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## **Exploring the Relationship between Loneliness and Subjective Well-Being in Older Couples: Longitudinal and Dyadic Perspectives**

### **Introduction**

Loneliness is a distressing emotional state linked to perceived social isolation, significantly impacting the subjective / psychological well-being (SWB) of older adults, particularly within romantic relationships. Partners may differ in terms of loneliness/SWB and such differences should be included in the analyses. Also, the relationship between loneliness and subjective well-being in a couple may be influenced by features/situations that are common to this couple, therefore understanding these interdependencies necessitates advanced analytical tools. The Actor-Partner Interdependence Model (APIM) offers a valuable framework to study how individual and partner characteristics jointly contribute to well-being outcomes. Dyadic Response Surface Analysis (DRSA) provides a novel perspective on analyzing spousal (dis)similarities in loneliness and its relationship with subjective well-being. This study aims to extend previous dyadic findings regarding individual loneliness and partners' similarity on subjective well-being among older Europeans and employs APIM and DRSA to achieve this goal.

### **Background**

Loneliness is not limited to singles; it can also affect individuals in partnerships, particularly in intimate relationships like marriage. Belongingness is a fundamental human need, and discrepancies between desired closeness and actual experiences in partnerships can lead to loneliness. While marriage is generally protective against loneliness in older adults (Fokkema, de Jong Gierveld, & Dykstra, 2012), it remains a prevalent issue. Marital experience over the life course may have differential influences on partners' mental and physical health outcomes over time (Matthews & Gallo, 2011). However, previous research has not adequately investigated these potential differential influences of marital experiences on the development of life quality or loneliness. The quality of the marriage plays a pivotal role in marital loneliness. The Distance and Isolation Cascade theory highlights how continuous negativity in a marriage can lead to emotional disengagement and loneliness (Gottman, 1999). Additionally, spousal perceptions of marriage can influence each other, contributing to shared feelings of loneliness or social connection (Berscheid & Ammazalorso, 2001).

In later life, changes in social contexts, such as retirement and reduced social circles, emphasize the significance of marital relationships for subjective well-being. Loneliness in older couples can result from low relationship quality and intense negative emotions toward a spouse, which may not lead to separation but rather to disengagement and feelings of loneliness (Moorman, 2015). Spousal similarity in personal characteristics is theorized to enhance subjective well-being by promoting better understanding and empathy (Anderson, Keltner, & John, 2003). However, empirical evidence regarding the impact of personality similarity on subjective well-being in relationships has been inconsistent.

Measurement methods for partner similarity, such as trait-level similarities and profile-level similarities, have limitations, including linear conceptualizations and the inability to capture non-linear associations (for detailed discussions on methodological limitations refer to Edwards 1993; Schönbrodt et al. 2018). Dyadic response surface analysis offers an alternative approach to explore the impact of similarity on subjective well-being.

## Research Questions

Based on the literature, the study's research questions are as follows:

- 1) What is the longitudinal effect of loneliness on SWB and its development over time (actor effect)?
- 2) What is the longitudinal association between one partner's loneliness and the second partner's well-being and its development over time (partner effect)?
- 3) What is the longitudinal influence of (dis)similarity in loneliness between partners on later well-being levels and development?
- 4) What is the longitudinal effect of (dis)similarity between partners in the development of loneliness on the development of well-being over time?

This study contributes to the literature on marriage and loneliness in later life. The findings will shed light on the challenges faced by older couples, inform interventions, and enhance the well-being and relationship quality of older couples dealing with loneliness.

## Data and methods

This study utilizes data from the 'Survey of Health, Aging and Retirement' (SHARE) panel study. SHARE aims to collect comprehensive information on demographic processes, considering the effects of health, social, economic, and environmental policies over the life-course of European citizens. The dataset includes various aspects of individual well-being and loneliness. For this study, data from the 6th, 7th, and 8th waves of SHARE conducted in 2015, 2017, and 2019, respectively, were employed. The sample was initially limited to people aged 65+ living in heterosexual relationships, resulting in a dataset comprising 7 068 couples, totaling 14 136 individual respondents. Respondents were part of different household configurations, including living alone, with a partner (married or in informal relationships), or with children.

The primary variable of interest is subjective well-being (SWB), which is measured using the CASP-12 questionnaire, a shortened version of the CASP-19 questionnaire based on Maslow's need pyramid. CASP-12 assesses control, autonomy, self-realization, and pleasure, with higher scores indicating higher well-being. In order to capture and explain the issue of loneliness, the question of 'How often do you feel lonely?' was used with three possible answers: 1. Hardly ever or never, 2. Some of the time, 3. Often. The analysis considers socio-demographic characteristics, such as age, education level, employment status, and the number of daily activity difficulties, as control variables. Household income is also controlled for.

This study employs advanced statistical techniques, including Actor–Partner Interdependence Models (APIM) (Kenny et al. 2006) and Dyadic Response Surface Analysis (DRSA) (Schönbrodt et al. 2018), to examine the relationship between loneliness, subjective well-being, and partner similarity within older couples. APIM is utilized to investigate the actor and partner effects separately. Actor effects analyze the association between an individual's loneliness at Wave 6 (W6) and their own SWB at Wave 8 (W8) (see Fig. 1). Partner effects describe the relationship between an individual's loneliness at W6 and their partner's SWB at W8. APIM is also used to analyze whether loneliness at W6 predicts SWB at W8 and its development over four years (see Fig. 2). Latent basis growth models are employed to assess the development of SWB across the study period. DRSA is applied to examine the effects of dyadic similarity in loneliness on later SWB levels and its development (see Fig. 3). DRSA combines response surface analysis (RSA) and APIM. RSA involves second-order polynomial regression, where outcome variables are regressed on predictors and their squared terms, as well as interaction terms between actor and partner levels on predictor variables. The analysis visualizes these relationships in a three-dimensional plot, highlighting congruence (LOC) and incongruence (LOIC) lines. Four response surface parameters ( $a_1$ ,  $a_2$ ,  $a_3$ ,  $a_4$ ) are derived to describe the lines' view and shape.

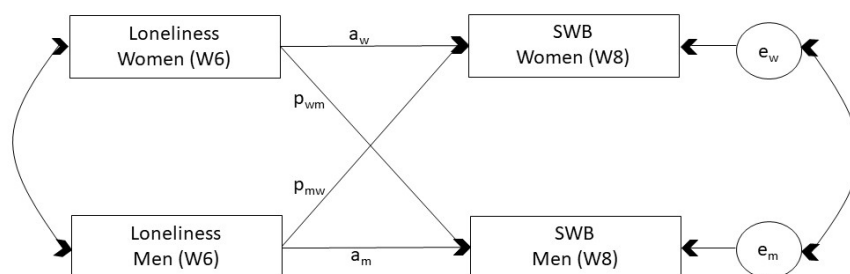


Fig. 1 APIM structure in which loneliness at W6 predicts levels of SWB at W8. Label 'a' represents actor effects, label 'b' represents partner effects. Subscript 'm' denotes effects for men, subscript 'w' denotes effects for women.

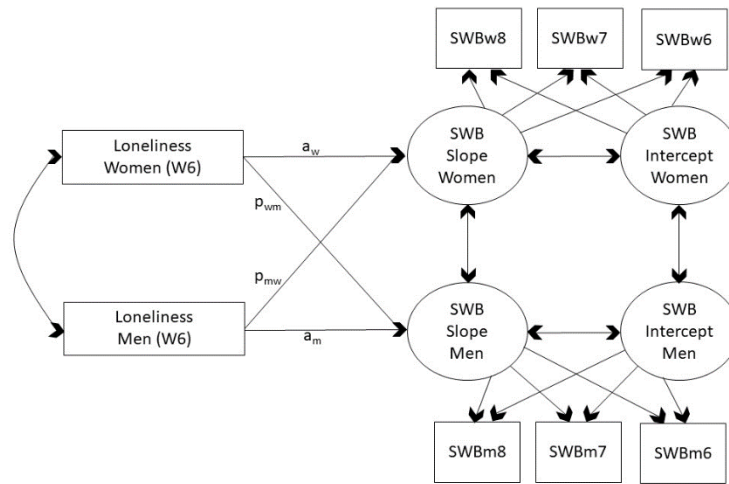


Fig. 2 APIM predicting the development of SWB across 4 years of the study by loneliness at W6. Label 'a' represents actor effects, label 'b' represents partner effects. Subscript 'm' denotes effects for men, subscript 'w' denotes effects for women.

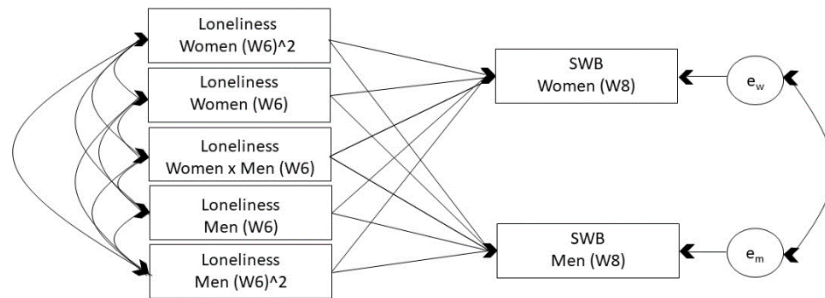


Fig. 3 Dyadic response surface analysis model which served examination of the effects of dyadic similarity in loneliness at W6 on levels of SWB at W8.

## Preliminary results

As a precursor to predictive models, univariate growth curves for men and women's subjective well-being were computed. There was an increase in SWB over time for both men and women. Both growth factor estimates were significant, which means that there is development over time on average.

The longitudinal APIM used in this study consistently demonstrated that loneliness significantly predicts lower initial levels of SWB and steeper declines in over time. Notably, this effect extends beyond the individual, impacting both partners within the relationship. Also, loneliness was rather poorly correlated between the partners, whereas the correlation between the slopes at W8 was of large size. This indicates high interdependence of SWB among couple members.

Additionally, this study preliminarily indicated the significance of the similarity in loneliness levels between partners. Gender differences emerged concerning the impact of congruence in baseline loneliness on future SWB, with women's SWB being particularly sensitive to the emotional states of their partners. Congruence in low loneliness levels was associated with the highest SWB for women, while incongruence in partners' loneliness was linked to lower SWB.

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