Artículo de revista:

Social Science & Medicine

Non-standard family histories and wellbeing at older ages

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ARTICLE INFO

ABSTRACT

The life course approach emphasizes that health and wellbeing at older ages are influenced by experiences occurred in the previous stages of life. We contribute to the literature by focusing on the role of the non-standardness of family histories and argue that individuals who experienced non-standard trajectories have been exposed to social sanctions throughout their life course with negative long-term consequences on wellbeing.

In our study, non-standardness of family histories is the extent an individual's family history differs from those of the others within reference groups, defined combining birth cohort, gender and country of residence. Family histories between age of 15 and 49 are analyzed using Sequence Analysis, thus accounting for events related to fertility and union formation (marriage and cohabitation) and dissolution, and their timing. Dissimilarities between family sequences are measured using optimal matching and are standardized within the reference groups.

We use retrospective data from the seventh wave of the Survey of Health Ageing and Retirement in Europe (SHARE) and estimate linear regression models to assess the association between non-standardness of family histories and older people's life satisfaction. Quality of life and depressive symptoms are examined in additional analyses.

A negative association is found between non-standardness of family histories and wellbeing, which is stronger for lower educated individuals and in Southern European countries.

Results are consistent with the idea that uncommon family behaviors may have a long-term negative effect on wellbeing. Individual resources and a more tolerant societal context can reduce or eliminate the negative consequences of engaging in non-standard family behaviors.

1. Introduction

Within the life course framework, it has been theorized that older adults' health and wellbeing are influenced by events and experiences occurred throughout the different life stages (Carr and Utz, 2020; Pudrovska and Anikputa, 2014; Umberson and Thomeer, 2020) including fertility and partnership histories (Barclay et al., 2016; Grundy and Tomassini, 2005; Hank, 2010; Sabbath et al., 2015; Sironi et al., 2020; van den Broek and Tosi, 2020). Part of this literature adopted a holistic approach by accounting for both occurrence and timing of fertility and partnership events, thus recognizing the dynamic interdependencies among these processes (Macmillan and Copher, 2005).

Another strand of the literature examined the extent to which

individuals who experience "non-standard" (i.e., uncommon) demographic behaviors report lower wellbeing as compared to those who behave in a more common way (Kalmijn, 2010; Koropeckyj-Cox et al., 2007; Soons and Kalmijn, 2009; Zoutewelle-Terovan and Liefbroer, 2018). The consequences of non-standard family behaviors on individuals' wellbeing have been usually interpreted adopting the life course perspective or the institutionalization framework as related to the existence of social norms that influence demographic behaviors (Liefbroer and Billari, 2010). The key idea in the studies on the consequences of non-standard demographic behaviors on wellbeing is that individuals may be exposed to social, emotional and economic sanctions because of their uncommon behaviors (Soons and Kalmijn, 2009).

Although we will interpret the effects of non-standardness of family

histories as also due to violation of social norms, and despite the empirical overlap between non-standardness and non-normativity, to be clear about what we are able to directly measure in our empirical analyses, we will refer to our explanatory variable as non-standardness (rather than non-normativity) of family histories.

Our approach to measure non-standardness of family histories is inspired by the concept of "normal biography" (Levy, 1996), i. e, a standardized, ideal-typical life course shared by a social group that is 'normal' in the sense that it applies to most of its members. However, our measure is based on a more nuanced operationalization and we do not restrict the comparison of each individual life course to a modal reference, rather we compare each individual's family trajectory to those of all other members of his/her reference social group, building an average distance within these groups. In more detail, non-standardness of family histories is defined using four steps: 1) using Sequence Analysis (SA; Abbott and Tsay, 2000), we build family life courses that represent events of union formation/dissolution and childbearing between age 15 and 49; 2) we calculate distances between all pairs of sequences within "reference groups" defined by the combination of country, birth cohort and gender, which are three important dimensions along which family behaviors, as well as norms and social sanctions are likely to vary (Merton, 1968); 3) we calculate individuals' mean deviations from the sequence of all other individuals within the reference group, thus building a relative measure of non-standardeness of family histories; 4) we standardize the previous measure to pool all groups in the analyses.

Our approach can be seen as the multidimensional and holistic equivalent of approaches implemented in previous studies focused on one single family event/behavior (e.g., Kalmijn (2010) on divorce and Pirani and Vignoli (2016) on cohabitation). In these studies, the effect of deviations from standard behaviors is tested including an interaction between the considered behaviors (e.g., divorce) and its prevalence in a relevant group (e.g., percentage of divorced individuals in a country). This approach gives interesting insights but it does not permit considering detailed information about the timing of experiencing each family event as we do thanks to the application of SA. In addition, our approach allows considering the whole sequence of family events and it is not limited to one specific family event/behavior.

All in all, our approach being based on sequences of family events shares the main advantages of holistic analyses of life courses based on SA (see e.g., Billari and Piccarreta, 2005): it considers all main family events rather than focusing on one of them (e.g., divorce) and takes timing and ordering of events into account.

The fundamental idea behind our study that "deviating" behaviours are socially sanctioned is well-established. The extent to which this fundamental idea applies to "deviations" with respect to family behaviours and translates in visible effects on individuals' wellbeing is, however, matter of debate and of on-going research. Our contribution to the literature is threefold. First, while previous studies have focused on the immediate or short-term consequences of deviating family behaviours on wellbeing, we address the question of whether "deviating" family histories exert a long-term influence on wellbeing in later life. Second, past research considered specific behaviours/events (such as divorce). Instead, we propose an approach that adapts the SA methodology to study family life courses. Third, we examine heterogeneities in the association between non-standardeness of family histories and wellbeing depending on gender, education and country groups.

2. Background

2.1. Non-standardness of family histories and wellbeing at older ages

The life course approach has emphasized the importance of norms in governing demographic behaviors, and more specifically their occurrence (e.g., experiencing divorce), quantum (e.g., number of children), timing ("age norms"; e.g., ages at which individuals should marry; Settersten, 2003; Settersten and Hagestad, 1996) and sequencing (e.g.,

having children after marriage) (Liefbroer and Billari, 2010). Norms vary to certain extent over time and countries (Liefbroer and Merz, 2009; Thornton and Young-DeMarco, 2001), and social changes occurred during the second part of the past century have brought greater life course variability and acceptance of different life paths. Still, the relevance of norms for demographic behaviors has remained high (Liefbroer and Billari, 2010), especially for the cohorts we consider in our analyses (individuals born between 1932 and 1962).

A key characteristic of norms, according to the prevailing view, is that they are sustained by sanctions that include guilt, shame, economic costs, social disapproval (Cherlin, 2004; Liefbroer and Billari, 2010; Posner, 1997). Approval from others is an important element of wellbeing (Lindenberg, 2001); thus, sanctions attached to non-normative behaviors may lead to a decline in wellbeing. In addition, feelings of guilt and shame, especially "external shame", which involves negative views of self as seen through the eyes of others, are associated with lower wellbeing (Kim et al., 2011).

When social norms are institutionalized, sanctions may be inscribed into the legal system, in the form of obligations, prohibitions, or (dis) incentives (Liefbroer and Billari, 2010; Soons and Kalmijn, 2009). For example, in contexts where cohabitation is not widespread, cohabitors may not hold the same rights as married people, such as tax benefits (Soons and Kalmijn, 2009). Thus, formal sanctions may be another channel leading to negative effects of non-standard demographic behaviors on wellbeing.

Evidence of negative consequences of non-conformity exists with respect to a large variety of life choices or conditions, including unemployment and atheism (Stavrova and Fetchenhauer, 2015). Cross-country research, mostly focused on European countries, has also specifically found evidence that the adoption of non-standard demographic behaviors is associated with lower wellbeing. This strand of the literature has focused on middle-age adult individuals, rather than on older people, thus not accounting for longer term consequences on wellbeing at older ages. It also focused on specific behaviors. Cohabitors report lower wellbeing as compared to married individuals in countries with a low prevalence of cohabitation, and the gap tends to reduce with the diffusion of this type of partnership (Pirani and Vignoli, 2016; Soons and Kalmijn, 2009). Similar findings have been shown for divorce (Kalmijn, 2010; Verbakel, 2012), single parenthood (Stavrova and Fetchenhauer, 2015) and childlessness (Huijts et al., 2013). An exception is Zoutewelle-Terovan and Liefbroer (2018) that examined, separately, lifelong singlehood, childlessness, and "off-time" family transitions during adulthood in relation to loneliness at older ages. These studies have consistently found worse wellbeing associated with non-standard demographic behaviors, i.e., behaviors that were less common in a given context. Considering the country context is crucial because family life courses vary across countries (Van Winkle, 2018) also because of varying contextual norms (Lesthaeghe, 2010). We define non-standardness of family histories not only with respect to the country context, as most of the studies mentioned, but also with respect to birth cohort and gender. The relevance of the birth cohort is due to the vast literature on the increasing diversification of family trajectories in Europe over time (e.g., Toulemon, 2016). Gender differences in the timing of family events (e.g., Brückner and Mayer, 2005) and in the likelihood of experiencing certain events (e.g., remarriage (de Graaf and Kalmijn, 2003), justify the inclusion of gender in the definition of the reference group.

Within the life course framework, several conceptual mechanisms can explain the long-term consequences of non-standard family histories on wellbeing in later life. The *accumulation of risks* model (Ben-Shlomo and Kuh, 2002) posits that deleterious exposures at different life course stages inflict a cumulative damage on health. This approach has been used, for example, to conceptualize the life course influence of socio-economic status (SES) on health, arguing that is the overall burden of low SES across the life course that contributes to poor health rather than low SES at a particular life course stage (Pudrovska and Anikputa,

2014). We have argued above that non-standardness of family behaviors can lead to reduced wellbeing because of social sanctions. Adapting insights from the accumulation of risks model, we can argue that the long-term effect of non-standard family histories on wellbeing can be due to continued exposure to disapproval and sanctions provided the non-standard status (e.g., childlessness) persists. A second mechanism is suggested by the *pathway model* (Ben-Shlomo and Kuh, 2002): earlier family life course experiences shape later life course trajectories of beneficial or harmful exposures and experiences also in other domains, which in turn affect wellbeing later in life.

2.2. Heterogeneous effects of non-standardness of family histories

Although norms and the effects of their violation can vary across social groups defined along several dimensions (e.g., religious or political affiliation), here we focus on gender, education and country.

2.2.1. Gender
The cohorts of individuals we analyse spent their young and middle adulthood in contexts characterized by strong support for the male breadwinner/female homemaker model. Within this normative model, men's wellbeing is more strongly dependent on self-realization in the labor market, while for women the family sphere is more salient, for better or for worse (Simon, 1995). Thus, one may expect the negative consequences of non-standard family behaviors on later life wellbeing to be stronger for women.

Certain norms may in principle apply differently to women and men. Although empirical evidence is missing for the cohorts under investigation in our study during their adulthood, in a context of gender inequalities that characterised their life courses it can be expected that "deviating" behaviors were more disapproved for women than for men, and sanctions attached to violations of norms might have also been stronger for women. However, research on gender double standards, i.e., a different evaluation of the same behaviour for women and men often found the opposite. Settersten and Hagestad (1996), found age deadlines to be more frequent for men than for women and the perceived consequences of missing age deadlines were not gendered. Other studies found voluntary childlessness (Rijken and Merz, 2014), having children in a non-marital union and divorce of parents to be more disapproved for men (Rijken and Liefbroer, 2016). These studies have focused on more recent cohorts as compared to those we analyse, but they suggest that the consequences on wellbeing of non-standard demographic behaviors might be stronger for men.

The existing empirical evidence on gendered effects of non-standard demographic behaviors is mixed. Zhang and Hayward (2001) report a negative association between childlessness and older people's wellbeing for unpartnered men, but not for women. Similarly, Huijts et al. (2013) found that for men the overall disadvantage in terms of wellbeing of being childless was stronger than for women. On the contrary, other studies have found non-standard family histories to have stronger negative effects on wellbeing for women (Comolli et al., 2021; Lacey et al., 2016). In addition, divorced and cohabiting women have been found to be more disadvantaged in terms of their wellbeing than married women, while the gaps were weaker for men (Stavrova and Fetchenhauer, 2015; Verbakel, 2012). Yet other studies found similar associations by gender between wellbeing and non-standard demographic behaviors (Kalmijn, 2010; Koropeckyj-Cox et al., 2007; Soons et al., 2009; Zoutewelle-Terovan and Liefbroer, 2018). Thus, we examine gender differences without formulating any expectation.

2.2.2. Education
On the one hand, compared to individuals with a lower level of education, highly educated individuals have more economic and cultural resources that may help buffer the negative consequences of sanctions related to non-standard behaviors, thus reducing subsequent stress (Thoits, 1995). On the other hand, higher economic and cultural capital

may influence the ability to comply to norms (Jensen and Bute, 2010), so that for highly educated individuals the adoption of non-standard demographic behaviors, such as historically early adoption of cohabitation, may more likely be the resultant of choice rather than socio-economic disadvantage (Lesthaeghe, 2020). In other words, "deviating" behaviors for highly educated individuals may more likely follow a careful evaluation of costs and benefits. Thus, the association between the degree of non-standardness of family histories and wellbeing may be weaker for individuals with higher levels of education. None of the previous studies that specifically addressed the consequences of non-standard family histories on wellbeing at older ages tested the moderating role of education.

2.2.3. Country groups
Finally, we examine whether the association between non-standardness of family histories and older people's wellbeing varies across the country context. Countries differ in terms of cultural values, and in more "traditionalist" countries norms against non-standard family behaviors (e.g., divorce, cohabitation, childlessness) tend to be stronger (Inglehart and Baker, 2000). Correspondingly, the social and legal penalties attached to violations of these norms may be harsher (Zoutewelle-Terovan and Liefbroer, 2018). The European setting of our study offers considerable cross-national variation in family-related norms (Hofäcker and Chaloupková, 2014; Liefbroer and Merz, 2009). One extreme is represented by Scandinavian countries which show a high tolerance for "deviations" from the standard life course model (such as cohabitation or childlessness). At the other end, in Southern and Eastern Europe the acceptance of "alternative" family behaviors is lower. Finally, Western Europe represents an intermediate group (Liefbroer and Merz, 2009). Compared to more recent years, these cross-national differences were probably even larger in the past, when individuals who belong to the cohorts we examine were in their young and middle adulthood. The first wave of the European Values Studies (1981) offered, for the first time, comparative data on several countries. In that survey, for example, the percentage of respondents who declared divorce to be never justifiable was 24.1% in Italy against 9.5% in Sweden (EVS, 2011).

In our analyses, we test the moderator role of the country context by clustering countries in four groups: Northern, Western, Southern and Eastern Europe. We are aware that country-grouping is a simplification that entails a certain loss of information. However, it represents a convenient and parsimonious way to test whether the association between non-standardness of family histories and wellbeing of older people varies across macro contexts. As noticed above, the groups of countries we consider strongly differ in terms of norms related to demographic behaviors. Variations in demographic attitudes and behaviors across these groups of countries have also been widely documented within the framework of the Second Demographic Transition (SDT), and similar groupings as our have been often employed (e.g., Sobotka and Toulemon, 2008; Lesthaeghe, 2020).

In the early phases of the SDT, differences across regions were striking (Lesthaeghe, 2020). In the 1960s, for example, the percentage of children born outside of marriage was about 10% in Northern and Western European countries, while it was extremely rare in Southern Europe (Sobotka and Toulemon, 2008). Overall, Northern European countries showed the highest prevalence of non-standard demographic behaviors and the most tolerant attitudes towards "deviating" behaviors. Thus, we expect the association between non-standardness of family histories and older people's wellbeing to be the weakest there. At the other extreme, we expect to find the Southern European group. The Western and Eastern European groups are expected to occupy intermediate positions in this ranking leaning, respectively, towards the pattern of results of Northern and Southern Europe.

3. Data and methods

3.1. Sample and variables

We use data from the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is a panel survey representative of the non-institutionalized population aged 50 and over in different European countries (Börsch-Supan et al., 2008). We use data from the part of the seventh wave (SHARE-7, 2017) that collected detailed retrospective information in different life domains like fertility and partnership histories, as well as on early-life conditions (SHARELIFE). Our main outcome and control variables were also available in SHARE-7. The following countries participated in SHARE-7: Denmark, Finland, Sweden (Northern Europe); Austria, Belgium, France, Germany, Luxembourg, Switzerland (Western Europe); Cyprus, Greece, Italy, Malta, Portugal, Spain (Southern Europe); Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia (Eastern Europe).

The initial total sample is composed of 60,112 individuals. We restricted the analyses to individuals aged 55–85 years at the time of SHARE-7 (i.e., individuals born between 1932 and 1962). The sample reduced to 51,616 individuals. The upper limit is imposed to avoid that the end of the sequence of family histories is too close for certain individuals to the time at which the outcome is measured. We excluded individuals older than 85 (born between 1915 and 1931) to avoid including cohorts not yet affected by changes in demographic behaviors that gave rise to increasing diversity in family histories. We dropped individuals born abroad (N = 4,456) with the aim of maintaining trajectories within the same country. We also dropped 1,007 observations with no information on the family histories. The final sample is composed of 46,153 individuals. Item missing values (3,873 individuals had at least one missing value) have been imputed 20 times using Multivariate Imputation by Chained Equations (MICE), including in the imputation all variables considered in the analyses.

Our outcome is a standard life satisfaction measure: "on a scale from 0 to 10 where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?". In our working sample, the mean life satisfaction was 7.6 (standard deviation = 1.9).

The main independent variable is the *dissimilarity index,* a measure of the average difference between the respondent's family trajectory and those of the others in the same reference group. Details on the construction of this measure are in the next section.

As for the choice of control variables, we followed recent advices in the methodological literature that suggest controlling for confounders and not controlling for mediators (see e.g., Cinelli et al., 2022). Thus, we control for *gender, age* at the time of the survey and birth *cohort* (1932–1940; 1941–1950; 1951–1962) to account for differences in the historical contexts experienced by individuals. In preliminary analyses we considered different definitions of the cohorts, also based on the overall sample not restricted by age, and we did not find this to matter. We also control for *country of residence.*

Other controls measure retrospectively early-life conditions to adjust, as much as possible, for possible selection effects. Early-life disadvantages in terms of poor health and low socio-economic status have been shown to shape both the likelihood of individuals experiencing "deviating" demographic behaviors and to display long-lasting associations with health and wellbeing at older ages (Arpino et al., 2018b; Pudrovska and Anikputa, 2014). Thus, we control for: *living with biological parents at age 10* ("both biological parents" - reference; "only one biological parent"; "no biological parent"); *occupation of main breadwinner at 10* ("managerial", "professional", "skilled non-manual" - reference, "skilled manual"; "semi-skilled & unskilled manual"; "other"); *self-defined health at childhood* ("excellent" - reference; "very good"; "good"; "fair"; "poor"; "health varied a great deal"); *overcrowding rate of the household at age 10,* measured in terms of number of rooms per household member ("1 or less" - reference; "more than 1 to 1.5"; "more

than 1.5 to 2"; "more than 2"). See Section A of the Supplementary Materials (SM) for details on the operationalization of the controls. Other variables such as current partnership status and income were seen as possible mediators, and were thus not used as controls. Table S1 in the SM contains summary statistics on all variables used in the regression analyses. Table S2 reports relevant cell sizes.

3.2. Methods

We defined the possible states that shape the family trajectories according to individuals' union status (unpartnered, married, cohabiting) and the number of children (both biological or not; 0, 1, 2, 3+). This gave a total of 12 possible states, measured yearly from age 15 to 49. Optimal Matching (OM) is used to measure dissimilarities between trajectories by considering how much effort is required to transform one sequence into each of the others, giving rise to a matrix of distances between family trajectories.

Following recent work (e.g., Comolli et al., 2021), we used the OM variant called dynamic Hamming matching (DHM; Lesnard, 2010) to better account for timing of transitions. In this way, the only operation done to compare two sequences is substitution of states with time-dependent costs, inversely proportional to transition frequencies from a state to another. We used the algorithm in the *R* package *TraMineR* (Gabadinho et al., 2011). Our dissimilarity index is calculated as the mean of the distances resulting from DHM between each individual trajectory and all the trajectories within the reference group (i.e., the comparison is not limited to the modal trajectory). In this way, we account for the substantial variability in family behaviors across gender, cohort and country. Higher values of the index correspond to less standard family histories as compared to those of others with the same gender, country and birth cohort; thus, the dissimilarity index is a relative measure of non-standardness of family histories. We standardised the index within each reference group. Section B of the SM provide more details on the construction of the dissimilarity index and Table S4 provides examples of dissimilarity index values for different sequences. In a robustness check we considered an alternative reference group defined by the occupation of the breadwinner when the respondent was aged 10 and whether religion was important when growing up (see SM).

Preliminary analyses showed a strongly non-linear relationship between the dissimilarity index and life satisfaction. Thus, we categorize this variable using quartiles (the reference category is the "first quartile", or more precisely the group of individuals with a value of the dissimilarity index smaller than the first quartile of its distribution). We use linear regression models because the assumption of cardinality for life satisfaction is supported by previous studies (Ferrer-i-Carbonell and Frijters, 2004). We also assessed the robustness of the findings to this choice. All models include all controls listed above without higher order terms. While cohort, gender and country (and education in a robustness check) are considered as factors that define the relevant social group, we also tested the moderator role of gender, country and education by adding (one at the time) interactions between these variables and the quartiles of the dissimilarity index. As anticipated above, in this step countries have been clustered in four groups.

4. Results

First, we describe the quartiles of the dissimilarity index according to the main aspects that define the family histories. Second, we show the regression estimates of the association between life satisfaction and the dissimilarity index quartiles. Third, we present results about the heterogeneity in the studied relationship. Fourth, we show findings from additional analyses aimed at better interpreting the results from the baseline model. Finally, we summarize a series of robustness checks.

4.1. Family profiles of the quartiles of the dissimilarity index

The quartiles of the dissimilarity index display, as expected, different family features (Table 1) with the non-standardness of fertility and partnership behaviors (e.g., the percentage of individuals who experienced union dissolution, cohabitation, re-partnership and extra-marital childbearing) increasing from the first to the fourth quartile. A feature characterizes in particular the fourth quartile: the presence of a substantial proportion (18.6%) of individuals who never lived with a partner and the associated high level of childlessness. Among those who had children, the mean age at the first child is lowest in the fourth quartile. The first two quartiles are dominated by individuals who had 2 children; the other two show high percentages of individuals who had either less or more children than the modal value of 2. Our approach aims at measuring the extent family sequences are "deviant" compared to those of the others, independently of *how* they deviate. Thereby, the fourth quartile, and to a lesser extent the third one, includes a varied set of non-standard family experiences. Notice also that given the holistic nature of the approach, interrelated events (e.g., having children outside of marriage and early childbearing) are "clustered" together.

4.2. Association between quartiles of the dissimilarity index and life satisfaction

Table 2 reports the estimated coefficients of the quartiles of the dissimilarity index on life satisfaction from the baseline regression model. Individuals in all quartiles from the second to the fourth display statistically significantly lower life satisfaction as compared to individuals in the first quartile (full estimates are in Table S5). The gap in life satisfaction is the strongest for the fourth against the first quartile (0.38 points). This coefficient amounts to 20% of the sample standard deviation of life satisfaction. However, this association is substantial. In fact, its magnitude is similar to the effect of other relevant known predictors of life satisfaction, such as education (the coefficient of high vs low education is 0.48; Table S7).

Now let turn to the heterogeneity analyses. To ease interpretation of findings, Figs. 1–3 display predicted life satisfaction by the quartiles of the dissimilarity index and the levels of the moderators. Fig. 1 shows that life satisfaction decreases as we move from the first to the fourth quartile following very similar patterns by gender. Thus, for men and women non-standardness of family histories is negatively and similarly and associated with life satisfaction at older ages (none of the interactions between the dissimilarity index quartiles with gender is statistically significant; Table S6 of the SM).

Table 1

Family characteristics by the quartiles of the dissimilarity index.

Variables	Quartiles				Total
	1	2	3	4	
1st time living with partner					
Median age	24.2	23.3	23.8	24.3	23.9
Never (%)	0.0	0.0	0.2	18.6	4.6
Experienced a union dissolution (%)	7.8	13.5	21.8	27.9	17.7
Experienced a cohabitation (%)	1.1	2.1	5.2	17.8	6.5
Experienced re-partnering (%)	4.8	9.6	13.8	15.5	10.9
1st child (Median age)	26.1	25.2	25.6	24.1	25.4
Number of children (at age 49)					
0	0.0	0.1	5.0	39.4	10.9
1	0.4	6.2	37.0	28.3	17.9
2	89.7	60.9	17.6	9.6	44.8
3 or +	9.9	32.8	40.4	22.7	26.4
Total	100.0	100.0	100.0	100.0	100.0
Had children outside of marriage (%)	4.2	13.5	22.2	34.4	18.5

Note: all variables are measured for the period of the life course between ages 15 and 49. Percentages refer to the share of the sample that experience each event or condition.

Table 2

Key estimates from a linear regression model predicting life satisfaction as a function of non-standardness of family histories.

Independent variables	beta	se
Quartiles dissimilarity index (ref. Quartile 1)		
Quartile 2	−0.07**	0.02
Quartile 3	−0.15***	0.02
Quartile 4	−0.38***	0.03

Note: The table reports the estimated coefficients and standard errors of the dissimilarity index quartiles from the baseline model. N = 46,153. Full estimates are in Table S5 of the SM. †p < 0.1; *p < 0.05, **p < 0.01, ***p < 0.001.
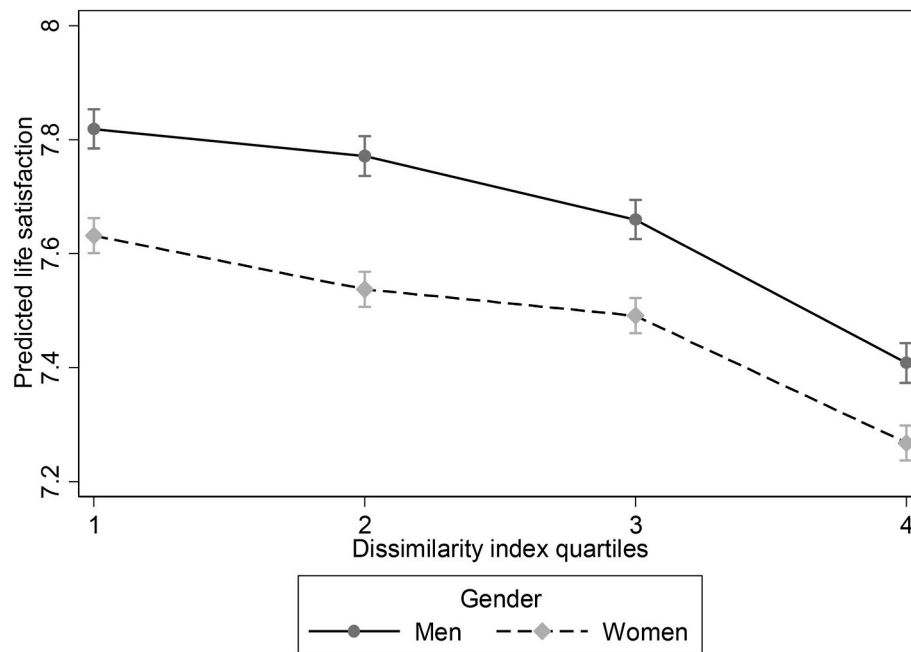
Fig. 2 confirms our expectation about a stronger negative association between non-standardness of family histories and life satisfaction for lower educated individuals. More specifically, the drop in life satisfaction for individuals in the fourth quartiles of the dissimilarity index is highest for the lowest educated group. Coherently, the interactions between the fourth quartile and both the medium and highest levels of education are positive and statistically significant (Table S7 of the SM). However, for all educational groups the gap in life satisfaction between the fourth and first quartile is statistically and substantively significant, although it is the highest for individuals with low education (0.41 points vs 0.30 points for individuals in the highest educational group).

Moving to the interactions between the dissimilarity index quartiles with country groups (Fig. 3), we observe that in all cases predicted life satisfaction is significantly lower for the fourth quartile compared to the first one. This negative effect is strongest in Southern Europe, as also confirmed by the statistically significantly interaction between this country group and the fourth quartile, amounting to 0.16 additional points of drop in life satisfaction compared to the effect in the other country groups (Table S8 of the SM). Instead, we do not find significant differences among the other groups of countries.
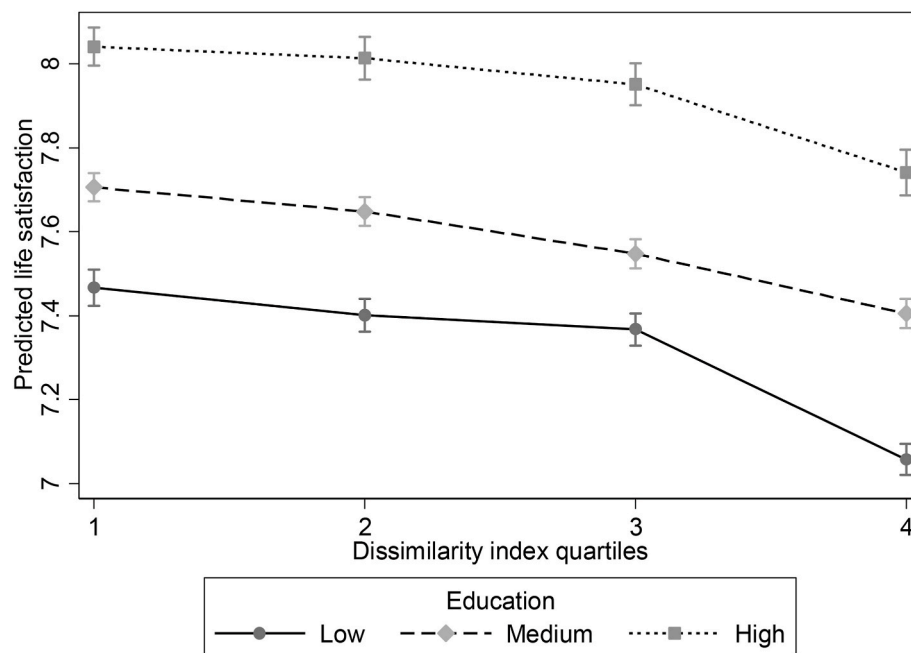
4.3. Additional analyses

To gain further insights on the role played by the heterogeneous experiences that are included in the fourth quartile of the dissimilarity index, which displays the strongest negative effect, we zoomed into this group of individuals and implemented a cluster analysis limited to their family histories only. Differently from the series of univariate descriptive statistics in Table 1, the goal was to capture the different types of family *sequences* that fall into the fourth quartile, and to assess whether some of them drive its strong effect on life satisfaction. We applied hierarchical Cluster Analysis, using Ward's minimum variance. The average silhouette width (Kaufman and Rousseeuw, 2005) and the dendogram suggested a 6-cluster solution. The first part of Table 3 summarizes key family characteristics of these clusters. This analysis confirms that different types of family histories end up in the most non-standard quartile for different reasons. For example, both cluster 3 and 6 are almost entirely composed of childless individuals, but only in cluster 6 we observe a high percentage of individuals who never lived with a partner. In cluster 1 all individuals had at least one child outside of marriage, and almost 50% experienced union dissolution. As a final step, we re-estimated the baseline model by splitting the fourth quartile into the six clusters. Results show that life satisfaction of individuals in each cluster belonging to the fourth quartile is significantly lower compared to individuals in the first quartile (second-to-last row of Table 3). This demonstrates that the non-standardness of family histories is penalizing in terms of life satisfaction independently of the specific events or conditions experienced. However, some deviations from normative behaviors are penalized more than others: those of individuals who had children outside of marriage (clusters 1 and 5) and those who never had a partner nor a child (cluster 6).

Other additional analyses (Table S9 of the SM) show that even including as controls several variables measuring specific family

Fig. 1. Predicted life satisfaction by the dissimilarity index quartiles and gender.
Note: Predicted life satisfaction from a model that includes interactions with gender and where all control variables are included (estimated coefficients are reported in Table S6 of the SM). Confidence intervals are constructed to allow for 5%-level tests of differences between predictions (see MacGregor-Fors and Payton, 2013).

Fig. 2. Predicted life satisfaction by the dissimilarity index quartiles and education.
Note: Predicted life satisfaction from a model that includes interactions with education and where all control variables are included (estimated coefficients are reported in Table S7 of the SM). Confidence intervals are constructed to allow for 5%-level tests of differences between predictions.

behaviors/events (both their occurrence and timing) does not eliminate the effect of the quartiles of the dissimilarity index based on the whole family trajectories. This shows that the effect of our dissimilarity index is not driven by specific family events and that our holistic approach goes beyond what could be captured by including several specific variables.

4.4. Robustness checks

We implemented a number of analyses to assess the robustness of the

findings with respect to several choices, such as the use of a linear model, the categorization of the dissimilarity index, the inclusion of additional controls, the use of alternative dimensions to define the reference group, the use of weights to adjust for attrition. We also addressed possible reverse causality using an heteroscedasticity-based instrumental variable approach and a sensitivity analysis.

Results from all robustness checks (see Section F of the SM) confirmed the findings reported above for the main analyses with one exception: in the case of the instrumental variable regression, although
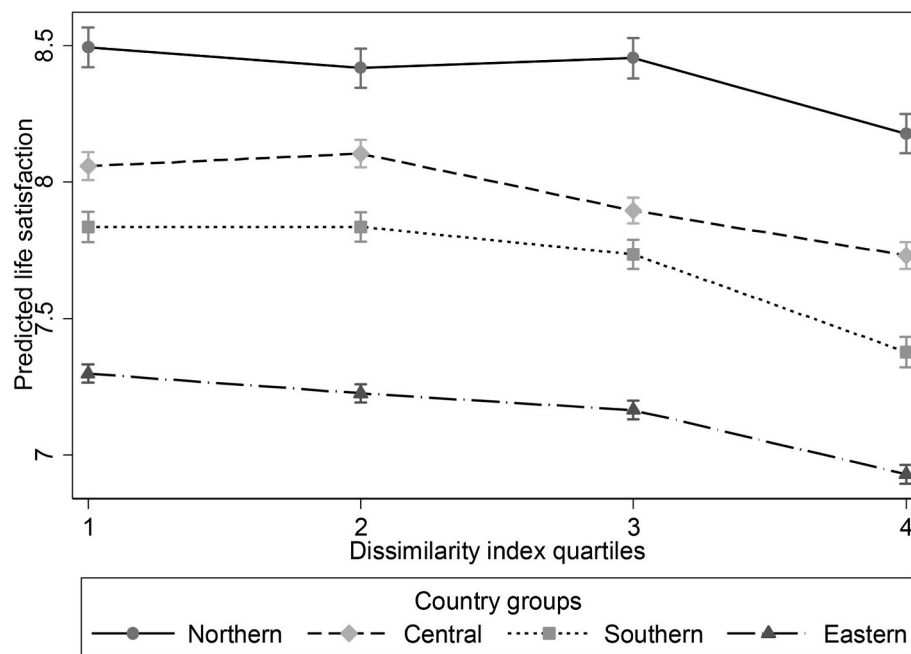
Fig. 3. Predicted life satisfaction by the dissimilarity index quartiles and country groups.
Note: Predicted life satisfaction from a model that includes interactions with country group and where all control variables are included (estimated coefficients are reported in Table S8 of the SM). Confidence intervals are constructed to allow for 5%-level tests of differences between predictions.

Table 3
Family characteristics of six clusters of family histories identified within the fourth quartile of the dissimilarity index and clusters' effects on life satisfaction.

Variables	Clusters					
	C1	C2	C3	C4	C5	C6
Descriptive statistics						
1st time living with partner						
Median age	21	21	24	20	23	40
Never (%)	39	0	0	0	16	63
Experienced a union dissolution (%)	**49**	28	18	16	**48**	19
Experienced a cohabitation (%)	15	8	6	3	**63**	15
Experienced re-partnering (%)	24	18	14	14	24	7
1st child (Median age)	23	23	45	20	25	44
Number of children (at age 49) (%)						
0	0	0	99	0	12	97
1	0	99	1	0	53	3
2	55	1	0	0	23	0
3 or +	**45**	0	0	**100**	12	0
Had children outside of marriage (%)	**100**	32	0	29	**84**	1
Regression coefficients						
Clusters' coefficients (Ref.: Quartile 1)[a]	−0.50	−0.21	−0.24	−0.35	−0.48	−0.52
N	1,289	2,267	2,133	1,822	1,799	2,227

Notes: In bold we highlight the most characterizing aspects of each cluster. [a] All coefficients are statistically significant at the 1% level.

all three upper quartiles of the dissimilarity index maintain a negative coefficient, we find a statistically significant effect only for the fourth quartile.

5. Discussion

This study examined the association between the degree of non-standardness of family histories and life satisfaction of older people based on retrospective data from the seventh wave of the Survey of Health Ageing and Retirement (SHARE) in Europe. We also assessed the heterogeneity in this relationship by gender, education and country groups.

Our theoretical background was based on the life course perspective and the integration of different conceptual models and literatures. Our methodological approach is an original application of SA and OM. Several studies have adopted these methods combined with cluster analysis to identify typologies of family trajectories (e.g., Comolli et al., 2021). Instead, we demonstrate that the distances originated by SA and OM are interesting *per se* and can be used to derive measures of non-standardness of family histories. Specifically, we calculated distances between the family trajectory of an individual and those of all the others within the same reference group defined by gender, birth cohort and country. This dissimilarity index was categorized in quartiles and constituted our explanatory variable.

Our expectation of a negative effect of non-standardness of family histories on life satisfaction at older ages was confirmed by the multi-variable analyses. The "disadvantage" in terms of life satisfaction was particularly significant from a substantive point of view when comparing individuals in the fourth versus those in the first quartile of the dissimilarity index. The adjusted gap in life satisfaction between individuals in these two extreme groups in terms of standardness of family histories was 0.38 points, which is sizeable and similar to the effect of other relevant known predictors of life satisfaction, such as education. The negative effect of the non-standardness of family histories on wellbeing was robust to a series of checks related, for example, to the use of different measures of wellbeing (quality of life and depressive symptoms) and to adjustments for selective attrition.

The current study adds to the growing body of research on the long-term consequences of demographic behaviors at older ages (Arpino et al., 2018b; Barclay et al., 2016; Grundy and Tomassini, 2005; Quashie et al., 2021; Sabbath et al., 2015). This strand of the literature has often used holistic approaches to summarize family histories, as we did, but mostly focusing on health outcomes. Instead, another strand of the literature has focused on the short-term consequences of non-standard demographic behaviors on wellbeing mostly analyzing middle-age

individuals and specific behaviors, such as cohabitation (e.g., Soons and Kalmijn, 2009). We bring together these strands of the literature arguing and showing that the negative consequences on wellbeing of non-standard family behaviors during young and middle adulthood are not restricted to the short-term but can have enduring implications for wellbeing at older ages. Also, we demonstrate that when analyzing the degree of non-standardness of family behaviors is possible and useful to adopt a holistic approach, not limited to a specific dimension of the family life course. This helps recognizing the complex nature of family histories and allows measuring the degree of non-standardness of the whole sequence of family events, rather than of specific ones, within meaningful reference groups that are likely to be subject to similar norms. We identified, in particular, a group of individuals (the fourth quartile of the dissimilarity index) that for different reasons (i.e., different types of family histories) show the highest degree of non-standardness related to their family histories. In additional analyses, we identified, in fact, six different typologies of family histories within this group of individuals, which have all been found to be penalized in terms of life satisfaction compared to the most standard group. This suggests that more than the specific events and experiences each individual had during young and middle adulthood, what matters is whether they conform or not to the reference group's standards and norms.

Heterogeneity analyses pointed to a stronger negative association between non-standardness of family histories and life satisfaction for lower educated individuals. Individuals with higher education have more economic and cultural resources that may buffer the negative consequences of stress induced by violation of social norms (Thoits, 1995). Also, it is more likely that violation of norms within higher educated groups is voluntary as they are more able to act according to their expectations and intentions. This is in line with the SDT literature suggesting that the early adoption of non-standard demographic behaviors among highly educated individuals was driven by the diffusion of new values and preferences, while non-standard behaviors among lower educated groups was related to socio-economic disadvantage (Lesthaeghe, 2020).

Consistently with the idea that the sanctions connected to non-standard demographic behaviors have implications that may be different according to the normative and institutional context (Liefbroer and Billari, 2010; Thoits, 1995; Zoutewelle-Terovan and Liefbroer, 2018), we find the negative effect of deviating from standard family trajectories on wellbeing to be the strongest in Southern Europe. This is in line with the later and slower diffusion of the SDT in Southern Europe (Lesthaeghe, 2010) and with studies reporting a lower acceptance of "alternative" family behaviors in this region as compared to other European regions (Liefbroer and Merz, 2009). In the more traditionalist contexts of Southern Europe, the social penalties attached to violations of social norms governing family behaviors may be harsher, as also found by Zoutewelle-Terovan and Liefbroer (2018) for specific behaviors on loneliness. Social norms and legislation influence each other (Posner, 1997); thus, it is not surprising that in Southern European countries the legislation has been usually more restrictive than in other regions against non-standard family situations, including, for example, later adoption of (more restrictive) divorce laws (González and Viitanen, 2009), which reinforce social stigma and sanctions for the deviant behaviors.

Similar to previous research (e.g., Arpino et al., 2018a), women showed lower life satisfaction compared to men within all four quartiles of the dissimilarity index; however, for both women and men life satisfaction was lower for individuals in the fourth as compared to those in the first quartile, with similar within-gender gaps. This insignificant moderator role of gender is consistent with studies reporting similar perceived consequences of violations of norms for men and women (Settersten and Hagestad, 1996) and with research showing similar associations by gender between specific non-standard demographic behaviors and wellbeing (Kalmijn, 2010; Koropeckyj-Cox et al., 2007;

Soons et al., 2009; Zoutewelle-Terovan and Liefbroer, 2018).

This research is not without limitations. As all analyses relying on SHARE and similar data, our sample is selected because we can only observe individuals who survived till age 55 and more. Our analyses excluded migrants and the data did not allow to separately analyse sexual minorities. As in all analyses that group individuals into clusters, heterogeneity remains within them. Finally, we cannot rule out the omission of unobserved confounders and reverse causality issues. Differently from studies on a specific aspect of family histories (e.g., van den Broek and Tosi, 2020 on number of children) adopting an Instrumental Variable approach in our case is not feasible. However, we tried to deal with potential endogeneity in three ways. First, as other studies on life course histories and health/wellbeing (Comolli et al., 2021; O'Flaherty et al., 2016), in order to rule-out, as much as possible, the possibility that selection factors are the main drivers behind the association under study, our analyses account for several early-life conditions measured retrospectively, including information on childhood health and socio-economic status. Future studies on a single or few countries could use prospective data to avoid recall bias and also to better control for selection. Second, our results, in particular for the fourth quartile, were confirmed by the Instrumental Variable approach proposed by Lewbel (2012), based on "internally" generated instruments. Third, we implemented a formal sensitivity analysis (Cinelli and Hazlett, 2020) showing that our estimates are not sensitive to the presence of unobserved confounders.

Despite these limitations, our study not only informs research on the link between family behaviors and wellbeing, but it also has implications for practitioners and policymakers (see Cook et al. (2014) for a related discussion on interventions against stigma). Policy interventions may mitigate the consequences of non-standard demographic behaviors. These include, for example, laws granting similar rights (e.g., tax benefits) to married and cohabiting couples or to children irrespectively of the marital status of their parents. Also, educational interventions (e.g., in schools or through media campaigns) to spread values of tolerance towards behaviors that differ from "traditional" or common ones may help in lowering the social sanctions attached to non-standard behaviors.

Ultimately, our results bring new evidence on the effects of family behaviors on wellbeing and, in particular, they suggest that the degree of non-standardness of family histories has negative consequences on wellbeing that are not limited to the years surroundings the experienced events. Rather, they have long lasting effects in later life, especially for lower educated individuals and those in more traditionalist contexts.

Data availability

The authors do not have permission to share data.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.socscimed.2023.116350.

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