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## Widowhood and Well-Being in Europe: The Role of National and Regional Context

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*Researchers have documented that widows have lower levels of subjective well-being than married individuals, but we still know little about how the regional and national context affect the impact of widowhood on well-being. Building on social capital theory and using data from 5 rounds of the European Social Survey (N = 119,292 people, 206 regions, 23 countries), the authors tested how marital status composition at the national and regional level affects the well-being of widows. Widows fare worse in countries with high proportions of married and in regions and countries with high proportions of widowed persons. The proportion of married individuals at the regional level does not affect their well-being. These results are in line with the greedy marriage hypothesis, but varying effects at regional and national levels suggest that the*

*standard explanation for this phenomenon, lack of individual social support, is not valid. This study demonstrates the importance of multiple contextual embeddedness.*

The loss of a spouse is one of the most stressful events people can experience in their lives. In addition to the grief of losing a loved one, widows and widowers must learn to redefine relationships with family and friends; adjust to new routines; and take over the deceased's daily roles, such as caretaker or wage earner (Subramanian, Elwert, & Christakis, 2008). When measured against other stressful life events, including death of a child and divorce, researchers have found that bereavement of a spouse requires the greatest amount of readjustment (Stroebe & Stroebe, 1995).

Widowhood negatively affects subjective well-being not only because of the initial strain of losing a spouse but also because of the loss of resources that accompanies widowhood (Coombs, 1991; Gove, 1973; Joung et al., 1997, Shapiro & Keyes, 2008, Stack & Eshleman, 1998). These resources include emotional, social, financial, and instrumental support. Financial and instrumental support can be conceived of in terms of money and mundane services such as cooking and cleaning. Widowed individuals, like everyone, will have lower subjective well-being if they do not have access to these resources. Furthermore, widows and widowers also need access to emotional and social support. *Emotional and social support* refers to contact with others through which widowed persons can receive advice and support regarding emotional and personal matters. Becoming widowed may lessen one's opportunities to share emotions or interact with others because widowed individuals lose the connection to the deceased spouse and, possibly, also to the spouse's social network.

Despite the often-observed negative effect of widowhood on well-being (Clark & Oswald, 2002; Subramanian et al., 2008), the strength of this effect is not constant across groups. Studies have revealed that the consequences of becoming widowed vary across race (Elwert & Christakis, 2006) and gender (Lee, DeMaris, Bavin, & Sullivan, 2001). This suggests that the extent to which widowhood has a detrimental impact on well-being depends on other attributes of widowed individuals and their social environment. Some groups of widowed individuals may experience a greater loss of emotional, social, financial, and instrumental resources after bereavement than others. In addition, research has documented that the well-being of widowed individuals varies across countries, with recently widowed individuals from Southern Europe exhibiting more depressive symptoms than those from Northern Europe (Schaan, 2013), a pattern that persists even after emigration (Panagiotopoulos, Walker, & Luszcz, 2013). These cross-national differences in the impact of widowhood on well-being may be due to differences in resources among widowed individuals across countries, but they also may be due to differences in norms toward widowhood and the portrayal of widowed individuals in the media and in social discourse.

It is clear that the context in which widows and widowers live can influence their well-being, but research has yet to identify why widowed individuals are better off in some contexts than in others and which contextual factors explain differences in the well-being gap. In this study, we examined the ways in which contextual-level factors interfere with the effect of widowhood on subjective well-being via contribution to or detracting from social, emotional, financial, and instrumental resources. More specifically, we argue that the composition of married and widowed individuals at the national and subnational regional levels may determine the extent to which widowed individuals in these countries and regions receive sufficient

resources to deal with the consequences of bereavement. We aimed to answer the following research question: “To what extent do the national and regional marital status composition affect the relationship between widowhood and well-being in Europe?” We considered both widows and widowers together and, for the sake of parsimony, this group is hereafter referred to collectively as *widows*.

Several studies on contextual variation in the relationship between the family and well-being have focused on the composition of marital statuses at the national level (e.g., Huijts & Kraaykamp, 2011; Kalmijn, 2010). In this study we took an innovative approach to the question of how context affects the well-being of widowed persons by considering the regional (subnational) level alongside the national level. Studies on the role of the national marital status composition have generally assumed that the marital status composition mainly affects well-being through mechanisms of social support. Support networks in large countries, however, may not benefit individuals living in these countries. This is because the availability of support networks is more strongly visible at smaller levels of aggregation, such as the subnational region, than it will be at the country level. If the effect of the national marital status composition holds after taking into account the regional marital status composition, this would suggest that other factors at the national level, such as media representation of widows or cultural norms toward widowhood, determine the extent to which widowhood decreases well-being.

For instance, medical research is one field that may be influenced by the share of older adults in the population, which is in part reflected in the marital status composition. Products ranging from Viagra to vitamin supplements have been designed in recent years to improve the quality of life of the aging, and relatively wealthy, Baby Boom generation (Hillman, 2012), and are one example of why the marital status composition at the national level might influence

differences in the well-being of individual widows across countries. Examining only the national level, however, would dull possible contextual effects by averaging together disparate regional values. Within European countries, regions can vary dramatically, with norms, cultural traditions, social support, economic stability, and even language differing from one province or region to the next. Although recent research supports the need for considering the meso level in multilevel analyses (Nonnenmacher & Friedrichs, 2013), no study has yet combined the national and regional levels, and earlier studies have therefore not been able to determine the extent to which the theorized mechanisms do in fact drive the observed effects of marital status composition.

The strengths of our approach are further augmented by the area of study and the methodology of our analysis. First, the European context is interesting for this study because of the variation in widowhood and social support among the 23 countries under review. The proportion of widows across countries varies substantially, ranging from less than 3% to more than 9% (Eurostat, 2005). Furthermore, social support across Europe varies according to values and ideologies within the individual countries (cf. Castles & Mitchell, 1992; Fenger, 2007). Finally, sources of social support also vary across Europe, with family relationships generally being stronger in Southern Europe than in the North (Kohli, Hank, & Künemund, 2009; Reher, 1998).

Second, by using the European Social Survey, we were able to locate the subnational regions in which individuals live. We used individual data from 23 countries and 206 regions to assess the role of individually received support and other resources in the effect of the contextual marital status composition on the relationship between widowhood and well-being.

Third, we used multilevel models to more accurately assess the effect of the context in which widows live. Multilevel analysis is useful when studying the effect of contextual factors on individuals because it takes into account the clustering of individuals in regions and countries and thereby prevents the overestimation of effects at these contextual levels. Previous cross-national analyses at the individual level only were limited by not being able to adjust for variance within as well as between countries (Huijts & Kraaykamp, 2011; Kalmijn, 2010) and were not able to test hypotheses explaining differences between countries (Nonnenmacher & Friedrichs, 2013). Finally, in contrast to most studies on contextual differences in the relationship between widowhood and health, we focused on subjective rather than objective well-being.

#### THEORETICAL FRAMEWORK

##### *Social Capital Theory, the Marital Status Composition, and Well-Being*

Several studies on the effect of marital status composition on health and well-being (e.g., Huijts & Kraaykamp, 2011) build on *social capital theory* (e.g., Coleman, 1988; Putnam, 2000). Social capital theory posits that closed networks facilitate the transmission of obligations and expectations as well as social norms (Coleman, 1988), which can lead to greater access to emotional, financial, and instrumental resources for the individuals in those networks. In addition, closed social networks may have spillover effects to individuals who are not included in these networks themselves—for example, by increased levels of civic engagement and political participation, which may have beneficial effects on the production of collective goods (Putnam, 2000). As such, social capital theory states that social networks and ties have beneficial effects at both the individual and contextual levels. In applications of social capital theory to studies on health and well-being, researchers have argued that social networks have salutary effects by, for example, increasing personal contact, social support, and social engagement; by

normative influence; and by increasing pressure on governments to provide good and accessible health care and venues for social interaction (e.g., Huijts, 2011).

Similar to earlier work connecting the marital status composition to health and well-being, we posit that marital ties can also qualify as closed social networks, with consequences for the individuals involved as well as at a broader contextual level. Social capital theory is not clear, however, about who would benefit most from high proportions of married people. This depends on whether widowed people are included or excluded from the social networks of married couples. On the basis of Putnam's (2000) distinction between *bonding ties* within the same social groups and *bridging ties* between different social groups, we therefore need additional assumptions on whether married couples mainly maintain bonding ties with other married people or whether they also bridge ties with other marital status groups, such as widows. In addition, researchers often overlook the fact that widows may also form closed social networks. On the basis of social capital theory, but using additional assumptions, we arrived at contrasting hypotheses about how networks of married people as well as widowed people may affect widows' well-being.

Furthermore, most authors who have applied social capital theory to research on health and well-being have argued that effects of contextual social capital would be most visible either on the national level or on a local level, as defined by the area in which individuals live, work, and spend their leisure time (e.g., Mohnen, Groenewegen, Volker, & Flap, 2011). Although studies often operationalize the local area as a neighborhood, we argue that larger areas, such as regions or provinces, are the spatial unit within which social ties are formed. In the 1990s, the average commuter in 11 European cities lived between 5.6 and 13.9 km from work (Schwanen, 2002). These distances clearly indicate that the average person works in a different neighborhood



from where he or she lives. Because many people also socialize at work, it is likely that their social networks extend outside of their neighborhood alone. In this sense, the regional level seems to be more appropriate to locate social networks, social interaction, and social support than the neighborhood. Although we do not deny that there may also be effects at the neighborhood level, we believe a focus on neighborhood would be too narrow for the theorized mechanisms in this study. In deriving our hypotheses from social capital theory, we explicitly distinguished the regional and national levels in discussing the mechanisms through which the marital status composition would influence the relationship between widowhood and well-being.

### *Hypotheses*

On the basis of social capital theory, we derived three hypotheses to capture the three main pathways through which the marital status composition is thought to affect the individual-level relationship between widowhood and well-being: (a) the *support networks hypothesis*, (b) the *greedy marriage hypothesis*, and (c) the *peer group support hypothesis* (Huijts & Kraaykamp, 2011).

*Support networks hypothesis.* Building on social capital theory, the support networks hypothesis posits that the denser social networks of married people would be beneficial for widows. At the regional level, a large part of the mechanism behind this hypothesis assumes that widows benefit from direct contact with many married people. This means that, assuming married people include the non-married in their social networks, widows would also have access to more emotional, financial, and instrumental resources in regions with more married individuals.

Furthermore, this hypothesis also suggests that there is an effect at the country level that is over and above the role of social support at the regional level. Put more generally, a large

proportion of married may be responsible for greater social cohesion (Kravdal, 2007), from which widows would also benefit. For instance, higher levels of political participation and civic engagement (Hobbs, Christakis, & Fowler, 2013) may lead to more arrangements for and protection of vulnerable groups in society, such as the widowed; one study illustrated that governments with high levels of electoral turnout are more responsive to citizens' needs (Besley & Burgess, 2001). Hence, even without being part of the married people's denser social networks, in some cases, widows may benefit from a higher number of marital ties in their country. Taken together, the hypothesis (Hypothesis 1) stated that *the negative effect of widowhood on individual well-being is weaker when there is a high proportion of married persons within a population*. We performed two separate tests of this hypothesis at the regional (Hypothesis 1A) and national (Hypothesis 1B) level to test for possible differences in the way in which social capital affects the relationship between widowhood and well-being.

Studies often assume a buffering effect of many married people (Kravdal, 2007), an assumption that is partially supported. Low relative proportions of married people in a region are detrimental to the people living in that area (Kravdal, 2007). Nevertheless, when the specific effect of the proportion of married individuals on widows is considered, the findings do not support this hypothesis. Another study revealed that although the never-married do benefit from large proportions of married people, widows do not (Huijts & Kraaykamp, 2011).

*Greedy marriage hypothesis.* Whereas the support networks hypothesis builds from an understanding of social capital theory, which posits that married people will lessen the negative effect of widowhood by including widows in their social networks, the opposite *greedy marriage hypothesis* suggests what would happen if widows were shut out of the dense social networks of the married. The greedy marriage hypothesis proposes that a large proportion of married people

is actually detrimental to widows and will serve to exacerbate the negative effect of widowhood. According to this hypothesis, although marriage increases the social capital of married people, the benefits of this social capital do not reach the non-married. The reason is this: Married people spend less time with their families and neighbors than the formerly and never-married (Gerstel & Sarkisian, 2006), thus implying that married individuals may not be offering as much social, emotional, and instrumental support to their widowed friends and family members as do their unmarried peers. If this is the case, a region with a relatively large proportion of married individuals who maintain tightly knit, closed support networks from which widows are excluded (including social interaction not only with other married couples but also within one's own household) might mean that widows have even fewer contacts who are able to provide social and emotional support.

As with the support networks hypothesis, this reasoning is most plausible at the regional level, within which individuals tend to have social networks. At the national level, we would expect a resources effect whereby a society with more married people is beneficial for married individuals, perhaps at the expense of other marital statuses. Advertisers and politicians alike cater to the groups with the most money or the most power in an attempt to sell products and gain votes (Hillman, 2012). Widows living in countries with a large proportion of married people may suffer if married individuals have other interests than widows. Countries with progressive income tax brackets for married couples that are higher than those for individuals filing alone, for example, can create a marriage bonus that effectively penalizes widowhood. Under this type of tax regime, the same wage in a married household is taxed at a rate lower rate than that for a single household. When widows have a stronger voice, they can lobby to mitigate some of this effect, but when there are relatively more married people in a society, widows may have lower

objective and subjective well-being. In other words, we put forth Hypothesis 2, that *the negative effect of widowhood on individual well-being is stronger when there is a higher proportion of married persons within a population*. As with the support networks hypothesis, we tested this at the regional (Hypothesis 2A) and national (Hypothesis 2B) levels in order to separate out possible effects at both levels.

This hypothesis has been confirmed with regard to the effect of widowhood on subjective health at the national level (Huijts & Kraaykamp, 2011), but it has not been tested for subjective well-being. Furthermore, so far no studies have tested this line of reasoning at the regional level.

*Peer group support hypothesis.* The final hypothesis is the *peer group support hypothesis*, which suggests that a high proportion of widows at the group level will have a buffering effect on individual widows. Instead of being influenced by the proportion of married people, as predicted by the two previous hypotheses, this hypothesis states that the presence of other widows affects widows' well-being. Building on social capital theory, we therefore postulated that widows may also form closed social networks. At the regional level, this relies on the assumption that widows interact with each other and that this interaction in itself is beneficial to subjective well-being (e.g., by sharing experiences and finding emotional support). We expected that at the national level more widows will have a stronger voice in society because the larger a group is, the larger its political representation (Hillman, 2012). This may particularly be the case in countries with a large population of older widowed individuals. Political parties such as 50Plus in the Netherlands, the Croatian Party of Pensioners, and the Pensioners' Party in Norway have been created over the past few decades to lobby specifically for the needs of older adults, such as better benefits for older workers, more favorable methods of calculating pensions, and better health care for retirees. Although not all widows are older adults, those who are would

benefit in countries where their political voice is stronger; that is, *the negative effect of widowhood on individual well-being is weaker when there is a higher proportion of widowed persons within a population* (Hypothesis 3). Again, we test this hypothesis at both the regional (Hypothesis 3A) and national (Hypothesis 3B) level to get a better idea of the underlying mechanisms connecting the marital status composition to the impact of widowhood on well-being.

There is some empirical evidence in favor of this hypothesis; for example, one study found that the risk of mortality of widows is lower in neighborhoods with many widowed people (Subramanian et al., 2008). Nevertheless, the evidence against this perspective appears to be stronger. At the country level, a greater proportion of widows in fact significantly and negatively affects the self-reported health of widows (Huijts & Kraaykamp, 2011). In addition, studies of the effects of individual widows interacting with each other in the form of bereavement support groups have not been shown to lessen psychological stress, which is one dimension of subjective well-being (Kato & Mann, 1999).

#### *A Closer Look at the Mechanisms*

The three hypotheses described above assume an effect that involves both the individual and contextual levels: The national and regional marital status composition is thought to affect well-being via individual social resources. In the literature, researchers often test the hypotheses at the contextual level only (see Huijts & Kraaykamp, 2011; Kalmijn, 2010), despite the fact that a great deal of their explanatory power comes from the social resources explanation at the individual level. We conducted analyses at both the country and regional level to test various social capital mechanisms that are more applicable country or regionwide. As Nonnenmacher and Friedrichs (2013) emphasized in their meta-analysis, including only the country level may

yield an incomplete analysis because in “many cases not the entire country will be perceptible or relevant for the individual” (p. 1224). They suggested that researchers should include a meso level in analyses whenever data allow because the regional level may mediate the effect of the country level or, as in the case of the present study, it may reveal alternate processes than those at the country level. To our knowledge, researchers have not yet studied how both the macro and meso levels affect the well-being of widows. We also tested the extent to which individual level factors related to social resources (i.e., social interaction, religiosity, income, and income source) explain the hypothesized effects described above, although these were done in separate analyses in order to make our results as comparable as possible with previous research.

#### *Additional Drivers of Well-Being*

Although we were primarily interested in testing effects at the contextual level, several individual-level factors may affect well-being and are also likely differently distributed for widows than for individuals of other marital statuses. Widows may be exposed to a different level of urbanization than married individuals because of a tendency to live in different *domiciles*. Controlling for type of domicile is intended to capture in part the broader context of social integration (see House, Landis, & Umberson, 1988). Likewise, widows have a high probability of having *ever had children*, and having children may improve overall evaluations of satisfaction with life (Morgan & King, 2001). Widows are often older than individuals of other marital statuses, and *age* is also often shown to be related to well-being (Diener, Suh, Lucas, & Smith, 1999). We did not limit the sample to older respondents, despite the fact that widowhood is less likely at younger ages, because the relationship between widowhood and well-being may vary from country to country depending on the average age of widowhood. Nonetheless, a

robustness analysis limiting the sample to individuals between 50 and 75 years old did not affect the variables of interest.

*Household size*, or the number of coresidents, can also affect well-being by increasing the likelihood that social, emotional, and instrumental support are available when needed (Burt, 1987). *Gender* and *education* are also related to well-being, with women (Aldous & Ganey, 1999) and more highly educated (Diener et al., 1999) individuals consistently reporting higher levels of well-being. The data were collected from 2002 to 2010, and in order to control for changes in well-being over the course of the decade, we also controlled for *round of data collection*. We controlled for participation in *paid work* because this has also been shown to elevate well-being (Warr, 1999). Finally, many governments recognize the precarious position of both male and female widows and try to combat this by providing survivors' benefits, pensions, and other services. Despite the importance of government transfers as an income source for the widowed, this measure is often forgotten in cross-national studies of marital status and well-being. We addressed this lacuna by controlling for *government expenditure* on social benefits at the national level.

### *Data*

The individual-level data in this study came from all five completed rounds of the European Social Survey (ESS), a biennial cross-sectional survey conducted in a total of 33 European countries between 2002 and 2010. Not all countries participated in all rounds. Questions regarding marital status, well-being, social interaction, and income, among others, were asked of 241,379 respondents age 15 and older not living in an institution across all rounds and countries included in this survey. The average response rate across countries and rounds is over 60%, which is typical of international surveys (De Luca & Peracchi, 2005), and questions on the ESS

have been found to be reliable and valid (Jowell & The Central Co-ordinating Team, 2003). Supplemental information on social expenditure as a proportion of gross domestic product (GDP) per country comes from the Organisation for Economic Co-operation and Development (OECD) Factbook (OECD, 2010) and the International Labour Organization (ILO; 2012).

For the purposes of this study, we merged all five rounds of data collection in order to have more observations at each level. Data are hierarchically organized, with individuals nested in subnational regions, nested in countries. The subnational level here is defined as Level 2 of the Nomenclature of Territorial Units for Statistics (NUTS; Eurostat, 2012). NUTS regional categories divide a country according to population size, such that Level 2 regions are home to 800,000–3 million inhabitants per region. In general, these regional codes are based on existing political, cultural, or social divisions. In the Netherlands, for example, these regions represent the 12 provinces of the country. NUTS is an EU designation and therefore was not available for some countries outside the EU. When available, alternate but comparable regional coding was used (information available on request). When not available, countries were excluded, as were countries with small populations where the NUTS Level 2 is the country. The remaining 23 countries available for analysis were Austria, Belgium, Bulgaria, Switzerland, the Czech Republic, Denmark, Spain, Finland, France, Greece, Croatia, Hungary, Ireland, Israel, Italy, the Netherlands, Norway, Poland, Portugal, Romania, Sweden, Slovenia, and Slovakia.

Limiting the analysis to countries with NUTS Level 2 regions excluded 88,511 cases (37% of the original sample). This selection limited the number of countries in the analyses, but we had no reason to believe that the remaining countries comprise a biased selection. Among the countries available for analysis, all four regions of Europe (North, East, South, and West) were represented, in addition to Israel, suggesting that these analyses are generalizable within Europe.



We further limited cases to respondents ages 25–75, excluding an additional 30,940 people, or 20% of the respondents in the selected 23 countries. These limitations were made because individuals under age 25 may still live with their parents, and individuals over age 75 living outside an institution are likely to be healthier, and possibly happier, than their peers living in institutions. Other studies have made similar limitations (cf. Huijts & Kraaykamp, 2011). A small percentage—2.2%—of cases were further excluded from the analysis because of missing information on the individual-level variables, resulting in a total sample size of 119,292 respondents in 206 regions and 23 countries (see Table 1). We included all marital statuses in the analysis rather than limiting the sample to married and widowed individuals, in order to fully extract the effect of marital status composition and social expenditure on society in general versus the well-being of widows.

<Table 1 about here>

#### *Individual-Level Measurements*

*Subjective well-being* was measured as the mean of two 10-point scales of self-reported life satisfaction and happiness ( $r = .70$ ; cf. Kalmijn, 2010). If values for one question were missing (< 1% of cases), the resulting well-being value was the answer to the other question. In further tests, we also ran analyses separately on happiness and life satisfaction, but the conclusions remain unchanged (results available on request).

*Marital status* was a five-category measure of a respondent's current marital status: (a) never married, (b) married, (c) widowed, (d) divorced, and (e) unknown, with married as the reference category. Civil unions and cohabitation were treated as marriages. Three hundred seventy-three individuals with the legal marital status of “widow” were also recorded as living with a partner and assigned to the married/cohabiting category. One region in Finland had a

relatively large number of respondents (211) but many unknown values for marital status, such that there were 0 recorded widows in this region.

In regard to control variables, respondents were divided according to whether their *domicile* was a (a) big city, (b) suburb, (c) town or small city, (d) country village, (e) farm or home in the countryside, or (f) unknown, with town as the reference category. We measured having ever had *children* as a nominal variable with a value of 1 if respondents were either currently living with children at home or if they had ever had children. *Age* in years was included as both a linear and quadratic measure. Both age and age<sup>2</sup> were mean centered. To adjust for the number of coresidents living with the respondent, we took the square root of *household size*. The square root was used because each additional person does not represent the same strain on household resources or same amount of benefits. A similar term was suggested by the OECD (2012) to account for economies of scale when calculating household income. We also controlled for *gender*, *education*, *round*, and participation in paid *work*. Gender was coded by the interviewer, and education was measured as years of education. Respondents with more than 30 years of education were treated as missing and excluded (76 people, or 0.04%). Round of data collection was a categorical variable indicating during which of the five rounds the respondent had been interviewed. Round 1 (2002/2003) was the reference category. Employment status measured whether the respondent had participated in paid work in the past 7 days.

#### *Country-Level Variables*

*Proportion of married, country, and proportion of widowed, country.* We calculated these proportions from the individual response to the marital status question, aggregated at the country level and mean centered for ease of interpretation. Eurostat collects data on the marital statuses of citizens within countries within the OECD, but unfortunately that includes only a small

number of the countries in our analysis. Nonetheless, comparing the aggregated proportion of married and widowed per country with the Eurostat data (available in the online appendixes on the Journal of Marriage and Family website, [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1741-3737](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1741-3737)), we saw that the estimated proportion of widowed via our aggregated measure is quite close to the Eurostat data, whereas the married proportion varied somewhat (Eurostat, 2005). The difference in married proportions most likely came from the definition of *married* in our data, which included cohabiting couples. We used the proportion of married and widowed individuals as a proxy for social capital. Although this has been done elsewhere in the literature (Huijts & Kraaykamp, 2011; Kalmijn, 2010), we emphasize that the marital status composition was not an exhaustive measure of the broader concept of social capital.

*Social expenditure.* We defined *national government support* in this study as the amount of total social expenditure as a percentage of GDP in 2005 as reported by the OECD and the ILO. Social expenditure as a percentage of GDP grew slightly in Europe between 2000 and 2010, increasing by 3% across all countries. Only Ireland had a large change in social expenditure during this time, increasing 10% over 10 years (ILO, 2012; OECD, 2010). We measured social expenditure in 2005 in an attempt to capture the midpoint of any changes that might have occurred over the course of the decade. Government support was measured as the total social expenditure in order to capture the many ways in which governments can influence the relationship between widowhood and well-being.

#### *Regional-Level Variables*

We also aggregated the proportion of married individuals and the proportion of widowed individuals at the regional level. In three regions, country-level proportions were used because

missing values and few observations made unreliable calculation of the proportion of widows at the regional level.

#### *Variables for Additional Analyses*

Additional robustness tests included the following measures of individual social resources: *social interaction* (frequency of meeting socially with friends, relatives, or colleagues) having an *intimate discussion partner*, frequency of *religious attendance*, *source of income*, and *income category* at the individual level. At the national level, we included mean-centered *GDP*, the *proportion of individuals over age 65*, and the *aggregated proportion of the national population living in an urban area*. The individual-level variables may be mediators in the sense that the relation between marital status composition and widowhood affects these attributes, or they may be confounding factors in the sense that these factors partially determine the marital status composition in a country. Nonetheless, the test for their effect was the same.

#### *Correlations Between Macro-Level Indicators*

The proportion of married individuals and the proportion of widowed individuals were not highly correlated at either the regional ( $r = .15$ ) or national ( $r = -.08$ ) level, although—unsurprisingly—regional and national marital status compositions were correlated quite highly, with the proportion of married individuals at both levels having a correlation of .73 and the proportion widowed having a correlation of .89. The only other relatively strong correlation was the negative correlation between the national proportion of widows and social expenditure ( $r = -.45$ ).

## METHOD

We used a three-level multilevel model for analysis in this study because the data were hierarchically arranged, with respondents nested in regions within countries. By using multilevel

analysis we could allow for the random effect of widowhood, meaning that the relationship between widowhood and well-being may vary between regions and countries. Estimates that do not take the hierarchical structure into account may underestimate the standard errors on statistical tests, thereby yielding falsely significant results (Hox, 2002).

## RESULTS

### *Main Effects of National, Regional, and Individual Variables on Well-Being*

We began our analysis by running an empty multilevel model (not shown here), which revealed that respondents had, on average, high well-being (6.89 out of 10). Furthermore, 18% of the total variance in well-being could be attributed to the country level, and 1% of the variance was attributable to the region level (intraclass correlation Level 3:  $0.75/[0.75 + 0.05 + 3.3] = 0.18$ ; intraclass correlation Level 2:  $0.05/[0.75 + 0.05 + 3.3] = 0.01$ ). Although this appears small, we argue for the inclusion of both macro and meso levels, for two reasons. First, regional and country context explain relatively less of the difference in well-being than individual context. This is true in almost all multilevel analyses, but it does not minimize the importance of national and regional context; it merely indicates that one cannot predict individual well-being on the basis of national and regional context alone. Furthermore, we are interested in the variance in the *effect* of widowhood on well-being, not in the variance of well-being itself. Therefore, the random slope of widowhood (described below) will be more informative than the intraclass correlation.

Models 1 and 2 (see Table 2) introduced individual-, region-, and country-level variables to the empty multilevel model as fixed effects. Both models revealed that widows had, on average, 0.8 lower well-being than married individuals ( $p < .01$ ). Other factors that negatively influenced well-being were living in the suburbs or a town, never having had children, being

male, having fewer years of education, and being middle aged. Round of data collection was insignificant, lending support to the idea of merging all rounds of the ESS. Social expenditure was positive and significant in Model 1 ( $b_{\text{social expenditure}} = 0.07, p = .02$ ), indicating that well-being is higher in countries with higher levels of government support. Social expenditure was insignificant, however, when the proportion of widowhood was included in the model in Model 2.

<Table 2 about here>

Well-being was lower in countries with a large proportion of married ( $b_{\text{proportion married, country}} = -6.95, p = .10$ ), and in regions ( $b_{\text{proportion widow, region}} = -3.14, p < .01$ ) and countries ( $b_{\text{proportion widow, country}} = -17.72, p < .01$ ) with a large proportion of widows. Conversely, well-being was higher in regions with large proportions of married people ( $b_{\text{proportion married, region}} = 0.88, p = .01$ ). Because of little variation in the marital status composition across countries, the strength of these main effects was not as large as it would appear. A coefficient of  $-17.72$ , for example, though large, was associated with only a 0.5-point decrease in well-being per standard deviation increase of the national proportion of widowed. Even after considering greater variance in marital status composition at the regional level, however, the main effect of marital status composition at the country level was stronger than at the regional level. This was likely observed because differences in norms regarding acceptance of different marital statuses between countries are greater than differences within countries. For example, in a country with a strong norm against remarriage after widowhood, widows who do remarry may face sanctions from families and friends, thus lowering their subjective well-being. We considered an effect at the national level to be significant when the  $p$  value was  $\leq .10$  because the small number of countries may deprive the tests of statistical power, thus justifying a larger Type I error rate.

### *Random Slope of Widowhood*

Our hypotheses presupposed that the effect of widowhood varies across regions and countries. We tested this assumption by adding a random slope for the effect of widowhood, both at the region and country levels (model not shown). Random slopes were not added for the other marital statuses because we were not interested in interpreting these slopes, and adding them introduced too much variability, preventing the model from converging. The random slope on widowhood was 0.06 at the country level and 0.04 at the region level. This is not large; however, 0 falls outside of the confidence intervals for both estimated variances.

### *Proportion of Married*

In Model 3 (see Table 3) we tested our first two hypotheses, that the negative effect of widowhood on well-being is weaker (Hypothesis 1A) or stronger (Hypothesis 2A) when there is a high proportion of married persons at the regional level. We did this by adding a cross-level interaction between widowhood and proportion of married per region. The cross-level interaction, if significant, should explain some of the random slope of widowhood. This interaction term was not significant, however, and the random slope of widowhood was virtually unchanged. As a result, we failed to confirm both Hypotheses 1A and 2A, and we concluded that the proportion of married individuals in the region does not explain the differing effect of widowhood by region.

<Table 3 about here>

In Model 4 (see Table 3) we tested Hypotheses 1B and 2B, that the negative effect of widowhood on well-being is weaker (Hypothesis 1B) or stronger (Hypothesis 2B) when there is a high proportion of married persons at the country level. Unlike the interaction with the proportion of married individuals at the region level, the interaction at the country level was

negative and significant ( $b_{\text{proportion married, country} \times \text{widow}} = -3.90, p = .01$ ), confirming Hypothesis 2B and rejecting Hypothesis 1B.

### *Proportion of Widowed*

In Models 5 and 6 (see Table 3) we repeated the steps of Models 3 and 4, but using the regional and national proportion of widowed individuals instead of the proportion of married. Model 5 was a test of Hypotheses 3A and B, that the negative effect of widowhood on well-being is weaker when there is a large proportion of widowed persons at the regional and national level. We tested this hypothesis by adding a cross-level interaction between widowhood and proportion of widowed per region. This marginally significant result tentatively supports the idea that the well-being of widows is worse in regions with more widows ( $b_{\text{proportion widow, region} \times \text{widow}} = -2.17, p = .05$ ). The effect of widowhood was to decrease well-being by 1.07 points on a scale from 1 to 10 in regions where widowhood is highest (25%) compared to a 0.7-point decrease in regions where the widowhood rate is lowest (3%). These results indicate that Hypothesis 3A was not supported. Furthermore, they suggest that widows might be worse off in regions with many widows.

In Model 6 (see Table 3) we interacted the proportion of widowed at the country level with individual marital status. The interaction between widowhood and the proportion of widowed at the country level was significant and negative, failing to confirm Hypothesis 3B ( $b_{\text{proportion widow, country} \times \text{widow}} = -5.39, p < .01$ ). Being widowed decreased well-being by 1.1 points on a scale from 1 to 10 in countries where widowhood was extremely high (25%) compared to a 0.6-point decrease in countries where the widowhood rate was extremely low (3%).

### *Robustness Checks*



We also tested the inclusion of additional explanatory variables and alternate selections of the sample population (see Online Appendix Tables 2–5). Adding controls at the individual level—including social interaction, religiosity, income, and income source—had no effect on the interactions between marital status composition and widowhood, although they did significantly improve the model (measures of best fitting models: Akaike Information Criterion [AIC]<sub>Model 6</sub> = 45,7678.3; Bayesian Information Criterion [BIC]<sub>Model 6</sub> = 45,8229.7). Note that the number of cases in this model is lower ( $N = 117,394$ ) because of missing values on these variables. Nonetheless, the fact that measures of individual social resources did not explain all of the effect of marital status composition lends further credence to the idea that the marital status composition influences well-being through mechanisms other than those articulated in social capital theory. Additional explanatory variables at the national level, including GDP, the proportion of people over 65, and the rural/urban composition of the country neither significantly improved the model (AIC<sub>Model 6</sub> = 47,2705.59; BIC<sub>Model 6</sub> = 47,3073.79) nor affected the significance of the cross-level interactions other than to make a marginally significant interaction with the regional proportion of widows significant at the .05 level.

When we tested the model on various samples of the population, we found that our model was not equally applicable to different subsets of widows. When we tested the model on men and women separately, we found that cross-level interactions with widowhood were not significant for men and that the regional proportion of widows can significantly lower the well-being of female widows. Furthermore, being widowed in regions with high proportions of married individuals was detrimental to younger widows (age 25–50), whereas being widowed in regions with high proportions of widowed individuals was detrimental to older widows (age 50–75). The

model fits widows age 50–75 considerably better than it does widows age 25–75 ( $AIC_{\text{Model 6}} = 21,7461.8$ ;  $BIC_{\text{Model 6}} = 21,7773.2$ ).

## DISCUSSION

In this study we found that widows generally have lower levels of well-being than married individuals, but the extent of this difference varied across regions and countries in Europe. We attempted to explain some of this variation in the well-being of widows by looking at the marital status composition of the countries and regions in which widows live.

We found no support for the idea that the proportion of married people at the regional level affects the well-being of widows, although we did find that widows had worse well-being in countries with high proportions of married people. This phenomenon, also found by Huijts and Kraaykamp (2011), lends formal support to the greedy marriage hypothesis, whereby married individuals enjoy benefits of greater social interaction, but those benefits are not shared with people outside the marriage. According to this perspective, widowed individuals have lower well-being because married people are interacting among themselves and, in the process, closing themselves off from interaction with widowed people. When taken together with the lack of effect at the regional level, however, we cannot conclude that the proportion of married individuals at the national level affects the well-being of widows via their social interaction. An alternate explanation for this finding is that widows fare worse in countries with many married people because the policy and normative climate in the country is set up to benefit married people, or younger people in general. For example, because politicians cater to the groups with the most political power (Hillman, 2012), a large group of married people will ensure that policies benefit them, perhaps at the expense of individuals of other marital statuses. Progressive tax brackets that are higher for married couples filing jointly than they are for (widowed)

individual filers are one example of laws that effectively, though unintentionally, penalize widowhood by rewarding marriage. When widows have a stronger voice, they can lobby to mitigate some of this effect, but when there are relatively more married persons in a society, widows may have lower objective and subjective well-being.

We did find support for the idea that the proportions of widowed individuals at the regional and country levels affect the well-being of widows, although these effects were not in the direction we hypothesized. Theory suggests that a large proportion of widows will provide widows with social support, thereby improving their well-being. Contrary to expectations, the data revealed that widows had significantly worse well-being in countries with high proportions of widows and marginally significantly worse well-being in regions with many widowed people. This finding confirms prior research at the national level, which found that widows have worse health when they live in a country with many widowed individuals (Huijts & Kraaykamp, 2011), although it contradicts research at the neighborhood level that found that widows have a lower mortality rate in neighborhoods with high proportions of widows (Subramanian et al., 2008).

#### *Multiple Contextual Embeddedness*

This study demonstrated that the effect of the proportion of married people is not the same at the regional and national levels. We suggest two possible explanations for this phenomenon. On the one hand, the support networks and greedy marriage hypotheses may not be supported at the regional level of society, which would contradict social capital theory. The idea behind these hypotheses suggests that individuals are either affected directly by the people in their environment via social interaction or that they are affected indirectly, via societal norms, culture, and policy. It could be that social interaction occurs at a level smaller than the regional level (i.e., the neighborhood), leaving no visible effect at the regional level. A study at the neighborhood

level found that widows are positively affected by the proportion of married (Subramanian et al., 2008). Nevertheless, that study focused on the United States, but the neighborhood level may not be of similar relevance in the European context.

On the other hand, variations in observations across regions may explain the lack of a visible effect at the regional level. The regions with few respondents will be more susceptible to extreme averages, thus interfering with our attempt to estimate the effect of marital status composition at the regional level. Nonetheless, the different findings in the role of marital status composition at the regional and country level are encouraging indicators of a need for more studies on the role of complex, multiple contextual embeddedness. Using the best data available, we demonstrated that the effect of certain indicators varies depending on the contextual level of measurement. Widows live in layers of embeddedness, and future research should pay more attention to the way the local level interacts with the national level.

#### *Suggestions for Future Research*

We suggest that future research turn to alternate explanations to clarify the lowered well-being of widows compared to married. One answer may lie in the fact that the countries with the greatest gaps in well-being are often located in Southern and Eastern Europe, where familism and religiosity norms are more prevalent. Kalmijn (2010) found evidence that both familism and religiosity affect the well-being of divorced individuals. Future research should test to see whether these norms and values also affect the well-being of widows.

Furthermore, the selection hypothesis may explain why widows have lower well-being. Researchers sometimes use this hypothesis to discuss the relationship between marital status composition and how individual marital status affects well-being. According to this hypothesis, the smaller the group of non-married individuals, the stronger the selection of healthy people into

marriage (Hu & Goldman, 1990). This effect exists for singles, for example, because a small proportion of singles means that there is a strong normative push for singles to get married. Only the individuals with the worst position in the marriage market are left when there is social pressure toward marriage. A similar effect could take place if many couples divorce before they have the chance to be widowed. In countries with high divorce rates, there would be low widowhood rates, and the widowed could be a selective group with higher average levels of life satisfaction and day-to-day happiness than those in countries with more widows. Nonetheless, this hypothesis would need to be tested further in order to understand the extent to which the negative well-being of many widows is the result of selection.

One possible limitation of the analysis is that we did not test the theorized mechanisms directly. In an alternate analysis, we did introduce amount of social support, religiosity, income amount, and income source as control variables, and these improved the model fit but did not affect the significance of our cross-level interactions between widowhood and marital status composition. That in itself is interesting because it underscores the idea that we cannot fully model the well-being of widows without considering the context in which they live. To truly test the drivers of the influence of marital status composition, alternate methods, such as longitudinal data analysis, are required. In addition, although social capital theory provided a useful framework from which to derive hypotheses on the role of the national and regional marital status composition, we emphasize that the broad concept of social capital was not fully captured by the marital status composition and that using other indicators of social capital to test hypotheses on national and regional effects on well-being might yield different results. Finally, future research should also consider gender differences in the relationship between contextual-level factors and the effect of widowhood on well-being. Although recent research has shown

that gender differences in the effect of widowhood on well-being are negligible (Schaan, 2013), our robustness analyses suggest that the way in which the environment affects the well-being of widows may well be different for men and women. One possible explanation for these differences is the fact that the impact of widowhood on financial disadvantage appears to be stronger for women than for men (Ahn, 2004; Burkhauser, Giles, Lillard, & Schwarze, 2005). More research is needed to reveal whether this gender gap in financial disadvantage after bereavement varies across countries.

By examining the role of marital status composition in a three-level model, we were able to shed more light on the ways through which the impact of widowhood on well-being is shaped by context. Previous studies have looked exclusively at countries or neighborhoods but not at combined regions and countries. Very few well-being studies have combined multiple levels, and no studies of the effect of marital status composition on well-being have yet done so. We have identified that marital status composition has different effects at the regional and national levels, but more research is needed to determine why that is the case. This insight is integral to understanding the role of context in individuals' lives. Once we understand the mechanisms driving the relationship between marital status and well-being, we can design more effective policy to improve well-being.

#### NOTE

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Table 1. *Descriptive Statistics for Individual-, Regional-, and Country-Level Variables*

Variables	<i>M</i>	<i>SD</i>	Range
<b>Individual level</b>			
Well-being	6.95	2.02	0–10
<b>Marital status</b>			
Widowed	.07		0–1
Married	.63		0–1
Divorced	.09		0–1
Single	.19		0–1
Unknown	.01		0–1
<b>Domicile</b>			
Big city	.20		0–1
Suburbs	.12		0–1
Town	.28		0–1
Village	.32		0–1
Farm	.07		0–1
Unknown	.00		0–1
Children	.75		0–1
Age	48.76	13.98	25–75
Female	.54		0–1
Years of education	12.07	4.20	0–30
Work	.57		0–1
Household size	1.62	0.41	1–3.87
<b>Round</b>			
Round1	.19		0–1
Round 2	.20		0–1
Round 3	.16		0–1
Round 4	.21		0–1
Round 5	.23		0–1
<b>Regional level</b>			
Proportion married, region	.54	0.05	.20–.74
Proportion widowed, region	.09	0.03	.03–.25
<b>Country level</b>			
Social expenditure	21.33	4.42	9.40–29.08
Proportion married, country	.54	0.04	.45–.60
Proportion widowed, country	.09	0.03	.05–.16

*Note.* Data are from the European Social Survey, Rounds 1–5 (2002–2010); the International Labour Organization (2012), and the Organisation for Economic Cooperation and Development (2010).  $N_{\text{individual}} = 119,292$ ,  $n_{\text{region}} = 206$ ,  $n_{\text{country}} = 23$ .

Table 2. *Multilevel Fixed Effects Regression Model of Well-Being*

Predictor	Model 1		Model 2	
	Coeff.	SE	Coeff.	SE
Marital status				
Widowed	-0.84**	0.02	-0.83**	0.02
Divorced	-0.73**	0.02	-0.73**	0.02
Single	-0.53**	0.02	-0.53**	0.02
Unknown	-0.75**	0.05	-0.75**	0.05
Married (ref.)				
Domicile				
Big city	0.03*	0.02	0.03†	0.02
Suburbs	-0.01	0.02	-0.01	0.02
Village	0.06**	0.01	0.06**	0.01
Farm	0.19**	0.02	0.19**	0.02
Unknown	-0.04	0.11	-0.04	0.11
Town (ref.)				
Kids	0.05**	0.02	0.05**	0.02
Age	-0.12**	0.00	-0.12**	0.00
Age <sup>2</sup>	0.00**	0.00	0.00**	0.00
Female	0.17**	0.01	0.17**	0.01
Years education	0.05**	0.00	0.05**	0.00
Work	0.45**	0.01	0.45**	0.01
Household size	0.14**	0.02	0.14**	0.02
Round				
Round 2	0.02	0.02	0.02	0.02
Round 3	0.00	0.02	0.00	0.02
Round 4	0.02	0.02	0.02	0.02
Round 5	-0.01	0.02	-0.01	0.02
Round 1 (ref.)				
Social expenditure	0.07*	0.03	0.03	0.02
Prop married, region	0.88**	0.34		
Prop married, country	-6.95†	4.26		
Prop widowed, region			-3.14**	0.70
Prop widowed, country			-17.72**	3.64
Constant	4.98**	0.70	5.89**	0.47
Country: random effects				
Intercept	0.41**	0.12	0.18**	0.05
Region: random effects				
Intercept	0.04**	0.01	0.03**	0.00
Residual				
Intercept	3.07**	0.01	3.07**	0.01
Model fit: LL	-236,473.76		-236,457.96	
AIC	473,001.5		465,010.44	
BIC	473,263.1		465,271.62	

*Note.*  $N_{\text{individual}} = 119,292$ ,  $n_{\text{region}} = 206$ ,  $n_{\text{country}} = 23$ . Coeff. = coefficient; ref. = reference category; LL = log likelihood; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .

Table 3. *Multilevel Regression of Well-Being on Marital Status Composition*

Predictor	Model 3		Model 4		Model 5		Model 6	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Marital status								
Widow	-0.80**	0.06	-0.78**	0.05	-0.81**	0.05	-0.81**	0.05
Social expenditure	0.08**	0.02	0.08**	0.02	0.03†	0.02	0.03†	0.02
Proportion married, region	0.83*	0.34	0.85*	0.33				
Proportion married, country	00.98	3.33	-6.66†	3.98				
Proportion widowed, region					-3.37**	0.71	-3.06**	0.70
Proportion widowed, country					-13.63**	3.37	-17.08**	3.48
Proportion married, region × marital status								
Proportion married, region × widowed	0.05	0.65						
Proportion married, country × marital status								
Proportion mar, country × widowed			-3.90**	1.35				
Proportion widowed, region × marital status								
Proportion widowed, region × widowed					-2.17†	1.11		
Proportion widowed, country × marital status								
Proportion widowed, country × widowed							-5.39**	1.55
Constant	4.96**	0.53	5.05**	0.53	5.90**	0.41	5.89**	0.41
Country: random effects								
Widowhood	0.06*	0.03	0.04*	0.02	0.04*	0.02	0.03	0.02
Intercept	0.47**	0.16	0.40**	0.12	0.18**	0.06	0.17**	0.05
Covariance (widowhood, intercept)	0.15**	0.05	0.10*	0.04	0.06†	0.03	0.05*	0.02
Region: random effects								
Widowhood	0.04*	0.02	0.04*	0.02	0.05*	0.02	0.04*	0.02
Intercept	0.03**	0.01	0.03**	0.01	0.03**	0.00	0.03**	0.00
Covariance (widowhood, intercept)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Residual								
Intercept	3.07**	0.01	3.07**	0.01	3.07**	0.01	3.06**	0.01
Model fit: LL		-236,389.05		-236,373.72		-236,329.78		-236,318.26



AIC	472,848.10	472,817.43	472,729.57	472,706.53
BIC	473,187.23	473,156.56	473,068.69	473,045.65

*Note.*  $N_{\text{individual}} = 119,292$ ,  $n_{\text{region}} = 206$ ,  $n_{\text{country}} = 23$ . Domicile, children, age, age<sup>2</sup>, female, years of education, work, household size, and round of data collection were controlled for but not shown in the model. Dummy variables were used for all five marital statuses (widowed, divorced, married, single, and unknown), with married as the reference category, but coefficients for other marital statuses are not shown in model. Coeff. = coefficient; LL = log likelihood; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ .