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Ambivalence and transnational intergenerational solidarity: the perspective of highly educated Portuguese women emigrant daughters

Existing literature has highlighted solidarity across generations as a crucial mechanism for transfers and maintaining cohesion within families. However, researching solidarity across generations among transnational families is still an underexplored area, especially from the viewpoint of highly skilled female migrants. This study explored the way highly educated Portuguese adult daughters, living transnationally, perceive the existing solidarity ties with their parents, in times of transition, such as during the process of migration. By using a cluster analysis approach to explore the statistical associations between ambivalence and intergenerational solidarity dimensions, this study provides insight into the migrant solidarity types incorporating the role of ambivalence in forging a typology of transnational intergenerational relationships. The sample comprised 248 daughters who volunteered to provide information in an online survey. Participants gave their full consent to partake in this study, and this study was approved by the ethical committee of the authors' institution. Measures of intergenerational solidarity dimensions, perceived ambivalence, sociocultural adaptation, acculturation, and social well-being in the destination country were included in the survey. Model-based cluster analysis resulted in three clusters: low ambivalence with strong cohesion, autonomous with affection and low ambivalence, and ambivalent functional ties with low affection. These clusters differed significantly in terms of intergenerational solidarity dimensions, perceived ambivalence, and in several other measures addressed. Perceived high parent-daughter ambivalent ties were associated with high levels of functional contacts and financial exchange. That pattern was also associated with lower levels of affection and consensus, being most frequently found in older daughters, mostly when single, economically inactive, or unemployed. Low perceived ambivalent parent-daughter ties were the most frequently found (around 80%), with two different types of intergenerational relationships being revealed, namely the low ambivalence with strong cohesion type and the autonomous with affection and low ambivalence type. Half (50%) of the daughters that perceived low parent-daughter ambivalent ties have associated the highest intergenerational solidarity, being, in general, better adapted to the migration context and slightly younger on average. The other half, less well acculturated, living abroad for longer, in countries with stronger welfare state systems and less reliance on families as providers of care, are more associated with an autonomous relationship type with low solidarity, but high affection. These results suggest that there might be a spillover effect: those who fare well in the country of migration, have better relations with their families at home—either being very interdependent or very independent, but always with good affective quality and low ambivalence.

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Introduction

A substantial number of studies have focused increasing attention on intergenerational solidarity within families as a mechanism for transfers and maintaining cohesion (Bengtson et al., 2000; Bengtson et al., 2003; Bengtson and Oyama, 2007; Fingerman et al., 2013). Several studies have stressed the intersectional nature of solidarity dimensions and the multifacetedness of parent-adult-child-relations through developing typologies (Attias-Donfut and Wolff, 2008; Dykstra and Fokkema, 2011; Silverstein and Bengtson, 1997), either considering all or a selection of the dimensions from Bengtson's original intergenerational solidarity model (Roberts et al., 1991; Fokkema et al., 2008; Senyürd and Detzner, 2008). Consequently, migrant solidarity types have also been explored among migrant communities in Europe (Bordone and de Valk, 2016; Rooyackers et al., 2016). Although this literature sheds light on how migration influences the ties between migrants and their parents (Karpinska and Dykstra, 2018), it has not yet incorporated the conceptual advances the intergenerational solidarity model has undergone over time with the integration of conflict and ambivalence to form an extended solidarity–conflict model (Bengtson et al., 2003; Bengtson and Oyama, 2007; Fingerman et al., 2013). This paper gives due attention to these developments and advances the literature on ambivalence and solidarity through two lesser-studied empirical extensions, namely in transnational families (Baykara-Krumme and Fokkema, 2019; Karpinska and Dykstra, 2018; König et al., 2018; Senyürd and Detzner, 2008) and among highly skilled female emigrants.

In the current paper, we characterize parent-daughter solidarity ties contending that ambivalence operates as a transversal dynamic that interferes with and qualifies each solidarity dimension differently, thus moderating the relationships between the different dimensions. Conceiving ambivalence as an inherent part of intergenerational relations, we also incorporate the fact that it might be particularly relevant for characterizing family relationships in times of transition, such as during the process of migration and adjustment to new societal contexts. Indeed, the consideration of transnational families is particularly pertinent, as Portugal remains the European member state with the highest proportion of emigrants, approximately 20% (Pires et al., 2020). Emigration from Portugal has become more qualified over time, due mainly to higher-skilled younger migrants who left in search of economic opportunities after the economic crisis in 2008. According to OECD data, the percentage of highly skilled migrants—the main group in our sample—increases, the more recent the migration occurs. Highly skilled migrants represented less than 8.9% of those who migrated 20 years ago, compared with the 33%, of those who migrated in the past year (Observatório da Emigração, 2015). The percentage of women in Portuguese emigration flows represents almost 40% of permanent emigration and rises to 47% of temporary emigration (Pordata, 2022). This, combined with the Portuguese familialist welfare state regime and the prevalence of traditional gender values determining the organization of care, raises an optimal research context to explore women and intergenerational solidarity in a transnational Portuguese context (Tavora, 2012). To accomplish this, we draw on an online survey of Portuguese adult daughters living abroad with parents still in Portugal to develop an ambivalence-informed typology of transnational intergenerational solidarity relations.

Theoretical framework

In the following paragraphs, we draw on the literature on intergenerational solidarity, ambivalence, and transnational families to construct our theoretical framework. Previous work on parent-

adult child intergenerational solidarity by Bengtson and colleagues (e.g., Bengtson and Oyama, 2007) systematically differentiated between six dimensions of solidarity: effectual (emotional ties); consensual (agreement on values and attitudes); functional (patterns of resource sharing and exchanges); associational (frequency of contact between parent and child); structural (opportunities for exchanges and—related—geographic proximity of family members); and normative (strength of commitment to familial roles and feelings of obligation). More recently, Cavallotti and colleagues (2017) included systematic solidarity as a new dimension, with reference to the system of relationships that make up the family and also to the attitude of the members in contributing to its internal cohesion. According to the authors, a family develops fully when its members exert themselves to maintain, build, treat, and restore harmony and communion (Cavallotti et al., 2017)¹.

The evidence for substantial intergenerational solidarity in modern societies comes from studies that either consider all or a selection of these dimensions (Fokkema et al., 2008; Nauck et al., 2009). Nonetheless, beyond the studies that approached dimensions of support separately, one of the innovations of Bengtson et al.'s theoretical approach was the introduction of the inter-relatedness of constructs of solidarity (Roberts et al., 1991). Inspired by this advance, several other studies have developed typologies of parent-child relationships based on the identification of different combinations of solidarity dimensions (Dykstra and Fokkema, 2011; Ferring et al., 2009; Silverstein and Bengtson, 1997). Migrant families have also been the focus of some of these studies (Albertini et al., 2019; Bordone and de Valk, 2016; Rooyackers et al., 2014). However, transnational families with parents in the home country are a specific case and cross-border ties are still understudied in research on intergenerational relationships (Baykara-Krumme and Fokkema, 2019; Karpinska and Dykstra, 2018).

Forms of intergenerational solidarity in transnational families are necessarily shaped by the existence of geographical distance. In fact, previous work suggests that this distinctive feature might result in potential care gaps depending on the presence of other siblings, or increased support through the sending of remittances (Bordone and de Valk, 2016; King and Vullnetari, 2012). This is especially disruptive in societies where families play an indispensable role in care and welfare provisions (Baldassar, 2007; Baldassar and Merla, 2014; Kilkey and Merla, 2014), as is the case in Portuguese society. At least a few studies have recently explicitly explored solidarity types among transnational families. Rooyackers et al. (2016) distinguish five types of transnational child–mother relationships of Turkish, Moroccan, Antillean, and Surinamese migrants in the Netherlands. They range from full-interdependent to independent with three intermediate types, reflecting different kinds and directions of support (upward-interdependence, downward-interdependence, and emotional-interdependence). In a similar vein, Baykara-Krumme and Fokkema (2019) identified 4 intergenerational solidarity types among Turkish stayer, migrant, and transnational families, from the perspective of the adult child, were: full solidarity; advice-oriented; material-oriented, and autonomous. Furthermore, Karpinska and Dykstra (2018) focused on “new” intra-EU migrants from Central and Eastern Europe, and explored the transnational ties between Polish migrants in the Netherlands and their parents in Poland. Three types of transnational child–parent relationships were distinguished: harmonious, detached, and obligatory. Background characteristics of the adult children and their parents accounted for variability in relationship types. In the present study, we followed this recent trend and adopted an inter-relatedness perspective of solidarity dimensions (Roberts et al., 1991),

to explore and develop an understanding of how intergenerational solidarity dimensions re-arrange to form a typology, in the particular case of transnational Portuguese families.

Although previous studies have moved beyond single dimensions of solidarity in recognition of the interlinked patterns that exist between them, through which several predictors of solidarity types were identified², none have incorporated ambivalence as a “sensitizing construct” (Lüscher, 2011). This gap in the intergenerational solidarity typologies literature contrasted with empirical studies on family relations in later life that have long demonstrated the prevalence of conflict behavior—varying from destructive to constructive (Clarke et al., 1999; Barthassat, 2014; Goeke-Morey et al., 2007), and, with that, substantially contributed to expanding previous work on solidarity. Indeed, while the term *solidarity* is linked to the positive aspects of ties, it became crucial to attend to negative aspects, also. Accordingly, the family solidarity paradigm was modified to the family solidarity–conflict model, which incorporated conflict and considered the possible negative effects of too much solidarity (Silverstein et al., 1996). By allowing for the occurrence of positive and negative aspects of relationships at the same time, this proposal served to theoretically frame the concept of intergenerational ambivalence. Ensuing literature suggests that cohesion and conflict are both predictors of relationship quality (Xu et al., 2017). Moreover, solidarity and conflict do not represent a single continuum, from high solidarity to high conflict. Rather, intergenerational solidarity can exhibit both high solidarity and high conflict—with ambivalence as the construct that permits the fluidity between these apparently contradictory emotions—or low solidarity and low conflict, depending on family dynamics and circumstances (Bengtson et al., 2000).

In this context, some authors (Connidis and McMullin, 2002; Lüscher and Pillemer, 1998; Lüscher and Hoff, 2013) contend that concepts such as ambivalence are better for addressing the natural fluidity, emergent properties, and oscillations in family relations. In a similar vein, Hogerbrugge and Komter (2012) suppose that ambivalence acts as a catalyst and thus serves as an explanation for changes in family relations. Thus, the model was extended further to include ambivalence in acknowledgment of the fact that intergenerational relationships due to competing needs for independence and connection can be simultaneously close and conflicting (Lüscher and Pillemer, 1998; Lüscher and Hoff, 2013; Fingerma et al., 2013). The term ambivalence has been, then, defined as, “when polarized simultaneous emotions, thoughts, social relations, and structures that are considered relevant for the constitution of individual or collective identities are (or can be) interpreted as temporarily or even permanently irreconcilable” (Lüscher, 2002, p. 587).

Detecting ambivalence within this more general solidarity framework extended an empirical approach to the study of families that classified relationships into meaningful categories that may incorporate inconsistent elements (van Gaalen and Dykstra, 2006). One such example is the fourfold model of ambivalences in family relations that Lüscher and Hoff (2013) developed including: 1. “solidarity”, which relates to giving a central place to commonalities in the relation and intergenerational support to promote cohesion; frequently concealing ambivalence, that has not disappeared, but here becomes latent; 2. “emancipation”, whereby ambivalences are acknowledged openly and negotiated to safeguard relatedness; 3. “captivation”, which literally refers to being captured in ambivalent relations without resolution, in a continuous struggle over ambivalences which often cannot be expressed adequately in words; and 4. “atomization”, when ambivalence evolves into tensions, conflict, and even breakdown, although those who pursue these pathways more generally deny the existence of ambivalences. In the present

study, we clearly endorsed the core of the model by Lüscher and Hoff (2013), in that we assumed his conceptualization of ambivalence as an instrument that triggers dynamics in the family, and that, this affects how other elements, including solidarities and conflict, interact and express one another. In this sense, our perspective is less about the mere existence or absence of ambivalence in the relationships. Alternatively, we assume the experience of ambivalence, by itself, can be conceptualized as a fruitful ground from which new meanings emerge as the person attempts to overcome ambivalence, triggering a process of meaning-making (Abbey and Valsiner, 2005; Abbey, 2012). As an emotional regulator (Abbey, 2012; Albert et al., 2018), ambivalence is meant to occur as a regulator/catalyzer when there are incompatible feelings or cognitions with regard to perceived parent-child relationship quality. So, as soon as there is an imbalance in the relationship, ambivalence might occur to promote change (Albert et al., 2018). Addressing the role of ambivalence in how it associates with the multiple solidarity dimensions, shaping and qualifying their inter-relationships, is closely aligned with this conceptualization of ambivalence. Moreover, the inclusion of ambivalence is far more important if we consider the targeted sample, women, and the normative obligations they assume in Western cultures.

Indeed, previous work suggests the experience of ambivalence can be particularly preponderant in mature parent-child relations, as ambivalence can be elevated when parental health is poor (Wilson et al., 2003) and reliance on adult children increases.

Literature review

Given the crucial role that daughters play in matrilineal Western cultures (Fingerma et al., 2020a; Suitor and Pillemer, 2006; Suitor et al., 2006), being a woman might be particularly relevant in what concerns experienced ambivalence. In fact, previous studies found that, in Western societies, daughters experience more ambivalence than sons (Fingerma, 2004; Wilson et al., 2003). Indeed, compared to men, women have fewer options not to act in accordance with normative obligations to care for family members (Connidis and McMullin, 2002). Additional empirical research in this domain has shown that daughters, in particular, experience stress at times when they offer high levels of support (Bangerter et al., 2018). Older parents might be caught between the wish to be autonomous, and the reality of being dependent on children (Spitze and Gallant, 2004). Other studies, in particular van Gaalen and colleagues (2010), have found that the likelihood of negative rather than positive balanced ambivalent ties, increases among daughters who assume a caring role in the relationship. Moreover, when compared to sons, negative ambivalence increased with age among daughters precisely due to parental aging and the associated increase in the burden of care. The probability of negative ambivalence also depends on the availability of exits; daughters who are socially isolated or less able to rely on siblings are more likely to have negative ambivalent relations (van Gaalen et al., 2010). However, this might be further differentiated by the macro context. Indeed, Connidis and McMullin (2002) contend that ambivalence can be viewed as a brokering concept between the solidarity model and the problematization of family relations embedded within social structures. One of their central tenets is that individuals experience ambivalence when social structural arrangements constrain their attempts to negotiate within relationships. For example, women have societal pressures to care and less opportunity to resist, despite their entry into the labor force. Hence, they are more likely than men to experience ambivalence. This multilevel psychosociological approach to ambivalence is based on the connection between individual experiences, social relationships,

social institutions, and societal change (Connidis and McMullin, 2002; Kasearu et al., 2018), and is especially relevant in the present study as the targeted sample are Western Portuguese women, living transnationally, and, consequently, having to adjust to new societal contexts.

Indeed, the emphasis on the social contexts within which individuals are embedded is particularly important in specific life stages or in the context of migration, and subsequent processes of integration and acculturation, as ambivalence may also become salient (Berry, 1997; Durgel et al., 2009; Lewis, 2008). Previous studies found that those with a lower level of acculturation and more difficulties in the host country (Berry, 1997; Durgel et al., 2009; Lewis, 2008; Yagmurlu and Sanson, 2009), experience higher perceived ambivalence with poor solidarity relations. Further, Grzywacz and collaborators (2006) suggest that these transition stages, while adjusting to a new reality, might potentiate ambivalence. However, results are not always consistent, as social adjustment to the cultural context can occur in a positive and sustained way, with families managing and emotionally regulating these challenges and oscillations, resulting in a lower perceived ambivalence (Fingerman et al., 2008). And even intense acculturation and situational adaptation do not automatically have to disrupt solidarity ties, and can even increase family cohesion (de Haas, 2010). Overall, such results highlight the importance of considering ambivalence as an outcome, too, of the adaptation and adjustment to structural and contextual factors, beyond the family context (Connidis and McMullin, 2002; Fingerman et al., 2020b). This rationale emphasizes the structural embeddedness of ambivalence; the idea of ambivalence as a bridging concept between the micro and the macrosocial spheres (Connidis and McMullin, 2002; Fingerman et al., 2020b). In this regard, in the present study, we endorsed the perspective of expanding the study on ambivalence to encompass parameters related to acculturation, sociocultural adaptation, also, social well-being from the individual's subjective viewpoint, as potentially useful to enlighten how these aspects might be related and interact with different ambivalence-intergenerational solidarity patterns. Consequently, in the present study, we incorporated those parameters. To address social well-being, previous literature suggests that the most robust indicator of subjective well-being is the perception of confidence and reciprocity from social connections (Boreham et al., 2013). Indeed, apart from friends and family some of the most important domains of social connections include engagement with workmates either inside or outside the workplace (Helliwell and Huang, 2010), engagement with people at places of worship (Lim and Putnam, 2010), and connections with people in clubs and social organizations (Ziersch and Baum, 2004). Finally, of the various facets of social participation, building and maintaining strong networks of social support has been identified as having the strongest impact on social well-being (Helliwell and Putnam, 2005). In this regard, social cohesion has been reported to have strong associations with social well-being for those who are integrated into community networks, as physical proximity matters and neighborhood social cohesion provides a second, important measure of social networks.

Research questions

From a purely quantitative approach, the current study had 3 main objectives. The first objective was to characterize the associations between ambivalence and intergenerational solidarity dimensions using a cluster analysis approach and to explore whether these patterns are characterized by consistent responses. We aimed to identify how perceived ambivalence in parent-daughter ties combines with intergenerational solidarity

dimensions to form different intergenerational solidarity types, and by doing so we incorporated the role of ambivalence in forging a typology of transnational intergenerational relationships between parent-daughters, from the viewpoint of highly educated Portuguese adult daughters. Given the absence of previous empirical research addressing the role of ambivalence in shaping and qualifying a typology of intergenerational solidarity dimensions, also in transnational families, this remained an exploratory objective attended to by quantitative methods. Nonetheless, we might derive theoretical expectancies and draw on indirect empirical studies to acknowledge that the presence of ambivalence is not always associated with problems and poor relationship quality, but some ambivalent ties can be associated with high and others with poor relationship quality (van Gaalen et al., 2010). According to Lüscher and Hoff's (2013) proposal, openly acknowledging and negotiating ambivalences can even be essential to safeguard relatedness, as ambivalence is endorsed as an emotional regulator (Abbey, 2012; Albert et al., 2018). Secondly, we aimed to examine the relationship between the different types of intergenerational solidarity identified and the acculturation levels of the host country. Previous empirical work indicated a higher perceived ambivalence cooccurring with poor solidarity relations to coincide in individuals who demonstrate poor acculturation and more difficulties in adjusting to the host country (Berry, 1997; Lewis, 2008; Durgel et al., 2009). However, social adjustment to the cultural context can also occur in a positive and sustained way, with families managing and emotionally regulating these challenges and oscillations, resulting in a lower perceived ambivalence (Fingerman et al., 2008). And even intense acculturation and situational adaptation do not automatically have to disrupt solidarity ties, and can even increase family cohesion (de Haas, 2010). Based on previous empirical work we expect the different types, captured by the typological approach, to be differentially associated with different levels of acculturation of adult daughters to the host country. However, to our knowledge, this is one of the first studies to adopt a typological approach to explore ambivalence-intergenerational solidarity patterns and to address how they relate to acculturation parameters. So, again, this remained an exploratory objective examined through the statistical analysis of the survey data. Thirdly, we aimed to analyze how different intergenerational solidarity patterns are associated with socio-demographic differentials, in variables such as age, current partner status, activity status, and length of residence abroad.

Methods

Sampling and study procedures. Grounded in a quantitative approach, we draw on survey data collected from a sample of Portuguese highly educated emigrant adult daughters living transnationally. The survey was administered online to two-hundred and forty-eight highly educated Portuguese female emigrants using non-probabilistic sampling. The study was publicized through several channels (social networks, social communication, institutional pages, and mailing lists of Portuguese Municipalities, Consulates, and Embassies). The inclusion criteria were being (a) an adult family member (older than 18 years old); (b) able to speak, read, and write in Portuguese; (c) having at least a bachelor's degree; and (d) living transnationally. Migrants who gave their informed consent completed the survey. Survey data, later subject to statistical analysis, was collected over four months in the spring of 2019 using Qualtrics (Provo, UT).

Measures. The survey included eight groups of questions to measure solidarity, gathered across five traditional dimensions of intergenerational solidarity—contact, emotional, consensual,

Table 1 Constructs measured, original instruments, adaptations, and answer scale.

Construct of measurement	Original instrument and adaptation	Question-wording examples	Answer scale and meaning
<i>Intergenerational solidarity dimensions:</i>	Multidimensional scale by Cavallotti, Grau-Grau, Marimon and Gas-Aixendri (2017)		5-point Likert scale (Higher levels of solidarity are expressed by higher index scores)
1. Normative	(11 items; $\alpha = 0.80$) ^a	(e.g., <i>Adult children should provide companionship or spend time with elderly parents who are in need</i>)	"totally unimportant" to "totally important"
2. Associational	(7 items; $\alpha = 0.88$) ^a	(e.g., <i>We often attend religious activities</i>)	"totally unimportant" to "totally important"
3. Affectual	(4 items; $\alpha = 0.72$) ^a	(e.g., <i>How much affection for your parents?</i>)	"very low" to "very high"
4. Consensual	(4 items; $\alpha = 0.68$) ^a	(e.g., <i>Do you identify yourself with the ethical principles that your parents have transmitted to you?</i>)	"very low" to "very high"
5. Functional	(2 items; $\alpha = 0.70$) ^a	(e.g., <i>Have you received more than 1.000 euros from your parents in the past 12 months?</i>)	"very low" to "very high"
6. Systematic	(5 items; $\alpha = 0.60$) ^a	(e.g., <i>When there are conflicts among family members, do you try to facilitate reconciliation?</i>)	"very low" to "very high"
<i>Psychological ambivalence</i>	A shortened version of an instrument comprising 9 items measuring conflicting emotions, motives, and behaviors (Michels et al., 2011) ($\alpha = 0.85$)	(e.g., <i>On the one hand I have the feeling that my mother/father is proud of me, but on the other hand she/he always wants to change me</i>)	7-point Likert scale, ranging from 1 "totally disagree" to 7 "totally agree" ^{b;c}
<i>Adaptation</i>	12 items adapted from the Brief Sociocultural Adaptation Scale (BSAS, Demes & Geeraert, 2014) ($\alpha = 0.80$)	(e.g., <i>I'm comfortable with the climate of my host country (temperature, rainfall, humidity)</i>)	7-point Likert scale, ranging from 1 "totally disagree" to 7 "totally agree" ^c
<i>Acculturation orientation</i>	6 items adapted from the Brief Acculturation Orientation Scale (BAOS, Demes & Geeraert, 2014) ($\alpha = 0.61$)	(e.g., <i>I have friends in my host country</i>)	7-point Likert scale, ranging from 1 "totally disagree" to 7 "totally agree" ^c
<i>Social cohesion</i>	5 items adapted from Boreham et al. (2013) ($\alpha = 0.79$)	(e.g., <i>People around here are willing to help their neighbors</i>)	7-point Likert scale, ranging from 1 "totally disagree" to 7 "totally agree" ^{c;d}
<i>Perceived satisfaction with social connections</i>	4 items adapted from the World Values Survey (Inglehart and Welzel, 2005) ($\alpha = 0.85$)	(e.g., <i>I spend time socially with work colleagues</i>)	7-point Likert scale, ranging from 1 "totally disagree" to 7 "totally agree" ^c
<i>Socio-demographic variables</i>	Age, gender, partner status (single, cohabiting, married, widowed, divorced), educational level (from primary education to higher education), activity status (student, employed, unemployed, inactive, retired), host country, length of residence, rural-suburban-urban context.		

^aCronbach alpha showed satisfactory to good internal consistency levels.

^bInstead of a 6-point Likert-type scale, an additional intermediate point was included to improve sensitivity of measurement and find finer gradations of judgment (Kite & Whitely, 2018).

^cHigher scores represent higher levels of the respective construct.

^dOne item was reverse-coded (*people in this neighborhood generally do not get along*).

financial support and commitment to norms of filial obligation³—along with the aforementioned dimension of systematic solidarity (Cavallotti et al., 2017), ambivalence, sociocultural adaptation, and social well-being in the destination country. Accordingly, we used a standardized measure of experienced ambivalence, as well as also variables that represent the new structural and contextual elements participants are facing. Table 1 presents the constructs measured, original instruments, and respective adaptations made, along with the answer scale.

Data analysis procedures. Before conducting the main statistical analysis, preliminary analyses were performed to calculate the descriptive statistics of the main study variables. Next, exploratory data analysis, namely, statistical methods combining dimension reduction and cluster analysis through principal component analysis (PCA) and *k*-means clustering, was performed to uncover the underlying structure of the variables included. The analyses comprising dimension reduction and clustering were performed sequentially (tandem approach). We

first checked the main assumptions of exploratory factor analysis, with data being screened for missing values, outliers, and normal distribution. Considering factor extraction, we used the Kaiser criterion suggesting factors with eigenvalues above 1 should be retained, and the visual scree plot with factors being retained before the "elbow". We then performed the principal components analysis of the total items from the aforementioned six dimensions of intergenerational solidarity dimensions together with the items evaluating the ambivalence measure (all items were *z*-standardized). Afterward, assuming factors multidimensionality, factors were rotated using the promax method to relax orthogonality constraints due to variable correlations. Finally, domain factor representativeness was evaluated through factor loadings on communalities. In the next step, we clustered and analyzed the data (*k*-means clustering). Cluster analysis is a statistical explorative analysis that identifies homogeneous groups of cases based on the distribution of intergenerational solidarity dimensions' scores and levels of ambivalence linked to them. Cluster sizes, variable loadings, and centroids were analyzed, and

Table 2 Sample's socio-demographic variables: descriptive statistics (frequency, percentages, means, and standard deviation) (N = 248).

	f (%)
Partner status	
Single	74 (29.8)
Divorced	10 (4.0)
Common-law relationship	39 (15.7)
Married	125 (50.4)
Widowed	0 (0.0)
Activity status	
Employed	212 (85.5)
Student	9 (3.6)
Unemployed (looking for)	13 (5.2)
Inactive	14 (5.6)
Retired	0 (0.0)
Residence context	
Rural	11 (4.4)
Suburban	48 (19.4)
Urban	189 (76.2)
Host country continent	
Europe	184 (74.2)
Oceania	4 (1.6)
Sud America	7 (2.8)
North America	20 (8.1)
Asia	19 (7.7)
Africa	14 (5.6)
Level of education	
Bachelor	106 (42.7)
Master	103 (41.5)
PhD	39 (15.7)
	M (SD)
Age	36.16 (7.06)
Length of residence	7.82 (5.99)

Table 3 Solidarity dimensions, ambivalence, and structural and contextual elements: descriptive statistics (means and standard deviations, minimum and maximum) (N = 248).

	M	SD	Range
Solidarity dimensions			
Normative	4.19	0.42	2.82-5.00
Associational	3.95	0.52	2.14-5.00
Consensual	3.15	0.64	1.50-5.00
Functional	4.02	1.27	1.00-5.00
Affectual	3.60	0.60	1.00-4.00
Systematic	2.99	0.66	1.20-4.00
Psychological ambivalence	3.20	1.29	1.00-7.00
Social well-being			
Social connections	4.53	1.31	1.00-7.00
Social cohesion	5.03	0.66	2.20-7.00
Acculturation parameters			
Acculturation orientation	5.27	0.81	2.00-7.00
Sociocultural adaptation	5.21	0.88	1.83-7.00
Age	36.16	7.06	22.00-64.00
Length of residence	7.82	5.99	0.00-34.00

visualized with the low-dimensional factorial map, simultaneously projecting objects, variables, and clusters. A parallel coordinate plot with centered and standardized scores was used to illustrate cluster means for each variable, providing insight regarding cluster patterns. To further explore clustering characteristics, mean differences were analyzed regarding the study variables using multivariate analysis of variance (MANOVA), including estimating differences in demographics, sociocultural adaptation, and acculturation parameters. This analysis helped us to investigate the conditions more closely associated to one cluster over the other, that increase the likelihood of pertaining to one cluster. Data analyses were performed using the JASP (version 0.16.2) statistical package (2022), and the JAMOVI (version 2.3.3.0) statistical package (2022).

Ethical considerations. The research from which this data was extracted was approved by the Ethics Committee of the Faculty of Psychology of the University of Lisbon, in compliance with the code of the American Psychological Association (2012, 2018). Before collecting the data, the study was submitted to the ethics committees of the institutions involved. All participants received an informed consent form explaining the study's objectives and the voluntary nature of participation.

Results and discussion

Descriptive analysis (total sample). The sample surveyed was composed of two-hundred and forty-eight highly educated Portuguese female emigrants, aged between 22 and 64 years ($M = 36.2$, $SD = 7.06$). Demographics are displayed in Table 2.

Around three-quarters (74%, $N = 184$) of the respondents lived in European countries, and around the same percentage (76%, $N = 189$) lived in urban areas. Of all the participants residing outside of Europe (24%, $N = 64$), twenty-seven (~11%) lived in North, Central, or South America, nineteen (~8%) in Asian countries, fourteen (~6%) in Africa, and finally four migrants (~2%) currently lived in Australia/New Zealand. The average length of residence in the host country was 7.82 years ($SD = 5.99$). There was a higher proportion of respondents either married ($N = 125$) or living in a common-law partnership ($N = 39$), although a substantial percentage (~30%) of the sample also described themselves as single ($N = 74$). A majority of the participants had completed a Bachelor's degree ($N = 106$, 43%) or a Master's degree ($N = 103$, 42%). Around 86% were employed, with non-employed women being either unemployed (~5%) or inactive (~6%).

Considering the yearly distribution of migration events per participant, we observe that the absolute numbers of emigrants greatly increase, quadrupling when comparing the 1980s ($N = 3$) to the 1990s ($N = 12$), again quadrupling when comparing the 1990s ($N = 12$) to early 2000 ($N = 47$), and again when comparing with the period between 2010 and 2018 ($N = 183$) meaning that the majority of the sample migrated after the global financial crisis in 2008.

Table 3 provides information on the mean values for intergenerational solidarity dimensions and perceived ambivalence. In general, the total sample exhibited high levels of normative ($M = 4.19$, $SD = 0.42$), associative ($M = 3.95$, $SD = 0.52$), and functional ($M = 4.02$, $SD = 1.27$) solidarities, although the standard deviation value of functional solidarity pointed to a high variability on the sample (also highlighted by the range values obtained, which go from the minimum to the maximum of the scale). No dimension of solidarity showed mean values below the scale mid-point, meaning that in general, the total sample revealed positive intergenerational solidarity in all dimensions evaluated, with consensual solidarity exhibiting the lower mean ($M = 3.15$, $SD = 0.64$), along with systematic solidarity ($M = 2.99$, $SD = 0.66$). Furthermore, the full sample seems to demonstrate moderate to low levels of ambivalence ($M = 3.20$, $SD = 1.29$), below the scale mid-point, but again a high variability was obtained with values ranging from the minimum (1) to the maximum (7) of the scale used. The total sample also generally showed moderately high levels of

Table 4 Cluster centroids, number of observations, and variability within-cluster (N = 248).

	Cluster 1	Cluster 2	Cluster 3
Size (%)	97 (39.9%)	46 (18.9%)	100 (41.2%)
Explained proportion within-cluster heterogeneity	0.40	0.24	0.36
Within the sum of squares	446.46	273.40	409.41
Silhouette score	0.17	0.13	0.25
Center Normative	-0.38	-0.67	0.68
Center Associational	-0.46	-0.48	0.67
Center Consensual	-0.33	-0.86	0.71
Center Functional	-0.20	0.31	0.05
Center Affectual	0.28	-1.65	0.48
Center Systematic	-0.74	0.08	0.68
Center Psychological ambivalence	-0.09	0.89	-0.33

orientation to acculturation ($M = 5.27, SD = 0.81$), sociocultural adaptation ($M = 5.21, SD = 0.88$), and social cohesion ($M = 5.03, SD = 0.66$). Lower perceived satisfaction with social connections was found ($M = 4.53, SD = 1.31$), but the mean value was clearly above the scale mid-point, nonetheless, more variability was obtained in this measure than within the three previous ones mentioned.

Typology of intergenerational solidarity/ambivalence. From the principal component analysis, the extraction methods used suggested two factors to be retained. The two factors that emerged accounted for 50.8% of the total variance in the sample. An analysis of the data and assessment of cluster quality attested the best solution obtained was 3 clusters, with the following sizes: 100 (41.2%), 97 (39.9%), 46 (18.9%), organized in 2 dimensions with an average silhouette width value of 0.200. Table 4 resumes the number of observations, cluster centroids, and the variability within each cluster in terms of the within sum of squares.

As can be seen in the top row of Table 4, 39.9% of the sample is of the first type, 18.9% is of the second type, and 41.2% is of the third type. The three types are not spread evenly across the sample, with cluster 1 and cluster 3 being the most common ones, with almost 80 percent of all child–parent relationships belonging to these two solidarity/ambivalence types. The third row on the Table is a measure of the variability of the observations within each cluster. Cluster 2 has a smaller sum of squares, than the other two clusters, suggesting that it is more compact and has the least variability, but as this measure becomes larger as the number of observations increases, they are not directly comparable. The underlying modeling assumption is that the data points that are close to each other (in feature space) belong to the same cluster.

Figure 1 shows the visual representation of the loadings plot for principal component analysis, showing the relationship between the principal components and the original variables. That is, how original variables relate and account for the PCs obtained. Such influences or loadings can be traced back from the PCA plot to find out what produces the differences among clusters. So, considering the loading plot and how strongly each variable influences the principal components, we can say that the first principal component (designated by Dimension 1), describing the most variation, is mostly characterized by intergenerational solidarity dimensions such as normative, associative and consensual that are positively correlated. Whereas, functional solidarity is not likely to be correlated with those previous dimensions. Further, psychological ambivalence is likely to be negatively correlated with consensual, associative, and normative

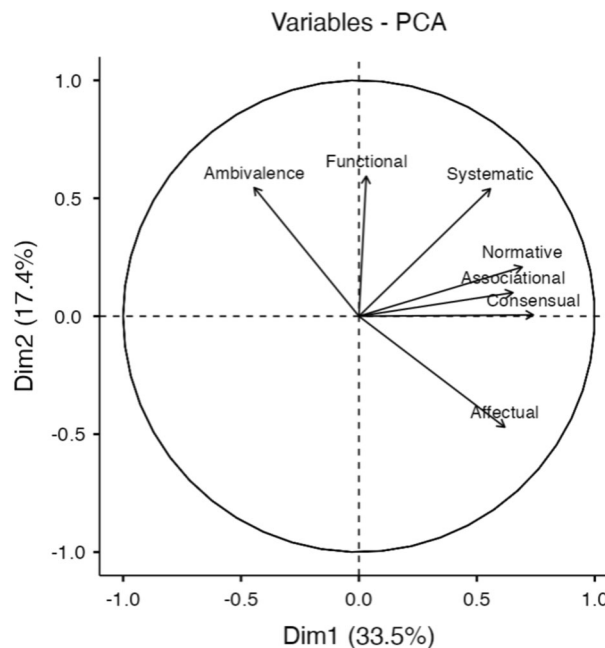


Fig. 1 Principal Components Analysis. Representation of the PCA plot with loadings of variables accounting for principal components.

solidarities. The second principal component (designated Dimension 2), revealing the second most variation, was more strongly defined by psychological ambivalence, with functional solidarity contributing the most. Both these variables strongly diverge from affective solidarity, being negatively correlated.

Figure 2 depicts the parallel coordinate plot of the cluster means to improve cluster description, where mean values correspond to mean-centered and standardized variables. In this analysis, the cluster centroid is used as a general measure of cluster location and helps to interpret each cluster. The coefficients in the columns of clusters 1 to 3 (Table 4) indicate the cluster centroid within each variable used. Each centroid can be seen as representing the “average observation” within a cluster across all the variables in the analysis, as indicated in Table 4 and Fig. 1. Summarizing the different clusters, Type 1 relationships—**Autonomous with affection and low ambivalence**—are characterized by low levels of ambivalence alongside higher than average affective solidarity and lower than average solidarity across all other dimensions. Type 2 relationships—**Ambivalent functional ties with low affection**—are defined by the highest level of ambivalence and above mean functional solidarity with relatively low levels of solidarity across other dimensions and very low levels of affective solidarity. Overall, Type 3—**Low ambivalence with strong cohesion**—exhibits the highest levels of transversal solidarity across all dimensions and the absence of ambivalence.

The first conclusion is that analyzing solidarity simultaneously among clusters with low levels of ambivalence reveals a nuanced picture of intergenerational relationships: as expected, not all adult-daughters that reported low levels of ambivalence, show the same solidarity patterns. The type 3 relationships can be denoted as having high family cohesion with strong levels of solidarity, characterized by an attitude to maintain, build, treat, and restore harmony and communion among all, as addressed by the higher levels of systematic solidarity. We denominated Type 3—**Low ambivalence with strong cohesion**, due to its above-average scores for all dimensions of intergenerational solidarity, cooccurring with the lowest levels of ambivalence in the context of a total sample already characterized by low levels of ambivalence.

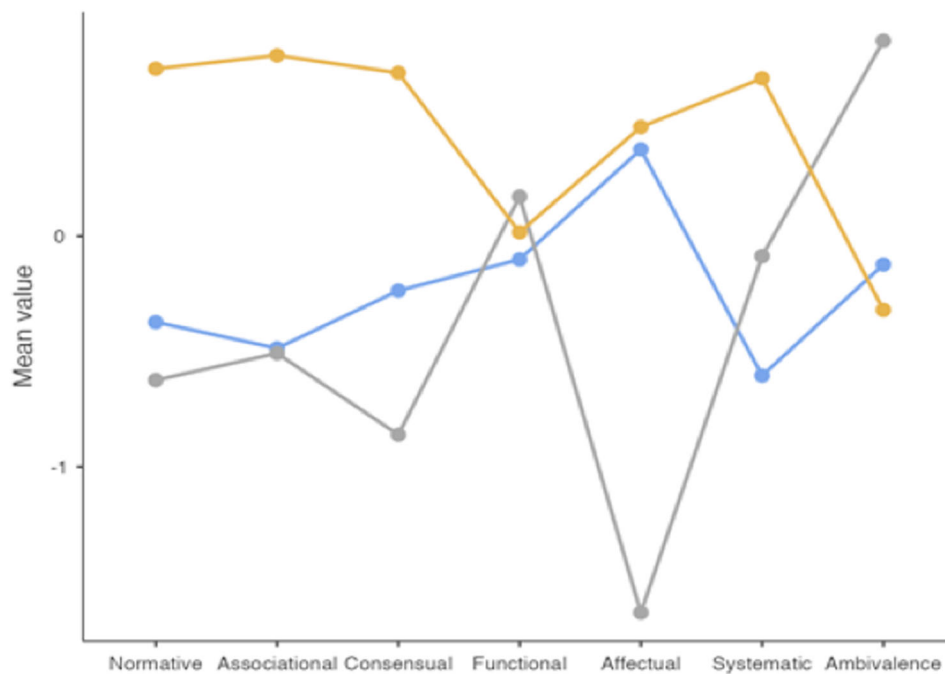


Fig. 2 Distribution of Intergenerational Solidarity/Ambivalence by Clusters (mean values correspond to mean centered and standardized variables; $N = 248$). The parallel coordinate plot of the cluster means to improve cluster description, where mean values correspond to mean-centered and standardized variables ($N = 248$). Cluster 1—blue line. Cluster 2—gray line. Cluster 3—yellow line.

Daughters and their parents in this type show a high probability of frequent contact. Moreover, the probabilities of strong family obligations, norms, and the exchange of advice are high too, along with expressions of solidarity that bear in mind needs and help to solve problems among family members, while the exchange of material support is less likely. Yet, at the same time, its pattern was similar to **Type 1—Autonomous with affection and low ambivalence**, regarding low ambivalence. Type 1 relationships can be denoted as emotional ties directed to parents. An above-average affective solidarity was revealed for this type (although affective solidarity still remained higher for Type 3), while the other dimensions of solidarity decreased substantially. In fact, mean values decreased and were below average for normative, associational, consensual, and functional dimensions, with that decrease being particularly salient in systematic solidarity. Low frequent contact is combined with lower levels of exchange and support, and lower investment in facilitating dynamics between family members and in planning life according to parents' needs, though an effective link is sustained. Overall, this suggests an emotional relationship with few evident manifestations of contact and dynamics that facilitate proximity. These two types help distinguish how perceived low ambivalence can be experienced in terms of very different solidarity patterns, sometimes eventually resulting in a less present and tuned relationship.

Finally, the level of ambivalence helps to distinguish Type 1 and Type 3 from Type 2. Emotional solidarity is lowest in Type 2, coupled with a lack of agreement on family norms, rules, and values on the one hand, but the highest mean values for psychological ambivalence and above-average levels of functional solidarity on the other hand. **Type 2 relationships can be denoted as ambivalent functional ties with low affection:** Below average scores for all intergenerational solidarity dimensions, such as normative, associational, consensual, and with particularly low effectual solidarity were found together with functional solidarity above the mean, which can point to demanding exchanges of financial support. Systematic solidarity is moderate in comparison to other solidarity dimensions which might refer to

requirements in helping to solve problems regarding family and keeping in mind everyone's needs. Those aspects are combined with a relatively low level of solidarity and an emotionally nonconsensual distant relationship. The probability of exchanging financial support and of existing ambivalence is generally on the high side for Type 2.

Characteristics of the three types of parents–daughter relationships. An initial MANOVA showed a significant effect of clustering ($V = 1.351$, $F_{(36,438)} = 25.326$, $\eta^2 = 0.68$, $p < 0.001$). As the design is unbalanced and there is not an equal number of observations in each cell, and the test of homogeneity of covariance matrices was significant at less than 0.001, to prevent severe distortion in the alpha levels, Pillai's trace criterion was used. Multiple comparisons using the Tukey-Kramer method for unequal sample sizes were computed to explore if clusters statistically differed from each other in each variable under study (Table 5).

First, such multiple comparisons (Table 5), along with the analysis of the distribution of the three solidarity/ambivalence types by European host countries (Table 7), and by socio-demographic variables (Table 6), were used to further describe and make sense of the differences between clusters obtained.

Social well-being and acculturation orientation. As previously mentioned, of the parameters related to social well-being from the individual's subjective viewpoint, based on what people consider to be important elements of their life situation, we evaluated social connections (Inglehart and Welzel, 2005) and social cohesion (Boreham et al., 2013) indicators. The present results (Table 5) revealed social cohesion as an important variable in distinguishing different types of intergenerational solidarity/ambivalence.

Daughters displaying higher levels of social cohesion are less likely to have type 2 relationships—**ambivalent functional ties with low affection**—and more likely to have type 3 relationships

Table 5 Multiple comparisons using the Tukey-Kramer method to determine if clusters statistically differed from each other in each variable under study (N = 248).

	Cluster 1 Autonomous with affection and low ambivalence M (SD)	Cluster 2 Ambivalent functional ties with low affection M (SD)	Cluster 3 Low ambivalence with strong cohesion M (SD)	F(2240)	η^2	Tukey-Kramer
Solidarity dimensions						
Normative	4.03(0.34)	3.90(0.34)	4.47(0.31)	59.19***	0.33	1 = 2, 3 > 1, 3 > 2
Associational	3.71(0.41)	3.70(0.47)	4.30(0.43)	55.87***	0.32	1 = 2, 3 > 1, 3 > 2
Consensual	2.94(0.48)	2.61(0.53)	3.60(0.48)	77.93***	0.39	1 > 2, 3 > 1, 3 > 2
Functional	3.78(1.42)	4.42(1.00)	4.10(1.18)	4.30**	0.04	1 = 3, 2 = 3, 2 > 1
Affectual	3.78(0.35)	2.64(0.56)	3.90(0.21)	217.55***	0.64	1 > 2, 3 > 1, 3 > 2
Systematic	2.50(0.47)	3.04(0.71)	3.44(0.42)	84.62***	0.41	2 > 1, 3 > 1, 3 > 2
Psychological ambivalence	3.08(1.08)	4.35(1.17)	2.77(1.24)	29.87***	0.20	1 = 3, 2 > 1, 2 > 3
Social well-being						
Social connections	4.44(1.30)	4.65(1.23)	4.59(1.32)	0.52	0	
Social cohesion	5.02(0.64)	4.83(0.84)	5.13(0.58)	3.39*	0.03	1 = 2, 1 = 3, 3 > 2
Acculturation parameters						
Acculturation orientation	5.13(0.82)	5.04(0.71)	5.50(0.81)	7.87***	0.19	1 = 2, 3 > 1, 3 > 2
Sociocultural adaptation	5.23(0.84)	5.09(0.76)	5.24(0.98)	0.52	0	
Partner status	2.16(0.88)	2.22(1.09)	2.54(1.11)	3.81*	0.03	1 = 2, 3 > 1, 2 = 3
Educational level	7.75(0.72)	7.67(0.70)	7.74(0.72)	0.20	0	
Activity status	1.20(0.62)	1.65(1.14)	1.28(0.78)	5.18**	0.04	2 > 1, 2 > 3, 1 = 3
Residence context	2.73(0.51)	2.63(0.61)	2.75(0.52)	0.83	0	
Host country continent	1.83(1.56)	1.57(1.36)	2.18(1.83)	2.49	0.02	
Age	36.11(6.79)	38.50(6.22)	35.11(7.51)	3.70*	0.03	1 = 2, 1 = 3, 2 > 3
Length of residence	8.85(6.54)	8.17(6.20)	6.67(5.27)	3.34*	0.03	1 > 3, 1 = 2, 2 = 3

Note. ***p < 0.001; **p < 0.01; *p < 0.05.

—**low ambivalence with strong cohesion ties.** Thus, denoting stronger social networks and a better integration into the community for this last group, and suggesting high social well-being might have been triggered by this indicator. Such differentials in satisfaction with physical proximity might be also related to socio-demographic differences between these two groups, which we will further address.

Of the parameters of acculturation measured, those oriented toward the host culture and who attribute value to participating in the host culture, seem less likely to pertain to the types denoted by **autonomous with affection and low ambivalence** and by **ambivalent functional ties with low affection**, and more likely to be part of **low ambivalence with strong cohesion ties**. Literature has found a negative relationship between home orientation and adaptation, such that the greater the importance placed on maintaining the home culture, the poorer the sociocultural adaptation (Demes and Geeraert, 2014). Conversely, the more importance placed on embracing the host culture, the better the adaptation. In this sample, sociocultural adaptation was not a distinguishing feature, suggesting that, overall, the respondents are dealing well with the challenges of the relocation experience (Demes and Geeraert, 2014). However, **low ambivalence with**

strong cohesion ties seemed to reveal a high orientation toward the host culture, with the more practical and behavioral aspects of adaptation that enable the navigation of the culture effectively on a day-to-day basis. Simultaneously, this cluster displays the highest solidarity toward family back home. Thus, maintaining links to the culture of origin does not have a negative effect on acculturation and attitudes toward the host culture. As such, it can be derived that the most integrated group also has the best intergenerational relations.

Distribution of solidarity/ambivalence types across European host countries. When looking at the distribution of the three solidarity/ambivalence types by European host countries, considering Europe was the destination for 73,7% of the total respondents included in the clusters, we can observe that each solidarity type is present in each country, but the distributions vary. Interestingly, the proportion of the **autonomous with affection and low ambivalence** type is the highest (see Table 7) in the countries which are generally viewed as the most de-familialized (Esping-Andersen, 1999; Leitner, 2003; Reher, 1998), such as Sweden, Denmark, and the Netherlands. This distribution clearly suggests that migrants in these host countries might have conformed their

Table 6 Within-cluster distribution of socio-demographic variables: descriptive statistics (frequency and percentages) (N = 243).

	Autonomous with affection and low ambivalence	Ambivalent functional ties with low affection	Low ambivalence with strong cohesion
	f (%)	f (%)	f (%)
Partner status			
Single	31 (31.9)	17 (36.9)	25 (25)
Divorced	0 (0)	2 (4.3)	8 (8)
Common-law relationship	20 (20.6)	6 (13)	12 (12)
Married	46 (47.4)	21 (45.7)	55 (55)
Activity status			
Employed	87 (89.7)	34 (73.9)	86 (86)
Student	3 (3.1)	0 (0)	6 (6)
Unemployed (looking for)	5 (5.2)	6 (13)	2 (2)
Inactive	2 (2.1)	6 (13)	6 (6)
Residence context			
Rural	3 (3.1)	3 (6.5)	4 (4)
Suburban	20 (20.6)	11 (23.9)	17 (17)
Urban	74 (76.3)	32 (69.6)	79 (79)
Host country continent			
Europe	73 (75.3)	38 (82.6)	68 (68)
Oceania	2 (2.1)	1 (2.2)	1 (1)
Sud America	3 (3.1)	1 (2.2)	3 (3)
North America	8 (8.2)	3 (6.5)	9 (9)
Asia	7 (7.2)	1 (2.2)	11 (11)
Africa	4 (4.1)	2 (4.3)	8 (8)
Level of education			
Bachelor	40 (41.2)	21 (45.7)	42 (42)
Master	41 (42.3)	19 (41.3)	42 (42)
PhD	16 (16.5)	6 (13)	16 (16)

Note. Excluded rows from the analysis that correspond to the missing values of the split-by-variable 3 clusters.

ties to reflect patterns of intergenerational solidarity in the host country, adapting to the north-south divide that is commonly suggested in the literature (Reher, 1998). Note that this type seems to share commonalities with the type labeled ‘autonomous’ by Baykara-Krumme and Fokkema (2019), which also stood out from the others by having low probabilities on almost all the indicators of solidarity, except for the affective link. In fact, the ‘Autonomous’ family type appears to walk divergent paths from the southern fringes of Mediterranean countries, such as Spain, Italy, or Portugal, that often show characteristics distinct from the northern countries.

Socio-demographic variables. Besides some country differences in the distribution of the three solidarity/ambivalence types, socio-demographic differentials were found (Tables 5 and 6). For an elaboration of the effect, we will focus on age, current partner status, activity status, and length of residence abroad.

The older the daughters the lower the likelihood of being part of type 3 *low ambivalence with strong cohesion ties*, and the greater the likelihood of being part of type 2 *ambivalent functional ties with low affection*. Type 1 *autonomous with affection and low ambivalence* also showed a lower age average, reaching a marginal statistical significance from type 2, so a mean tendency in the expected direction was obtained. As such, older daughters seem less likely to be in low-ambivalent supportive at-distance families than younger individuals. However, note that age is not a distinguishing feature of both solidarity types with

Table 7 Socio-demographic variables: descriptive statistics (frequency and percentages) (N = 243).

	Autonomous with affection and low ambivalence	Ambivalent functional ties with low affection	Low ambivalence with strong cohesion
	f (%)	f (%)	f (%)
European host countries			
Europe	73 (30)	38 (15,6)	68 (28)
Belgium	0 (0.0)	4 (1.6)	5 (2.1)
Check Republic	0 (0.0)	0 (0.0)	1 (0.4)
Denmark	8 (3.3)	2 (0.8)	6 (2.5)
Finland	1 (0.4)	0 (0.0)	0 (0.0)
France	7 (2.9)	5 (2.1)	10 (4.1)
Germany	4 (1.6)	1 (0.4)	4 (1.6)
Holland	5 (2.1)	4 (1.6)	5 (2.1)
Iceland	1 (0.4)	0 (0.0)	0 (0.0)
Ireland	2 (0.8)	1 (0.4)	1 (0.4)
Italy	1 (0.4)	0 (0.0)	0 (0.0)
Kosovo	0 (0.0)	0 (0.0)	1 (0.4)
Luxembourg	11 (4.5)	2 (0.8)	4 (1.6)
Malta	1 (0.4)	0 (0.0)	0 (0.0)
Norway	3 (1.2)	2 (0.8)	3 (1.2)
Suisse	1 (0.4)	2 (0.8)	4 (1.6)
Sweden	9 (3.7)	3 (1.2)	5 (2.1)
United Kingdom	15 (6.2)	9 (3.7)	16 (6.6)

Note. Excluded rows from the analysis that corresponds to the missing values of the split-by-variable 3 clusters.

low ambivalence, so other variables need to be acknowledged to explain the difference in solidarity in both these types. Moreover, daughters who are economically inactive or unemployed are more likely to belong to the *ambivalent functional ties with low affection* type, and less likely to be part of both *low ambivalence* types. The sample did not include retired adult-daughters, and only 3.63% of the sample was comprised of students. The partner status of the respondent’s daughters is an additional distinguishing feature. Being single and without a partner is more likely for those in the *high ambivalence ties* type; on the other hand, being married and living in a common-law relationship with a partner is more likely for both low-ambivalent clusters. The widow status was not found in this sample (see Table 6).

Second, we were especially interested in the three solidarity/ambivalence types, by first setting the cluster denominated as *ambivalent functional ties with low affection* as the reference group from which we could explore the differences between ties with high and low ambivalence. This begs the question: what do different types of low-ambivalent relationships have in common, and what differentiates them from ambivalent relationships? How can this inform us about the role of intergenerational ambivalence in shaping relationship types?

High versus low ambivalence ties. First of all, our research only elucidated the conditions in which the likelihood of intergenerational ambivalence is associated with a poor rather than high intergenerational solidarity pattern. Particularly, our small sample size, as other authors remarked (van Gaalen et al, 2010), might have prevented us from detecting the association between the presence of perceived ambivalence and high intergenerational solidarity relationships, and from examining which conditions increase this likelihood.

The *ambivalent functional ties with low affection* type were the least frequent relationship form. It is defined as having a low probability of intergenerational solidarity across all dimensions with low cohesion. There is a lack of agreement in values and principles (consensual solidarity) that were not surpassed by negotiating differences, which might become generally perceived as irreconcilable. This type presented the highest mean values for psychological ambivalence, although we can talk about a moderate level of ambivalence, within a sample with mean values of ambivalence below the mid-point of the scale. The risk seems to be that of family devaluation and disinvestment, evidenced by the substantial decrease of affective bonding in this type of relationship and the reduction in frequency of contact (Abbey, 2012; Ferring et al., 2009). This type resembles aspects of what Lüscher and Hoff (2013) designated as “captivation”, which literally refers to being captured in ambivalent relations without resolution. Usually one generation, predominantly the parent, attempts—by invoking the institutional order—to assert claims or to bind adult children using moral terms without basing their demands on a sense of personal solidarity. A parallel to the ‘material-oriented’ type in Baykara-Krumme and Fokkema (2019) might also be drawn. Baykara-Krumme and Fokkema (2019), found that the ‘material-oriented’ type is one of the most common in transnational contexts, in which the dyad relationship shaped by material exchanges is sustained and where intimate, affective aspects become absent, and dialog on values, opinions, and advice seems to be inexistent. Nonetheless, social well-being is demonstrated still by high levels of social connections. In fact, psychological ambivalence did not result in a concomitant decrease in social well-being, since affective investment might have been directed to other social relations formed in the destination, as reported by the level of social connections.

However, the moderate levels of ambivalence might also suggest individuals of this type are experiencing incompatibility between different aims or contradictions they would like to achieve or solve and keep searching for a solution to reconcile this. In the present sample, the likelihood of having high intergenerational ambivalence and low levels of intergenerational solidarities was greater for those living without a partner than for those married and in a common-law relationship. Other studies found this too, for instance, adult child–parent relations might deteriorate in light of the divorce of an adult child (Schwarz et al., 2010). The likelihood of having *ambivalent functional ties with low affection* was greater for unemployed and inactive respondents. As the relationship type with a greater likelihood among older respondents, such states of perceived ambivalence might have also been prompted by disruptive factors (consistent lower acculturation to the host country, and, in relative terms, with the lowest sociocultural adaptation obtained in the sample). Indeed, these adult daughters might be experiencing difficulties in the country of migration and might need financial support from their parents. This may also have a negative effect on their relationship and quality of solidarity dimensions, and be related to the experience of ambivalence. This makes perfect sense when we consider that functional solidarity was measured by financial support received by daughters from their parents. Furthermore, this financial dependence on parents might produce feelings of guilt if parents need (practical) support, that daughters cannot provide due to the distance. In fact, being an older daughter, in this type of relationship, increases the likelihood of having older parents, in the need of more support.

Although the literature suggests daughters have the most intense bond of all parent-child relationships (Pillemer et al., 2017; Wilson et al., 2003), and that, in overwhelming conditions, the likelihood of having negative ambivalent ties is three times higher than for sons (van Gaalen et al., 2010), in the present

study, the ambivalent tie is the least frequent among our sample. Therefore, the risk of having strained relationships is only part of the story. In fact, the more frequent types found were characterized by low perceived ambivalence.

In the subsequent paragraphs, we will focus our attention on a comparison of the two types with low ambivalence—*low ambivalence with strong cohesion ties* and *autonomous with affection and low ambivalence*—to better understand relationship patterns and differentials.

Finally, we focused our attention on the two types with low ambivalence to elucidate their relationships and differentials by comparing the *low ambivalence with strong cohesion ties* type with the *autonomous with affection and low ambivalence* type.

Low ambivalence ties: strong cohesion versus autonomous with affection. We have contended that the comparison between the two relationship types with low ambivalence (equally frequent in the sample), may provide insights into the different relationship dynamics.

In fact, operationalizing ambivalence as a “sensitizing construct” and a catalyzer, able to resolve relationship issues, does not always mean this element will work as a constructive element to increase closeness and resilience (see van Gaalen et al., 2010). Individuals might become captive in ambivalent relationships (similar to the ambivalent type identified in the present study), or they might even be resolved by creating distance and reducing contact frequencies, with the goal to protect other dimensions of the relationship by “blocking” ambivalence from daily experiences.

In this study, we were faced with two low-ambivalent relationship types. As we approached this typology with a cross-sectional design, so measuring individuals at one point in time, we can only know how the relationship is described at that point in time. However, the dynamics between the different solidarity dimensions and the consideration of the role of the other variables included in the study might enlighten us on the different arrangements that families achieve when relationships are perceived as low ambivalent.

The direct comparison of the two relationship types with low ambivalence (Tables 5 and 6) shows that there is an effect of the orientation toward acculturation, in that those who seem to absorb the host culture in their lifestyle are more likely to be in a relationship with *strong cohesion ties*. On the other hand, *autonomous with affection ties* are much more likely in daughters separated from their parents by more years abroad. So, the length of residence abroad also has an effect on the type of relationship, being another feature distinguishing both types. In fact, the more the years abroad the less likely it is for the relationship type to be *low ambivalence with strong cohesion ties*, and the more likely it is to be an *autonomous with affection and low ambivalence* type of relationship. Indeed, length of time abroad is the socio-demographic variable, along with orientation toward acculturation, that distinguishes both types of relationships with low ambivalence. This pattern of more daily disconnected relationships is aligned with the literature that suggests the longer the separation and geographical distance between parents and adult-children abroad, the more difficult it is to maintain close frequent contact (van Gaalen et al., 2010).

A strong similitude of *strong cohesion ties* is evident with what Lüscher and Hoff (2013) described, in their fourfold model, as “solidarity”; a relation characterized by reliable support, or a willingness to foreground commonalities to promote cohesion. According to the authors, the members of the family feel committed to their traditions and get along with one another quite well. Thus “solidarity” is a mode of dealing with

intergenerational ambivalences, which may be more covert than overt. This description also converges with the evidence of low ambivalence expressed. Further, social adjustment to the cultural context occurred in a positive and sustained way, suggesting a successful integration process. This might suggest that families manage and emotionally regulate these challenges and oscillations, resulting in a lower perceived ambivalence (Fingerman et al., 2008). It also reiterates findings that show relationships with a high level of affective solidarity and consensus tend to coexist with no perceived ambivalence, even if countries differ in norms and societal rules (Lowenstein, 2007). Intense acculturation and situational adaptation do not automatically have to disrupt solidarity ties, and can even increase family cohesion (de Haas, 2010).

By contrast, *autonomous with affection ties* seems akin to the ‘autonomous’ type by Baykara-Krumme and Fokkema (2019), as remarked by the authors, one of the more common types in transnational contexts. As the length of time being apart increases, relationships seem to become less frequent in contact and with less availability to acknowledge others’ daily necessities. Ambivalence is not felt or, alternatively is not acknowledged openly. Relationships require less negotiation, as no expression and incorporation of divergent ideals, norms, and values seem to be frequent. But that does not preclude bonds from being emotionally charged. Before, we acknowledged the fact that this group lives in so-called de-familialized welfare contexts (Esping-Andersen, 1999; Leitner, 2003; Reher, 1998), such as Sweden, Denmark, and the Netherlands. Nonetheless, these respondents exhibited high levels of sociocultural adaptation, suggesting an efficient and functional relationship with the host countries’ norms and rules.

Further, although we do not know longitudinally what happened before, and what will happen in the future, it might be that this type of relationship has resolved existent ambivalences by reducing contact, thus keeping high affectual solidarity and avoiding conflicts and tensions.

Conclusions

Understanding transnational intergenerational solidarity is an important research question that has gained increasing attention. Our study provides insight into the complexities of these parent-daughter bonds by interrogating the role of ambivalence qualifying each solidarity dimension differently. However, to add to the idea firmly evidenced in the literature that ambivalence is a sensitizing construct (Lüscher, 2004, 2011), or an emotional regulator (Abbey, 2012; Abbey and Valsiner, 2005), our results shed light on how relationships might function both while perceived as high as well as when perceived as low ambivalent. To our knowledge, this is the first study to adopt a typological approach to explore arrangements between perceived ambivalence associated with intergenerational solidarity dimensions. Moreover, the importance of socio-demographic characteristics in understanding intergenerational solidarity types is also demonstrated.

Some intergenerational solidarity dimensions seem to be more involved with ambivalence, such as functional solidarity (as seen in Type 2 relationships). About one-fifth of the Portuguese parent-daughters who maintain high levels of functional contact and financial exchange, with lower levels of affection and consensus, have high ambivalent relationships. This ambivalence seems to pertain to tensions experienced by daughters due to receiving financial support from their parents, while not feeling affectionally close and not sharing the same values (as is expressed in the ambivalence questionnaire: being happy to receive support but at the same time feeling oppressed by parents, wanting to be independent from parental support).

But the presence of high ambivalence is also informed by the socio-demographic differentials found. These are older daughters facing challenges of being mostly single, and economically inactive or unemployed. In line with theoretical assumptions, we found that those with a lower level of acculturation and more difficulties in the host country (Berry, 1997; Lewis, 2008; Durgel et al., 2009; Yagmurlu and Sanson, 2009), experience higher perceived ambivalence with poor solidarity relations. Note that the situation of these daughters might be one of exception as this population of highly educated daughters typically migrate for skilled jobs, so the default would be the absence of the need for financial support from their parents, but the other way around. The types with perceived low ambivalence reveal a nuanced picture of intergenerational relationships in terms of solidarity patterns. Daughters more likely to be in relationships with low ambivalence but with high intergenerational solidarity are in general better adapted in the migration context and slightly younger on average. On the other hand, daughters who, in comparison, are well adapted socio-culturally, but less well acculturated, and who live in countries with stronger welfare state systems and less reliance on families as providers of care, are more likely to have autonomous relationship types in which ambivalence is low, solidarity is low, but affect is high. On average, they have lived abroad for longer, which might produce a distancing effect as ambivalence is mitigated by space and time. It seems that there might be a spillover effect: those who fare well in the country of migration, have better relations with their families at home—either being very interdependent or very independent, but always with good affective quality and low ambivalence.

Recommendations. Given the complexity of the questions studied herein, we would recommend further longitudinal research to fully understand the conditions under which ambivalence is instigated as a regulating mechanism and triggers different family arrangements, by shaping dynamics and relations between the multiple solidarity dimensions. The typology described here characterizes parent-daughter ties as they exist at a particular point in time. Indeed, given the cross-sectional design we do not have information on which dynamics have occurred before our study, as we, primarily, approached observed relationship patterns in a single moment. Future work efforts should be directed at studying shifts in the typology over time and qualifying the role of exchanging patterns of interdependence between parents and adult daughters over the life course. The implications of that would be a more sophisticated and deep understanding of the changes operating from a life span family perspective. Moreover, the gender perspective should be foregrounded in further research through the comparison of male and female migrants, and indeed other gender identities. This would enable a more precise understanding of how the transnational patriarchy might shape intergenerational solidarity across different contexts, and contribute to (re)thinking theories that endorse intersectionality to frame research on gender and roles of care (Carbado et al., 2013).

Finally, future work should also attempt to better capture variations in the dependency structure between parents and adult-children, for instance by including more detailed information on the health status of the aging parent, and more measures on the expectation of support by both parts of the dyad. Indeed, the results of this study suggest that, sometimes, the need for informal caregiving can lead to psychological distress for the giver. On the other hand, previous studies (van Gaalen et al., 2010) suggest that aging parents expect less support from their children than their own children report to be willing to give in case of need. So, social policymakers deciding on the balance between formal and informal care should consider the

circumstances but also the expectations of aging parents of preserving independence from their children, which is more than that expected by social common sense.

Data availability

The datasets generated during the current study are not publicly available since they constitute an excerpt of research in a Doctoral study (Doctoral Grant from Fundação para a Ciência e Tecnologia, under reference PD/BD/128345/2017), with ethical protection for the participants. Still, general data are available from the corresponding author upon reasonable request. Research data is available in Portuguese.

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Notes

- 1 There are various expressions of systematic solidarity: the capacity to organize one's own life, always bearing in mind the necessities of other family members who are in need; the capacity to solve and to help to solve the problems among the members of the family; and the capacity to organize activities in order to strengthen family ties.
- 2 Some of those predictors are micro-level, such as education, health status, and income) and features such as gender, age, and marital status (van Gaalen and Dykstra, 2006). Others pointed to broader macro-level variables, such as national and cultural contexts including welfare regimes (Albertini and Kohli, 2013).
- 3 We decided not to use structural solidarity because this dimension depends on external factors such as the geographical proximity/distance, whereby in this case, due to the sample, the residential distances would always be rather high.

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Author contributions

These authors share the first authorship: ASS and JM. Conceptualization, ASS, JM, CB. Methodology, ASS, JM, CB. Statistical Analysis, ASS. Writing—original draft preparation, ASS. Review, ASS, JM, IA, CB, EM. Supervision, ASS, JM.

Competing interests

The authors declare no competing interests.

Ethical approval

The research from which this data was extracted was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of the Faculty of Psychology of the University of Lisbon (no reference assigned), in compliance with the code of the American Psychological Association (2018). This article does not contain any studies with animals performed by any of the authors.

Informed consent

Participants were provided with detailed information about the study aims and procedures, which was obtained from all participants involved in the study. Confidentiality and protection of anonymity were both assured to all the participants.

Additional information

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