brodribb, W. (2017). Loss of group memberships predicts depression in postpartum mothers. *Social Psychiatry and Psychiatric Epidemiology, 52*(2), 201–210.

Singer, M. K., Dressler, W., George, S., & The NIH Expert Panel (2016). Culture: The missing link in health research. *Social Science & Medicine, 170*, 237–246.

Steffens, N. K., Haslam, S. A., Schuh, S. C., Jetten, J., & van Dick, R. (2017). A meta-analytic review of social identification and health in organizational contexts. *Personality and Social Psychology Review, 21*(4), 303–335.

Steffens, N. K., Cruwys, T., Haslam, C., Jetten, J., & Haslam, S. A. (2016). Social group memberships in retirement are associated with reduced risk of premature death: Evidence from a longitudinal cohort study. *BMJ Open, 6*, e010164. doi: 10.1136/bmjopen-2015-010164.

Steffens, N. K., Jetten, J, Haslam, C., Cruwys, T., & Haslam, S. A. (2016). Multiple social identities enhance health post-retirement because they are the basis for giving social support. *Frontiers in Psychology, 7:1519*. doi: 10.3389/fpsyg.2016.01519.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin, & S. Worchel (Eds.), *The social psychology of inter-group relations* (pp.33–47). Monteray, CA: Brooks/Cole.

Taylor, S. E., Welch, W. T., Kim, H. S., & Sherman, D. K. (2007). Cultural differences in the impact of social support on psychological and biological stress responses. *Psychological Science, 18*(9), 831–837.

Taylor, S. E., Sherman, D. K., Kim, H. S., Jarcho, J., Takagi, K., & Dunagan, M. S. (2004). Culture and social support: Who seeks it and why? *Journal of Personality and Social Psychology, 87*, 354–362.

Triandis, H. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.

Vignoles, V. L., Owe, E., Becker, M., Smith, P. B., Easterrook, M. J., Gonzalez, R., . . . & Bond, M. H. (2016). Beyond the 'East-West' dichotomy: Global variation in cultural models of selfhood. *Journal of Experimental Psychology: General, 145*(8), 966–1000.

World Values Survey Association (2015). *World Values Survey*. Retrieved from http://worldvaluessurvey.org.

Wang, M. (2007). Profiling retirees in the retirement transition and adjustment process: Examining the longitudinal change patterns of retiree's psychological well-being. *Journal of Applied Psychology*, *92*(2), 455–474.

Wang, M., & Shi, J. (2014). Psychological research on retirement. *Annual Review of Psychology*, 65(1), 209–233.

Wang, M., & Shultz, K. S. (2010). Employee retirement: A review and recommendations for future investigation. *Journal of Management, 36*(1), 172–206.

Wang, S.-w., & Lau, A. S. (2015). Mutual and non-mutual social support: Cultural differences in the psychological, behavioral, and biological effects of support seeking. *Journal of Cross-Cultural Psychology, 46*(7), 916–929.

Yip, W., Subramanian, S. V., Mitchell, A. D., Lee, D. T. S., Wang, J., & Kawachi, I. (2007). Does social capital enhance health and well-being? Evidence from rural China. *Social Sciences & Medicine, 64*, 35–49.

Yuki, M., & Takemura, K. (2014). Intergroup comparison and intragroup relationships: Group processes in the cultures of individualism and collectivism. In M. Yuki, & M.

B. Brewer (Eds.), *Culture and group processes* (pp. 38–65). New York, NY: Oxford University Press.

Table 1.
Descriptive statistics and correlations for major variables.

	Mean	*SD*	1	2	3	4	5	6
1. Physical Health	2.37	0.89						
2. Psychological Well-being	-0.003	0.88	0.47					
3. Number of Group Memberships	1.18	1.92	0.22	0.17				
4. Identification with Multiple Groups	3.17	0.59	0.14	0.19	0.08			
5. Ingroup Trust	3.27	0.51	0.06	0.14	-0.01	0.10		
6. Outgroup Trust	2.19	0.71	0.09	0.11	0.16	-0.001[a]	0.37	
7. Country Collectivism	-0.29	0.84	-0.06	-0.13	-0.15	0.08	-0.003[a]	-0.14

Note. Statistics are generated from the entire sample of participants, ignoring the nested structure.
[a]All correlations are significant at the .001 level except those with this superscript.

Table 2.
Summary of Multilevel Models Predicting Physical Health.

Model	**M1**: Intercept only		**M2**: With demographics		**M3**: Add social trust predictors		**M4**: Add social group membership predictors		**M5**: Allow random slopes for social group membership	
Fixed effects	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Intercept	0.12	[-0.00, 0.23]	0.08	[-0.02, 0.18]	0.07	[-0.03, 0.16]	0.06	[-0.03, 0.15]	0.06	[-0.03, 0.15]
Sex (1=male; 0=female)			0.01	[-0.01, 0.03]	0.02*	[0.001, 0.04]	0.02*	[0.001, 0.04]	0.02*	[0.001, 0.04]
Age			-0.08***	[-0.06, -0.10]	-0.09***	[-0.07, -0.11]	-0.09***	[-0.07, -0.11]	-0.09***	[-0.07, -0.11]
Marital Status (1=married; 0=unmarried)			0.07***	[0.05, 0.09]	0.06***	[0.05, 0.08]	0.06***	[0.04, 0.08]	0.06***	[0.04, 0.08]
Income			0.17***	[0.15, 0.18]	0.17***	[0.15, 0.18]	0.16***	[0.14, 0.18]	0.16***	[0.14, 0.18]
Ingroup Trust					0.05***	[0.03, 0.07]	0.04***	[0.02, 0.06]	0.04***	[0.02, 0.06]
Outgroup Trust					0.03**	[0.01, 0.05]	0.03*	[0.01, 0.05]	0.03**	[0.01, 0.05]
Number of Group Memberships							0.06***	[0.04, 0.08]	0.06***	[0.03, 0.09]
Identification with Multiple Groups							0.06***	[0.04, 0.08]	0.08***	[0.04, 0.10]
Random effects	σ^2	95% CI	σ^2	95% CI	σ^2	95% CI	σ^2	95% CI	σ^2	95% CI
Intercept	0.16***	[0.11, 0.24]	0.12***	[0.08, 0.18]	0.11***	[0.07, 0.17]	0.10***	[0.06, 0.14]	0.09***	[0.06, 0.14]
Number of Group Memberships									0.004	[0.001, 0.01]
Identification with Multiple Groups									0.003*	[0.001, 0.01]
Deviance	27545.03		25827.84		24940.54		24613.08		24589.44	
χ^2 difference (*df*)			$\chi^2(4) = 1717.19$***		$\chi^2(2) = 887.30$***		$\chi^2(2) = 327.46$***		$\chi^2(2) = 23.64$***	

Note. Income is measured by a scale of 1 *lowest income decile* to 10 *highest income decile*. For fixed effects, standardized estimates are presented. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 3.
Summary of Multilevel Models Predicting Psychological Well-being.

Model:	**M1**: Intercept only		**M2**: With demographics		**M3**: Add social trust predictors		**M4**: Add social group membership predictors		**M5**: Allow random slopes for social group membership	
Fixed effects	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Intercept	0.03	[-0.10, 0.16]	0.01	[-0.11, 0.13]	0.002	[-0.12, 0.12]	-0.01	[-0.13, 0.11]	-0.01	[-0.12, 0.11]
Sex (1=male; 0=female)			-0.05***	[-0.03, -0.07]	-0.04***	[-0.02, -0.06]	-0.04***	[-0.02, -0.06]	-0.04***	[-0.02, -0.06]
Age			0.04***	[0.02, 0.06]	0.03**	[0.01, 0.05]	0.03**	[0.01, 0.05]	0.03**	[0.01, 0.05]
Marital Status (1=married; 0= unmarried)			0.15***	[0.13, 0.17]	0.14***	[0.12, 0.16]	0.14***	[0.12, 0.16]	0.14***	[0.12, 0.16]
Income			0.23***	[0.21, 0.25]	0.23***	[0.21, 0.24]	0.22***	[0.20, 0.24]	0.22***	[0.20, 0.24]
Ingroup Trust					0.13***	[0.11, 0.15]	0.12***	[0.10, 0.14]	0.12***	[0.10, 0.14]
Outgroup Trust					0.01	[-0.01, 0.03]	0.01	[-0.01, 0.03]	0.01	[-0.01, 0.03]
Number of Group Memberships							0.02*	[0.00, 0.04]	0.02	[-0.002, 0.05]
Identification with Multiple Groups							0.11***	[0.09, 0.13]	0.11***	[0.09, 0.14]
Random effects	σ^2	95% CI	σ^2	95% CI	σ^2	95% CI	σ^2	95% CI	σ^2	95% CI
Intercept	0.20***	[0.14, 0.30]	0.17***	[0.12, 0.26]	0.18***	[0.12, 0.27]	0.16***	[0.11, 0.24]	0.16***	[0.11, 0.25]
Number of Group Memberships									0.002	[0.001, 0.01]
Identification with Multiple Groups									0.002	[0.0004, 0.01]
Deviance	27742.74		25680.08		24666.62		24247.30		24237.87	
χ^2 difference (*df*)			$\chi^2(4) = 2062.66$***		$\chi^2(2) = 1013.46$***		$\chi^2(2) = 419.32$***		$\chi^2(2) = 9.43$*	

Note. Income is measured by a scale of 1 *lowest income decile* to 10 *highest income decile*. For fixed effects, standardized estimates are presented. *$p < .05$, **$p < .01$, ***$p < .001$.

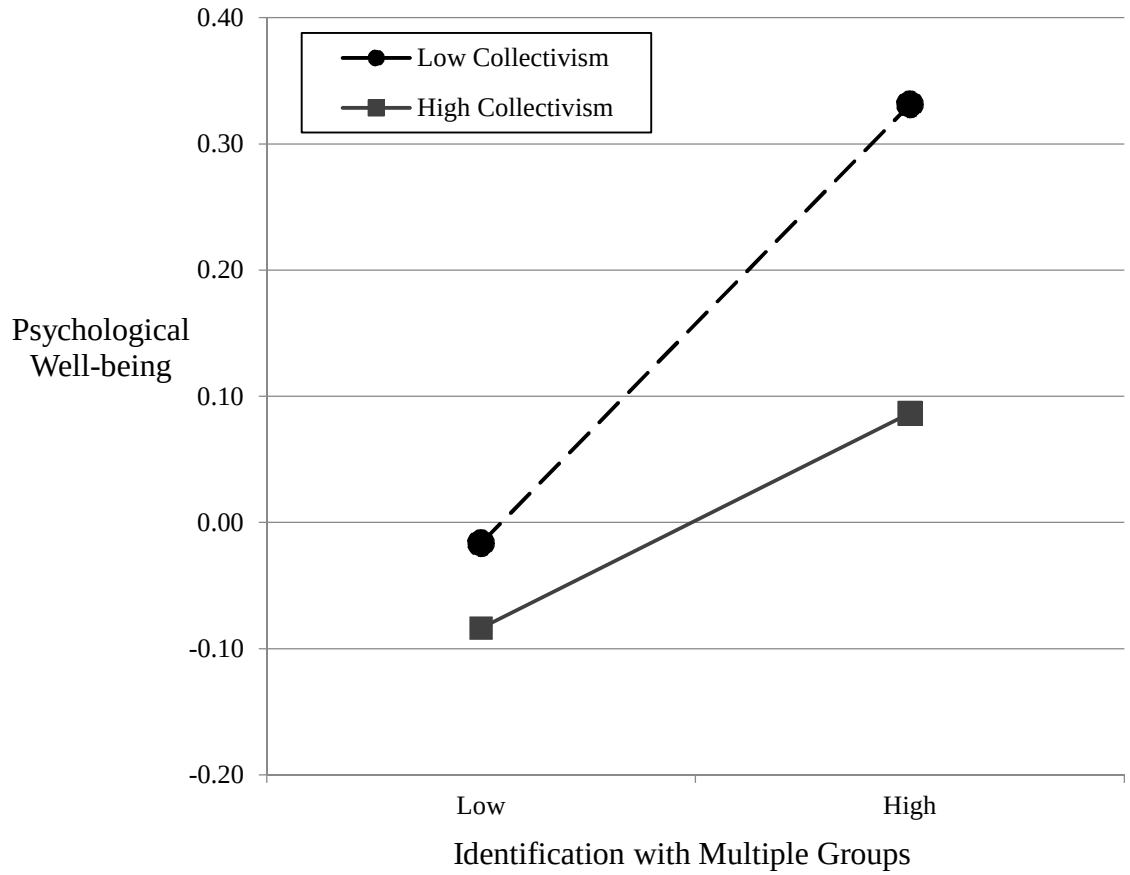

Figure 1. Plot of interaction between identification with multiple groups and country collectivism in the prediction of psychological well-being. *Note*. Dotted lines with circle end marks indicate low level of country collectivism, whereas lines with rectangular end marks indicate higher level of country collectivism.

Research Highlights

- Multiple group membership benefits the health of retirees across nations.
- Western retirees benefit more from group membership than non-Western retirees.
- Group identification uniquely contributes more to these health benefits than trust.