

Chapter 6

Social participation in later-life couples with and without limitations in physical functioning: Differences between husbands and wives

Submitted.



Abstract

Purpose: to investigate the relation between spousal physical functioning and social participation in later-life couples. *Method:* We used Dutch data of the Survey of Health, Ageing and Retirement in Europe. Social participation (SP) was the performance frequency of five social activities. Physical limitations (PL) was defined as difficulties in three or more of ten activities and no PL as no difficulties in these activities. We analysed SP of husbands and SP of wives with or without PL with the dyad as unit of analysis using analysis of variance to assess SP differences between four couple groups: (1) both no PL, N = 407; (2) wife PL, husband no PL, N = 105, (3) husband PL, wife no PL, N = 38, (4) both PL, N = 32. *Results:* SP of both husbands and wives was lower when both spouses had PL than when both spouses had no PL. SP of husbands without PL having a wife without PL (*Mean* = 1.88) did *not* significantly differ from SP of husbands *with* PL having a wife without PL (*Mean* = 1.71). SP of wives without PL having a husband with PL (*Mean* = 1.55) was significantly ($p < 0.01$) lower than SP of wives without PL having a husband without PL (*Mean* = 1.99). *Conclusions:* The results suggest that the relation between spousal physical functioning and social participation is gender specific. SP of husbands with PL seemed to benefit from having a wife without PL, whereas SP of wives without PL was restricted when their husbands had PL.

Introduction

Social participation may contribute to people's health and quality of life (Adams, 2011; Bath & Deeg, 2005; Dale et al., 2012; Levasseur, Desrosiers, & Noreau, 2004; Mendes de Leon, 2005). Evidence for the positive contribution of social participation to health is suggested to be strongest among older people (Sirven & Debrand, 2008; Veenstra, 2000). With participation restrictions being more common in later life (Arnadottir, Gunnarsdottir, Stenlund, & Lundin-Olsson, 2011) and in the oldest age groups in particular (Desrosiers et al., 2009), it is important to prevent or reduce social participation restrictions in later life (Dale, 2012; Wilkie, Peat, Thomas, & Croft, 2007). While social participation has been the focus of a substantial amount of research, there is no consensus about its definition (Bath & Deeg, 2005; Levasseur, Richard, Gauvin, & Raymond, 2010). In the present study, we operationalised social participation as the engagement in social activities; incorporating recreational and sports activities, volunteering, and civic activities.

It can be assumed that, similar to participation in general, social participation is influenced by a dynamic interaction between personal, health and contextual factors (WHO, 2001). Physical functioning is one of the main health factors that have been demonstrated to influence participation of older people. In a large population based study (Wilkie, 2007) health conditions, impairments and activity limitations were associated with participation restriction among community-dwelling adults of 50 and over. Social participation was defined as socially oriented sharing of individual resources in a cross-sectional study among a very old population, in which both age and health explained changes in social participation (Bukov, Maas, & Lampert, 2002). In contrast, a study among middle-aged and older adults (Li & Ferraro, 2006) found only slight evidence that functional limitations prevented older adults from volunteer participation over time. The findings of these studies suggest that more research is needed to understand the underlying dimensions of social participation (Levasseur et al., 2010).

In addition to physical functioning, social relationships are recognized as one of the other important factors that may influence social participation. The influence of social relationships can be two-fold; they may limit functioning of older adults, or they may enable functioning, e.g. by providing resources (Walker & Luszcz, 2009; Warner & Kelly-Moore, 2012). Among the different social relationships that may influence older people's functioning, spousal relationships are in particular relevant because in later life one's spouse has become even more important in a decreasing older person's social network (Antonucci, Akiyama & Takashashi, 2004; Lang 2001).

There is an emerging body of literature that examines the influence of spousal relationships on the functioning of couples in later life. To examine the influences of own and spousal characteristics on functioning, these dyadic studies are designed to analyse data from both spouses within the unit of the couple (Dixon, 2011; Hoppmann, Gerstorf & Luszcz, 2009; 2011). The literature in this field demonstrates evidence of mutual spousal influences in domains such as cognitive functioning, health and well-being (e.g., Kiecolt-Glaser & Newton, 2001; Korporaal, Broese van Groenou, & van Tilburg, 2008; Walker & Luszcz, 2009; Walker, Luszcz, Gerstorf, & Hoppmann, 2011). Given the importance of social participation in later life along with the increasing numbers of spouses growing old together (Gaymu, Ekamper, & Beets, 2008; Kalogirou & Murphy, 2006), it is becoming ever more important to study social participation among later-life spouses in the context of their marriage.

To our knowledge, only one dyadic study examined social participation in older couples. In this Australian longitudinal study among couples aged 70 and over, changes in four social activities were analyzed. These activities were chosen such that both partners potentially could participate. The activities were (1) inviting other people to one's home, (2) making phone calls to friends or family, (3) attending social activities at a centre such as a club, a church, or a community centre, and (4) participating in outdoor social activities. The study demonstrated that changes in these social activities depended not only on personal factors, but also on spousal cognitive, physical, and affective factors (Hoppmann, Gerstorf, & Luszcz, 2008). The present study aimed to contribute to this emerging body of knowledge. An increased

understanding of later-life spousal influences in social participation may be used to further improve interventions that support social participation in later life.

To understand how spousal factors may influence social participation, the concept of dyadic coping can be useful. Dyadic coping refers to the variety of ways in which couples deal with losses such as the loss of physical functioning. In the variation of conceptualizations of dyadic coping, two main approaches can be distinguished: (1) a comparative approach that compares how both partners cope as an individual and (2) a systemic approach where dyadic coping is conceptualized as an interactive and reciprocal process. The systemic approach is based on the assumption that the interdependence of spouses, and their shared concerns and goals stimulate dyadic coping activities (Bodenmann, Meuwly, & Kayser, 2011). In the systemic approach, there is a variety of ways of how partners could potentially interact in dyadic coping, such as un-involvement, support, control, protective buffering, and collaboration. One of the collaboration strategies is the pooling of resources of both spouses to compensate for losses in functioning in one of them (Berg & Upchurch, 2007). This dyadic coping strategy was demonstrated in a study on spousal collaboration when performing a cognitive task. In this study, older spouses with cognitive limitations performed better when collaborating with their spouse than with an unfamiliar person. The spousal collaboration was suggested to be a compensatory strategy to cope with individual ageing-related losses in cognitive functioning (Rauers, Riediger, Schmiedek, & Lindenberger, 2010). Qualitative couple studies also suggested that late-life spouses pooled their resources when coping with physical limitations (Van Nes, Runge, & Jonsson, 2009; Van Nes, Jonsson, Abma, & Deeg, 2012). In the present study, we hypothesised that the strategy of compensation by pooling of resources may also be present in later-life couples who have to deal with the loss of physical functioning in one of the spouses.

While evidence suggests that limitations in physical functioning impact social participation in older age, only limited knowledge is available about spousal influences on social participation. We investigated the relation between spousal physical functioning and social participation among couples in later life. We used

the systemic approach of dyadic coping as theoretical background. Based on the assumption of the pooling of resources we considered spouses without limitations in physical functioning to be able to contribute to the social participation of the other spouse, using their physical or other resources. From this, we expected the level of social participation of a spouse with physical functioning limitations to be higher when the partner had no physical functioning limitations than when their partner had physical functioning limitations. We also examined whether the relation between spousal physical functioning and social participation differed between husbands and wives.

Method

Sample

We used Dutch data from the “Survey of Health, Ageing and Retirement in Europe” (SHARE) because SHARE includes both spouses of couples. SHARE is a European cross-national dataset combining information on socio-economic status, health, and family relationships of the older population. The target population was defined as community-living individuals aged 50 years or over who spoke the country’s official language and their spouses/partners at the time of the interview, irrespective of their age. SHARE systematically collected data from all eligible members in one household, when it included at least one person from the target population. Data collection was based on computer-assisted personal interviewing (Börsch-Supan & Jürges, 2005). In the Netherlands, multi-stage sampling using regional and local registers was performed. The response rate was 61.3 % on the household level. The within-household response rate, defined as the ratio between the number of responding individuals and the number of eligible persons in the household, was 88 % (Börsch-Supan & Jürges). For our analyses, the sample was restricted to the 1010 heterosexual couples where both spouses completed the questionnaires of the first wave (between May and October 2004).

Measures

Social participation

Social participation (SP) was defined as participation in the following five types of social activities: (1) doing voluntary or charity work; (2) attending educational or training courses; (3) visiting sport, social or other kind of clubs; (4) taking part in a religious organization, and (5) taking part in community or social organization, with response categories 0 (no) and 1 (yes). If participants indicated they performed one or more of these activities, they were asked for each activity how often in the last four weeks they had performed this activity: almost daily (3); almost every week (2); less often (1). We used this frequency score to generate a composite score indicating the degree of social participation by multiplying each performed activity item with an indicator of the frequency: The resulting range of social participation was 0-15.

Limitations in physical functioning

Physical functioning was measured by asking the respondents whether they had difficulty with the following ten physical activities: (1) walking 100 metres; (2) sitting for two hours; (3) getting up from a chair; (4) climbing several flights of stairs; (5) climbing one flight of stairs; (6) stooping, kneeling, crouching; (7) reaching or extending arms above shoulder; (8) pulling or pushing large objects; (9) lifting or carrying weights above 5 kilos, and (10) picking up a small coin from a table. The number of physical activities that the respondent had difficulties with was an indicator for the degree of limitations. From now on, we use 'physical limitations' to refer to limitations in physical functioning.

Couple physical functioning

A new binary variable 'physical functioning' was generated in which physical limitations (PL) was defined as reporting difficulties in three or more of the ten activities. 'No physical limitations' was defined as reporting no difficulties in any of the ten activities. The respondents who had difficulties in 1 or 2 physical activities were excluded from the analyses in order to obtain enough contrast between the levels of physical functioning of two spouses within a couple. With this new binary

variable we created a four category variable based on the four possible spousal combinations of couple physical functioning: (1) both spouses had no PL; (2) the wife had PL (W+), and the husband had no PL (H-); (3) the husband had PL (H+), and the wife had no limitations (W-); (4) both spouses had PL. The new variable 'couple physical functioning' made it possible to compare the SP of husbands and the SP of wives in four couple groups with different combinations of spousal physical limitations. From now on, these groups will be indicated as (1) H-W-; (2) W+H-; (3) H+W- and (4) H+W+.

Covariates

There are several potentially confounding factors including personal and environmental characteristics. From the available continuous variables in our database, we expected age to be related with physical limitations and social participation (Bukov, Maas, & Lampert, 2002, Galenkamp, Braam, Huisman, & Deeg, 2012, Tas et al., 2011). Furthermore, it has been suggested (Christoforou, 2011) that being employed might decrease the possibilities for social participation, because there is less time available to participate in social activities.

Statistical analyses

The SHARE data are organised at the level of the individual. To make analyses possible with the couple as unit of analysis, the data of both spouses in one household had to be organized in a dyad structure. Therefore, the data files of husbands and wives were merged in such a way that one record represented one couple with the data of both spouses being adjacent. Renaming the spousal variables ensured that the data of each spouse were distinguishable as originating from the husband or the wife. Analyses were performed using SPSS 20.0 for Windows (SPSS Inc., Chicago, IL, USA). Preliminary checks showed that the social participation scores were skewed. Therefore, a natural log transformation was performed.

A one-way multivariate analysis of variance (MANCOVA) was performed to explore differences between the four groups of couples. The levels of social participation of husbands and that of wives were the bivariate dependent variables. This analysis was

adjusted for husbands' and wives' age. Employment was tested as a confounder, but was not found to affect the results. Two post-hoc univariate analyses of covariance (ANCOVA) were conducted to identify couple group differences with respectively the social participation of husbands and wives as dependent variables and controlling for age.

Results

Descriptive findings

The source sample for our analyses consisted of 1010 couples. The baseline variables are summarised in Table 1. The mean age of the men was 63.4 years and of the women 60.5 years. The percentages of employment were 36.5 among men and 31.6 among women. Men had on average 0.75 physical limitations and women had 1.23 physical limitations. The level of social participation of men was 1.33, and that of women 1.38.

Table 1. Descriptive characteristics of the individuals in the source population

N couples =1010	Gender	
	Male	Female
Age, years, mean (SD)	63.4 (9.0)	60.5 (9.1)
Range	40-99	35-88
Current job situation N (%)		
Retired	530 (52.6)	352 (35.2)
(Self) Employed	368 (36.5)	316 (31.6)
Other job situation ^a	110 (10.9)	331 (33.1)
Missing	2	11
Physical functioning		
Mean, (SD)	0.75 (1.56)	1.23 (1.92)
Range	0-10	0-10
Level, (N) (%)		
0	699 (69.3)	559 (55.5)
1-2	210 (20.9)	258 (25.6)
≥3	99 (9.8)	191 (18.9)
Missing	2	2
Social participation,		
Mean, (SD)	1.33 (1.78)	1.38 (1.77)
Range	0-15	0-15
Level, (N) (%)		
0	525 (53.4)	495 (49.6)
1-2	264 (26.8)	301 (30.2)
≥3	195 (19.8)	201 (20.2)
Missing	26	13

^a Other job situation includes: Unemployed, permanently sick or disabled, homemaker and other.

Table 2 shows the descriptive characteristics of the four couple groups. Most couples had no physical limitations (Group H-W-, N=419). Group H+W+ (N=32) was the smallest group consisting of couples with both spouses having PL. The mean ages in group H+W+ (H, 70.2; W, 68.8) were higher than in the other groups, with couples without physical limitations in group H-W- (H, 61.3; W 58.1) being the youngest. Group H-W- had the highest level of employment, followed by group W+H- and H+W. In group H+W+ no husbands reported to be (self) employed, 21.9 % of the wives in this group were (self) employed.

Table 2. Descriptive characteristics of the couple groups with and without physical limitations

	Couple groups							
	H-	W-	W+	H-	H+	W-	H+	W+
N couples	419		110		40		32	
Age, years, mean (SD)	61.3 (8.0)	58.1 (7.9)	62.3 (9.0)	64.5 (8.4)	65.3 (10.9)	62.3 (9.0)	70.2 (10.2)	68.8 (11.0)
Retired, N (%)	195 (46.5)	146 (34.8)	37 (33.6)	69 (62.7)	22 (55.0)	12 (30)	22 (68.6)	9 (28.1)
(Self) Employed, N (%)	196 (46.8)	133 (31.7)	32 (29.1)	31 (28.2)	6 (15.0)	9 (22.5)	-	7 (21.9)
Other job situation ^a , N (%)	27 (6.5)	138 (32.9)	39 (35.5)	10 (8.1)	12 (30)	18 (45)	10 (31.3)	16 (50)
Social participation, mean, (SD)	1.4 (1.7)	1.5 (1.7)	1.1 (1.7)	1.2 (1.8)	1.0 (1.4)	0.9 (1.6)	0.4 (1.1)	0.3 (0.9)

^a Other job situation includes: Unemployed, permanently sick or disabled, homemaker and other.

Note:

H-W-: couples in which both spouses have no physical limitations.

W+H-: couples in which the wife has (≥ 3) physical limitations and the husband has no physical limitations.

H+W-: couples in which the husband has (≥ 3) physical limitations and the wife has no physical limitations.

H+W+: couples in which both have physical limitations (≥ 3).

Social participation and couple physical functioning

Preliminary assumption testing was conducted to check for homogeneity of variance-covariance matrices, and equality of variance. Only the assumption of equality of variance was violated (Levine's test of equality of error variances $p < .0001$ for both dependent variables). Therefore, the alpha-level was set at .025 in subsequent analyses. The MANCOVA found a statistically significant difference between the couple groups for the combined dependent variables, $F(6, 1130) = 3.83, p = .001$; Wilks' Lambda = .96; partial eta squared = .02. Significant differences between the couple groups were also found for the two dependent variables separately. SP of husbands $F(3, 568) = 3.22, p = .022$, partial eta squared = .02. SP of wives $F(3, 568) = 6.47, p = .000$, partial eta squared = .033.

Two separate post-hoc ANCOVA's examined between-group differences (1) for SP of husbands with husbands' age as co-variate and (2) for SP of wives with wives' age as co-variate. Table 3 and 4 show the between-group differences with adjusted means and significance levels for husbands and wives. The SP of both husbands and wives in group 4 (H+W+) was significantly lower than the SP of husbands and wives in group 1 (H-W-). The ANCOVA in table 3 shows that there was *no* significant difference between husbands' SP in group 1 (H-W-) and group 3 (H+W-). The adjusted mean SP of husbands in group 1 was 1.88; the adjusted mean SP of husbands in group 3 was 1.71. The ANCOVA that examined group differences in wives' SP showed one significant group difference, i.e. between group 1 (H- W-) and group 3 (H+W-). The adjusted mean SP of wives in group 1 was 1.99; the adjusted mean SP of wives in group 3 was 1.55.

Table 3. Comparisons of the social participation of husbands in four couple group with and without spousal physical limitations

Couple groups	H-W-	W+H-	H-W-	H+W-	H-W-	H+W-	W+H-	H+W-	W+H-	H+W-	W+H-	H+W-	H+W+	H+W-	H+W+
N group	407	105	407	38	407	32	105	38	105	38	105	32	38	38	32
SP husbands	1.88	1.80	1.88	1.71	1.88	1.33	1.80	1.71	1.80	1.71	1.80	1.32	1.71	1.71	1.27
Adjusted mean difference ^a	1.04		1.10		1.48**		1.05		1.42*		1.05		1.42*		1.34
(95% CI)	(0.90, 1.20)		(0.88, 1.38)		(1.15, 1.90)		(0.82, 1.35)		(1.08, 1.85)		(0.82, 1.35)		(0.98, 1.84)		

CI confidence interval, ^a Adjusted for age
 * $P < 0.05$; ** $P < 0.01$

Table 4. Comparisons of the social participation of wives in four couple groups with and without spousal physical limitations

Couple groups	H-W-	W+H-	H-W-	H+W-	H-W-	H+W-	W+H-	H+W-	W+H-	H+W-	W+H-	H+W-	H+W+	H+W-	H+W+
N group	407	105	407	38	407	32	105	38	105	38	105	32	38	38	32
SP wives	1.99	1.67	1.99	1.55	1.99	1.24	1.67	1.55	1.67	1.55	1.67	1.24	1.55	1.55	1.24
Adjusted mean difference ^a	1.20*		1.29**		1.61***		1.08		1.34*		1.08		1.34*		1.25
(95% CI)	(1.04, 1.38)		(1.03, 1.61)		(1.24, 2.08)		(0.84, 1.38)		(1.02, 1.77)		(0.84, 1.38)		(0.90, 1.72)		

CI confidence interval, ^a Adjusted for age
 * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Discussion

The purpose of this study was to investigate the relation between spousal physical functioning and social participation in later life couples. The level of social participation of husbands and wives in couples with both having physical limitations was found to be lower than the level of social participation of husbands and wives in couples with both having no physical limitations. Analyses of the relation between spousal physical functioning and social participation demonstrated a gender-specific relation between physical functioning and social participation in the other spouse. The social participation of husbands with physical limitations whose wife had no physical limitations did not significantly differ from the social participation of husbands in couples without physical limitations, whereas a restriction of their social participation would have been expected. The social participation of wives whose husband had physical limitations was significantly lower than the social participation of wives in couples without physical limitations. This may be interpreted as the social participation of wives without physical limitations becoming restricted when their husbands have physical limitations, while this is not the case for husbands without physical limitations when their wives have physical limitations.

We departed from the theoretical assumption, grounded in a systemic approach of dyadic coping, that couples may pool their resources to deal with health decline (Berg & Upchurch, 2007). We considered spouses without physical limitations to be able to contribute to the social participation of the other spouse, using their physical or other resources. We expected the level of social participation of a spouse with physical functioning limitations to be higher when the partner had no physical functioning limitations than when the spouse had physical functioning limitations. The results confirm this expectation for the social participation of husbands with physical limitations who had a wife without physical limitations, because their social participation maintained the same level as when they had no physical limitations. The results do not confirm this expectation for the social participation of wives, because their level of social participation decreased also when their husbands had no physical limitations.

In the large body of literature that supports the health benefits of marriage for both men and women, studies have demonstrated differences between men and women. In general, evidence indicates that men benefit more from marriage than women (e.g. Kaplan & Kronick, 2006; Kiecolt-Glaser & Newton, 2001) or, alternatively, that women benefit less than men from being married (Monin, 2011). However, the relation between marriage, gender, and health is complex and the gender differences are not yet well understood (Markey & Markey, 2011). In most studies contributing to this body of literature, evidence for the gender differences was generated by comparing married women or men to their unmarried counterparts. Our approach differed from this, because our comparison was not between married and unmarried people, but between couples with different spousal combinations of physical limitations. Our results may advance the literature, by suggesting that gender effects may not only originate from being married as such, but may be also related to being married to a spouse with certain characteristics.

The literature on gender differences in relation to social participation and physical functioning in later life couples is limited. In Hoppmann's dyadic study (2008), wives performed more social activities than husbands. In contrast to our results, no gender differences were found in the relation between physical limitations and social participation. Literature on gender differences in dyadic coping is limited as well. Another dyadic study examined different coping strategies among middle-aged couples with chronic illness (Badr, 2004). It analyzed differences in coping strategy scores of ill and healthy husbands and wives. One of the coping strategies in Badr's study was 'active engagement', referring to interaction with one's spouse to solve problems as a way of coping together. Active engagement scores were found to be highest among healthy wives who had an ill husband. The lowest level of active engagement was found in ill wives who had a healthy partner. These gender differences in coping styles can be interpreted as being in line with our results. Wives without physical limitations may have used the collaborative coping style of active engagement resulting in their husband's stable level of social participation. The social participation of wives with physical limitations who were not using this coping style may decrease, because they did not use their husbands' resources. Still, dyadic

coping involves a complex combination of both spousal and individual influences, which likely involves other mechanisms as well (Lewis et al., 2006).

While acknowledging that in the relationships between spousal functioning and social participation more spousal factors likely play a role, still some tentative other explanations of the difference between husbands and wives can be offered. One of the explanations for the beneficial effect for husbands may be that husbands and wives perceived the personal value of social participation differently. In a study among older adults with visual impairments, physical health affected participation, but perceived importance was a major determinant of participation as well (Alma et al., 2012). It may be that social participation had a high priority for husbands, because they perceived it as important and that women were socialized to support their husbands (Ingersoll-Dayton & Raschick, 2004). An alternative explanation could be, that husbands with physical limitations still had sufficient own physical and other resources to maintain their level of social participation. This would imply an actor effect and not the partner effect of using their wives' resources (Kenny, 1996). The restricted social participation of wives when their husbands have physical limitations suggests they reduced their social participation activities when they had a husband with physical limitations. A possible explanation may be that their time was limited for social participation, because they wanted or needed to replace their social activities by other activities e.g. by taking over activities from their husbands to enable them to perform their own social activities. The results do not suggest that wives supported their husband by performing social activities together, because if this had been the case, their own social participation level would not have been restricted. This may imply that while women in general tend to pursue social engagement when they have physical limitations (Thomas, 2011), women who are married to a husband with physical limitations may have other priorities.

Limitations

There are several limitations in this study. First, the mean age of the participants was relatively low which limits the generalizability to couples in older age groups. The measurements were based on self-reports. Respondents may under- or overestimate their physical functioning problems or the level of their social participation. These

potential measurement problems may not be equally distributed over the couple groups, e.g. because there are gender differences in reporting physical limitations and/or social participation. Furthermore, a cross-sectional study does not permit to draw conclusions about a causal direction of the relation between physical functioning and social participation. In addition, with a more specific measure of social participation it would have been possible to differentiate between social activities undertaken alone with others than the spouse and social activities undertaken jointly with the spouse. This would have increased the possibilities to examine the pooling of resources hypothesis, because co-performing activities together has been suggested to indicate collaboration by pooling of resources (Van Nes et al., 2012).

Conclusion

This study is one of the few to report spousal influences on social participation in later life couples. The results suggest that the relation between spousal physical functioning and social participation is gender specific. Husbands with physical limitations seem to benefit when their wife has no physical limitations. They maintain the same level of social participation as when they have no physical limitations. The social participation of wives appears to become restricted when their husband has physical limitations. Their level of social participation decreases while they have no physical limitations themselves. Evidence from future dyadic couple research is needed to verify and explain these gender differences. Ultimately, this may contribute to enhanced social participation in later life and thereby to health and quality of life of husbands and wives alike.

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