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Implications of Changes in Family Structure and Composition for the Psychological Well-being of Filipina Women in Middle and Later Years

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Abstract

The health implications of multigenerational coresidence for older adults is a well-researched topic in the aging literature. Much less is known of its impact for women in mid-life. We used data from the Cebu Longitudinal Health and Nutrition Study (2002, 2005, 2007 and 2012), to study the influence of transitions in multigenerational household composition on depressive symptoms for women in mid-life transitioning into old age. Our initial analysis showed little effect when we use the conventional classification of nuclear vs. extended family and transition in and out of extended family. When we described shifts in the family environment by compositional changes, that is, change in the presence and absence of particular family members, we found significant association between depressive symptoms and two types of role transitions: the loss of a spouse in the household, and the entry and exit of grandchildren in the household.

Multigenerational coresidence is an essential context for the exchange of support among family members, and studies have documented its associated mental health benefits, particularly in settings where there is a strong normative culture of old age support by children, and when coresidence is consistent with older adults' wishes (Chen and Short 2008; Silverstein, Cong and Li 2006; Do and Malhotra 2012; Sereny 2011). In the context of multigenerational coresidence, adult children can provide economic support and daily care for elderly parents, while older parents can give adult children economic support and help caring for grandchildren (Silverstein, Cong and Li 2006). In addition to the material benefits such living arrangements can provide, coresidence can bring emotional rewards when family members feel that they are positively engaged with one another and fulfilling normative expectations of mutual care. At the same time, coresidence can also strain family members' feelings of well-being, when care demands feel taxing or when coresidence results in a loss of privacy (Amirkhanyan and Wolf 2003; Cong and Silverstein 2008).

While the mental health effects of coresidence, both positive and negative, are well-documented, the effects of transitions into and out of such living arrangements remain underexplored. However, such transitions are central to the process of forming and changing coresidential households. Even in countries where extended family living is prevalent,

individuals typically do not stay permanently in the same type of living arrangement, but rather experience multiple transitions in family structures throughout their lifetimes. Different changes to family relationships and shifts in family environments may have very different meanings, and may lead to different psychosocial, behavioral, and socioeconomic health pathways. For example, the transition from a nuclear family to an extended family may be the result of an adult child's new spouse marrying into the family, of an aging parent moving into the household, or of grandchildren moving in with a grandparent. The mental health implications of such family and household transitions may be quite different depending on the life stage that an individual occupies, and the type of transition that occurs. Existing studies on the relationship between family structure and health focus overwhelmingly on *older adults'* living arrangements (Natividad and Cruz 1997; Johar and Maruyama 2011; Sereny 2011; Do and Malhotra 2012; Gierveld, Dykstra and Schenk 2012). Much less is known, however, about how multigenerational living arrangements affect adults in mid-life, which is in between early adulthood and old age. Mid-life is arguably the longest life segment for most individuals, and it contains numerous life transitions.

In this paper, we examine the mental health effects of extended family living transitions among women living in the Cebu metropolitan region of the Philippines. In the Philippines, the tradition of extended family is strong, but family nuclearization is under way (Agree, Biddlecom and Valente 2005; Go 1992; Natividad and Cruz 1997). We use panel data from the Cebu Longitudinal Health and Nutrition Study (CLHNS), which is an ongoing community-based study of women in metro Cebu, the second-largest metropolitan region of the Philippines. We examine how transitions in family structures and associated changes in family roles affect Cebu women's psychological well-being. We follow a group of women between age 32 and 66 (with a mean age of 45) over time, examining whether any family transitions that occur between survey years (i.e. in the periods between 2002 and 2005, 2005 and 2007, and 2007 and 2012) affect their depressive symptoms in the subsequent survey year (2005, 2007, and 2012). Previous studies have focused on cross-sectional examination of the relationship between household context and well-being. Our contribution is to examine how women's psychological well-being is affected specifically by *changes* in family structure and household composition in their transition from mid-life to old age.

The Context of the Philippines and Filipino Family

With a population of 100.1 million, the Philippines is the 7th most populous country in Asia (Population Reference Bureau 2014). It has a newly industrialized economy, with GDP around 272.1 billion USD, the 15th largest in Asia (World Bank 2013). The Philippines is a latecomer to the demographic transition. Although the total fertility rate has been declining since the 1970s, it is still as high as 3.3 between 2005 and 2010 (United Nations 2012). As a result, the country has a quite young population, but the population of 50 years and older is expected to grow steadily in the next thirty years (United Nations 2012).

Family nuclearization is underway in the Philippines, but norms for strong intergenerational ties remain prevalent. Despite the traditional norms for extended family coresidence, average household size in the Philippines has been declining since the 1970s with an increasing trend toward nuclear families (Go 1992). Traditional norms favor networks of reciprocal support

among extended kin (Agree, Biddlecom and Valente 2005; Alipio 2013; Trager 1988). A high degree of exchange commonly occurs among family members in different relationships to one another, across generations. Ties of support are particularly strong between parents and children, according to nationally representative studies (Agree et al 2003; Hermalin, Chang and Roan 2002; Yu 2013). Intergenerational coresidence is common, and adult children typically live in their parents' household until marriage (Trager 1988). Older parents also commonly live in the households of their adult children (Natividad and Cruz 1997). Coresiding elderly typically are actively involved in the household. For example, ninety-three percent of Filipino grandparents provide regular care for their grandchildren (Agree, Biddlecom and Valente 2005). Increasing rate of Filipino labor out-migration also creates additional demand for grandmothers to live with grandchildren and to participate in childrearing (Parreñas 2000).

While Filipino gender norms have historically been more egalitarian than those in many other Asian countries, gender dynamics are likely to differ from household to household. Men may have ultimate authority over many decisions in the household, but it is not uncommon for women to manage household finances (Williams and Domingo 1993). There is also strong normative support for women's labor force participation (Alcantara 1994). At the same time, the bulk of responsibility for family support and obligations falls on women (Trager 1988).

Previous Literature on Multigenerational Living Arrangements and Psychological Well-being

Coresidence with family members has been shown to have implications for individuals' physical and mental health across a variety of national and cultural contexts (Allendorf 2013; Cheng and Chan 2006; Gierveld, Dykstra and Schenk 2012). Evidence is particularly strong in support of the health benefits of intergenerational coresidence for *older adults* in Asia where coresidence is common and normative, unlike contexts such as the U.S. where coresidence is less common and typically driven by the poor health or financial needs of the parental generation (Hughes et al 2007). Positive health benefits of coresidence with family members for older adults are tied partially to whether older adults feel their expectations for filial piety are being met (Chen and Short 2008).

Coresidence with adult children can improve older adults' material well-being and remove the stress of having to maintain a household on their own (Cong and Silverstein 2008). Coresidence can solidify affective ties, which may improve older adults' feelings of social connection, thus improving their well-being (Su and Ferraro 1997; Ross, Mirowsky and Goldsteen 1990). Coresidence may also be a source of satisfaction for older adults when they can offer resources and care to younger family members (Muller and Litwin 2011; Ku et al 2012). At the same time, coresidence with younger family members may also produce stress for older adults, with overwhelming caregiving duties, and loss of privacy and/or control (Cong and Silverstein 2008).

Although the health effects of intergenerational coresidence for older adults have been well-studied, much less is known of the effect of living in multigenerational household on

psychological well-being in mid-life. The rapid decline of mortality in the Philippines means that many middle-aged women may live with the parental generation. At the same time as adults in mid-life are contending with their own changing social roles and health, they must adjust to the needs of their aging parents. Intergenerational ties can have both positive and negative effects for middle-aged adults, and are dependent on individual families' particular contexts and the quality of their relationships (Nauck and Becker 2013). Broader changes to the social roles, relationships and health of mid-life adults add to the context in which the mental health effects of caregiving to aging parents unfold (Lachman 2004), as do previous life experiences, coping styles, gender attitudes, and outside sources of social support (Moen, Robison, and Dempster-McClain 1995; Voydanoff and Donnelly 1999).

Positive effects of intergenerational ties for those in mid-life can arise from grandparents' help in caring for grandchildren, and when older adults act as emotional supports and role models for their own children and grandchildren (Bengston 2001). However, when middle-aged adults provide care for their older parents or parents-in-law, the effects for their own well-being appear to be mixed. For example, some U.S.-based studies show that providing support for family and friends is associated with positive mental health benefits among midlife women; this is attributed to the positive connotations of "feeling needed", gaining "a sense of purpose", and satisfaction in fulfilling normative caring roles (Fiori and Denckla 2012; Gerstel and Gallagher 1993; Marks, Lambert and Choi 2002). In other U.S.-based studies, however, a transition to caregiving for older parents is associated with an increase in depressive symptoms and psychological distress for the caregiver (Turner, Killian and Cain 2004). A study based in Japan shows an association of caregiving to parents with increased psychological distress for caregivers, especially among female caregivers (Oshio 2014).

However, these studies focus on national contexts in which norms are less overwhelmingly in favor of intergenerational coresidence than in the Philippines. To the extent that satisfaction may arise from the fulfillment of normative social roles (Gerstel and Gallagher 1993), the psychological effects of coresidence for Filipina women in mid-life may be different. Among mid-life adults, both instrumental and emotional caregiving are largely conceived as "women's work" across multiple cultures (Walker, Pratt and Eddy 1995; Lee 2010; Schmid, Brandt and Haberkern 2012). Middle-aged women in the Philippines provide the bulk of care to their older adult family members (Trager 1988; Yamauchi and Tiongco 2013). Distress caused by this caregiving may lead to negative emotional effects from caring for parents (Marks, Lambert and Choi 2002; Yee and Schulz 2000).

The health impact of intergenerational coresidence may also depend on household power dynamics, and roles within the household. A younger woman may be at the bottom the status hierarchy in a multigenerational household, and her physical and mental health may suffer as a result (Das Gupta 1999). Older women are more likely to be household heads, and hence to control resources and command respect from other household members, and therefore may benefit from multigenerational coresidence (Ruggles and Heggeness 2008; Williams and Domingo 1993).

In sum, for women at different places in the life course, the implications of living with extended family may be totally different, and may differ by household composition. For

younger women, the presence of parents in the household may be a source of economic support and assistance or a source of stress and strain (Montgomery, Gonyea and Hooyman 1985). For older women, the addition of grandchildren in a household may be a source of enjoyment; alternatively, it may be a source of stress (Cong and Silverstein 2008).

Research Plan

Our study addresses a key gap in the gerontological literature on the implications of multigenerational living arrangements for women from mid-life to old age. There is a dearth of research on the effect of household structure *transition* upon women's psychological well-being. Even as extended family living is highly normative in the Asian context, coresidence between parents and adult children is typically not a static arrangement, but rather changes over the life course (see Chen 2005). As a first step in our study, we documented whether transitioning to and from an extended family household is associated with better or worse psychological well-being, and further, whether this effect changes as a woman moves from mid-life to old age.

Next, we tracked changes in household composition by identifying the changes in the presence and absence of family roles others occupy specifically from the focal woman's perspective at the time she is surveyed. We further stratified the sample by age groups, as proxies for life stages. One of the drawbacks of classifying families as nuclear or extended in a life course study of family structure is that the internal dynamics among extended families can vary based on life stage. Depending on the role that a woman occupies--whether she belongs to the middle generation (adult children), or the older generation (parents)--the implication of intergenerational ties for her psychological well-being can be quite different. Family members enter and exit the household through births, deaths, and residential moves. Concurrent with these changes, old roles may be lost and new roles may be gained.

The life course perspective emphasizes the timing of these transitions and how one person's transition necessitates adjustment for other family members (Elder and Johnson 2003). The nature of these role transitions may determine whether a transition has positive or negative consequences for the well-being of those experiencing them. Such transitions can occur both sequentially and concurrently. For example, in the context of extended family, a married woman with children can initially occupy the role of a daughter/daughter-in-law, living with her parents or parents-in-law. The passing away of the parental generation may lead to a period of nuclear family living arrangement. Later in her life, she may become a mother-in-law and a grandmother. These changes are not simply changes in family structure or family size but reflect evolving family roles within the household.

Thus, a simple classification of transition to/from extended family to nuclear family may not accurately document the health implications of these role transitions. Their effects may also be multiple and complex. For example, widowhood or the loss of a spouse has been well-documented to have negative health consequences (Sullivan and Fenelon 2014). Whether it has an immediate or long lasting effect is still open for debate. The implication of losing a coresiding parent is not well-known. On the one hand, the grief associated with the loss of a beloved parent could lead to a decline in psychological well-being. At the same time, the

loss of parents may relieve caregiving burdens and thus may improve psychological well-being. Similarly, the effect of transition to grandparenthood on psychological well-being can be positive or negative. Role strain theory posits that the competing demands of multiple social roles can cause role strain or role overload (Pearlin 1989; Rozario, Morrow-Howell and Hinterlong 2004). Living with grandchildren can mean intensive caregiving for grandmothers, can elevate stress and can thereby be harmful for mental health (Blustein, Chan and Guanais 2004). On the other hand, role enhancement theory suggests that having multiple social roles enhances social integration and can lead to health benefits (Rozario, Morrow-Howell and Hinterlong 2004). Recent studies on the health implications of grandparental caregiving suggest that its effect depends on the normative and socioeconomic contexts as well as the intensity of caregiving, and individuals' feelings about the circumstances of caregiving (Chen et al. 2014; Musil et al 2010).

Thus, as a final step in our analysis, our study monitored the entry and exit of different family members, including spouses, parents, children or grandchildren, to and from the households of women from mid-life to old age. We also aimed to examine the effects not only of a change from extended to nuclear family residence or vice versa, but also to examine more specifically those of focal women's *particular* family role transitions (e.g. mother to grandmother, wife to widow) on women's well-being

Data and Measurement

Our study used the Cebu Longitudinal Health and Nutrition Study (CLHNS 2002, 2005, 2007, and 2012). The CLHNS, established through collaboration between researchers at the Carolina Population Center at UNC Chapel Hill, and the Office of Population Studies Foundation (OPS) at the University of San Carlos in Cebu, followed a cohort of mothers and an index child born in 1983-84. Using a single stage cluster sampling procedure, 17 urban and 16 rural barangays (local administrative units) were randomly selected from the 255 barangays in Metropolitan Cebu in 1980. The 33 barangays, representing about 28,000 households, were surveyed to locate all pregnant women. Those who gave birth on the dates 5/1/83 through 4/30/84 were included in the sample (n=3,237) and interviewed in their 6 or 7th month of pregnancy, immediately after the birth, and then bimonthly for two years, with follow-up surveys in 1991, 1994, 1998, 2002, 2005, 2007, and 2012. Information on depressive symptoms (our dependent variable) was not collected until 2005. Thus, given our interest in how family transition predicts subsequent depressive symptoms, we utilized a stacked longitudinal data design, with depressive symptoms measured in 2005, 2007, and 2012, and family transition variables capturing changes in family structure and household composition in the intervals from 2002 to 2005, 2005 to 2007, and 2007 to 2012. The baseline 2002 sample had 2,100 respondents, from which 304 respondents dropped off from the survey at some point between 2002 and 2012, and 47 of them had missing values on different variables. In sum, 1,749 respondents with full records were included in our analysis. They were between age 32 and 66 at the time of the survey, with a mean age of 45. We pooled the three time periods together. Each respondent contributes three records, resulting in 5,247 observations.

Measurement of Key Independent Variables

We measured family structure by distinguishing whether the family was a nuclear or an extended family. This was based on a question that asks about who is present in the household and how they are related to the focal respondent. If a respondent only lives with her husband and/or children in the family, we coded the family as a nuclear family. Otherwise, if a grandchild, a parent or other relatives and non-relatives coreside in the household, we coded it as an extended family. As shown in Figure 1, in 2002, the nuclear family was the prevalent family structure (62.8%). By 2012, the proportion of extended family structure had substantially increased from 37.2% to 64.5% and nuclear family was no longer the modal category.

Figure 1 shows that the overall proportion of nuclear and extended families in the sample changed over time, but it does not reveal the extent to which individual families experienced transitions from one survey year to the next. Thus, we created a variable measuring changes in family structures for each woman between two adjacent waves of survey: 1) remaining in a nuclear family; 2) remaining in an extended family; 3) changing from an extended family to a nuclear family; and 4) changing from a nuclear family to an extended family (see Table 1). Close to a third of the families (27.5%, 29.5%, and 33.9% during 2002-2005, 2005-2007, and 2007-2012 respectively) experienced transitions in their family structures in between survey years, reflecting a high level of fluidity in family boundaries.

In addition to characterizing family structures and transitions, we also examined household composition by identifying what roles the other household member, as relative to the respondent occupies within the household. We did this by identifying whether a spouse, children (including biological children, step-children, adopted children, children-in-law, and step children-in-law), grandchildren (including biological grandchildren, step-grandchildren and adopted grandchildren), parents (including respondent's parents, stepparents and parents-in-law), or other people¹ were living in the household (see Figure 2). The most noticeable change from 2002 to 2012 was the increase in the proportion of households with grandchildren (from 20.6% to 58.1%). Meanwhile, the proportion of households with spousal presence declined from 86.7% to 73.5%. Because divorce is illegal in the Philippines, this is most likely due to death of the spouse, though separation is a possibility as well.

Next, we examined the *changes* in household composition for each respondent in successive waves (see Table 2). Because of the nature of the longitudinal survey, if the focal respondent has moved, she is not followed up, so all the movement we consider are all about other household members in relevance to the focal respondent. Consistent with the aggregate statistics in Figure 2, changes in household composition in between survey years were frequent, but more so between some family/household roles than the others. Cumulatively, around 20.2% of the respondents transitioned from having a present spouse to an absent

¹The category of other people included the woman's relatives such as siblings, grandparent, uncle, aunt, cousin, nephew, niece, great grandchild, and in-law relatives apart from parents-in-law and children-in-law. Besides relatives, the category of other people also included servants and other non-relatives. Since the presences of these relatives and non-relatives in the household were few, we combined them together into the category of other people.

spouse while 11.4% of the women transitioned from presence to absence of children in the household between 2002 and 2012. The presence of “other people” was volatile in that both move-in and move-out were common (e.g. 5.3% of the household had other people moving in while 7.8% of the households had other people moving out from 2002-2005). The presence of parents was very low to begin with and changes were thus not frequent. In contrast, the presence of grandchildren in the household increased steadily. 15.8%, 19.5% and 24.2% of the women who did not have any grandchild in the household gained at least one grandchild in the household in between survey years (2002-2005, 2005-2007 and 2007-2012). At the same time, grandchildren also moved out of the household. For example, among 5.9% of the women who had grandchildren in the household in 2002, grandchildren were no longer present in 2005. By 2012, 8.5% of who had grandchildren in the households in 2007 had seen them exit. These changes in household composition indicate that common family role transitions that occur for respondents in mid to late life include widowhood and/or separation, and grandparenthood.

Measurement of Dependent Variable

We used the CES-D (Center for Epidemiologic Studies Depression) depression scale to measure respondents' psychological well-being. Respondents were asked to rate how frequently in the past four weeks they experienced feelings or problems from a list of 16 items that are considered to be symptoms of depression². These included the feelings of unhappiness, loneliness, worry, and problems with headaches, digestion, and sleep. The answer was rated on a scale ranging from 1 (none of the time) to 3 (most or all of the time). We reverse-coded some items in order to make the scale consistent. The sum of the scores reflects the number of depressive symptoms, with a higher score reflecting a stronger degree of depression (see Table 3).

Methods

In our multivariate analysis, we used OLS regression to model the effects of *changes* in family structure or household composition on scale of depressive symptoms (see equation below). We stacked our data by three intervals: 2002-2005, 2005-2007, and 2007-2012.

$$CESD_{it} = \beta_0 + \beta_1 F_{i(t-(t-1))} + \beta_2 C_{i(t-1)} + u_i \quad (1)$$

Our dependent variable was depressive symptoms measured by CES-D score at time t (2005, 2007, and 2012). The key independent variables were represented by $F_{i(t-(t-1))}$, that is, changes in family structure or household composition between survey years. The control variables $C_{i(t-1)}$ were measured in an earlier wave than the dependent variable (i.e. in 2002, 2005, and 2007 respectively). As measures of socioeconomic status we included respondent's years of education, and the assets score of her household in quartiles. We also

²The questionnaire asked about 16 depression symptoms, which include whether the respondent: felt happy, had headaches, had poor digestion, had difficulty falling asleep, felt lonely, was hopeful about the future, felt people were unfriendly, was worried, felt she couldn't overcome difficulties, felt she was able to face problems, felt people disliked her, enjoyed normal daily activities, thought of herself as worthless, felt life isn't worth living, wished she were dead, had the idea of taking her own life.

controlled for whether the respondent was currently working for pay, whether she lived in an urban or rural area, household size (number of people living in the household), age of respondent (in age groups: 30-39, 40-49, and 50+), marital status, and self-reported health status. Descriptive statistics for these variables are presented in Table 3. We also stratified our sample by age groups, as proxies for life stages, and to see whether the changes in family dynamics affect women as they transition from mid-life to old age. Because each respondent has three records from three survey intervals, we adjusted for robust standard errors for clustering in data in STATA. Since we pooled three waves of data together, we also included a variable as a control for time (year: 2005, 2007, 2012, with 2005 as the reference category).

Multivariate Analytical Results

Results of the regression analyses are presented in Tables 4 and 5. We began with the analysis that focuses on aggregated changes in family structures, that is, measuring effects on depressive symptoms of any type of transition to or from extended family living. We started with the baseline model with the key independent variables and then add the controls. Because the effects of the variables were stable across models, we only presented the full models in Table 4.

The results suggested that when change in family structure was defined simply as the transition to or from an extended family living situation, change in family structure between survey years did not have any effect on women's CES-D scores in the following survey year. Compared with women continuously living in nuclear family or extended family, those experiencing transition from nuclear to extended family between survey intervals or vice versa were not significantly different in their level of depressive symptoms. We also performed the same analysis across three different age groups and the results are the same.

The effects of all control variables were in their expected directions. For example, higher socioeconomic status is associated with lower CES-D score. Married women and women with better self-reported health were more likely to have reported better psychological well-being. Living in a larger household was associated with higher depression level, but this effect was only found for women aged 40 to 49.

We next explored the household context in more detail to see how changes in household composition – specifically which family members enter or exit the household – might affect respondents' CES-D score. Results shown in Table 5 told a more nuanced story. First, in the total sample, those who experienced the loss of a spouse between survey years (likely mainly due to mortality but possibly due to separation) showed the highest level of depressive symptoms, 0.699 units higher than those who did not experience such a loss. Those who did not have a spouse in the household in both time periods did not appear significantly disadvantaged in depressive symptoms compared with those who lived with a spouse in both time periods. This was consistent with the stress process theory, in that the impact of spousal loss is the strongest in the beginning but gradually diminishes as one makes adjustment over time.

The second most salient effect was that of changes in the presence of grandchildren between survey years. Those who had grandchildren present in the household in both survey periods showed the highest level of depressive symptoms, followed by those who did not have grandchildren living in the household in either period (0.337 lower than those with grandchildren present in both time periods). Those who gained a grandchild living in the household showed the lowest level of CES-D (0.549 lower than those with grandchildren present in both time periods), followed by those who transitioned from having grandchildren to having none living in the household in between surveys (0.475 lower than those with grandchildren present in both time periods).

The above analytical results clearly suggested the importance of two types of changes in family role reconfiguration in the household: widowhood and grandparenthood. The subsample analyses by age groups provided further evidence that the timing of these transitions matters. We found that the loss of a spouse had a strong negative effect on CES-D scores for women aged 40 to 49. We also found that gaining a spouse in the household had a positive effect for older women aged 50 and over. Continuing absence of any children in the household elevated women's CES-D score (2.980 units higher than those with children present in both time periods), only for women aged 30-39, but not for older women. The effect of transitions in grandchild presence in the household was only significant for women aged 50 above, and only in two categories, that is, the addition and departure of grandchildren in the household. This was probably due to the fact that grandparenthood typically happened later in the life stage. The mixed effects of grandchildren transitioning in and out of the household are discussed extensively in the section below.

Discussion and Conclusion

This paper has examined the mental health effects of transitions in multigenerational living arrangements among mid-life and older women in metro Cebu in the Philippines, examining differences in the effects of these transitions for women in different age groups. While a substantial family sociological and gerontological literature focuses on the implications of living arrangements for older adults, research to date has not focused specifically on transitions into and out of different arrangements, nor has it examined effects for women in mid-life. Our results affirmed that multigenerational living arrangements were far from static and that family relations were critical for individual well-being.

We began our inquiry with an examination of the structure and composition of family living arrangements. While multigenerational living in the Philippines was normative and widespread, our analysis showed that such living arrangements were highly dynamic, involving many transitions from one configuration of family members in a household to another. We found that between survey intervals, transitions in and out of extended family were common. Overall, the proportion of focal women living in extended families almost doubled over the ten-year interval. Meanwhile, household composition changed considerably as family members entered and exited the household. As the focal women's lives unfolded, they experienced life events such as loss of spouse, birth of grandchildren into the household, parents passing away, and children or grandchildren moving in and out of the house, and these events were reflected in transitions in living arrangements.

While transitions in living arrangements were many, different kinds of transitions had different implications for women's psychological well-being. Our results suggest that, if we focus only on the effects of transition in and out of a simple classification of multigenerational vs. extended family living, then we hardly observe any association with depressive symptoms. In contrast, when we examined changes in family composition and family roles occupied by family members, we found that some of the transitions were highly relevant for mental health while others were not. Consistent with the general literature, we found that losing a spouse had a negative impact on psychological well-being, at least in the short term. Over time, the effect of widowhood lessened, since the absence of a spouse in both survey periods did not worsen depressive symptoms. We also found that the effect of a spousal loss was more detrimental for women aged 40 to 49 than those who were younger or older. In addition, we found the gain of a spouse in the household had a positive influence on the psychological well-being of women aged 50 and above, suggesting the possible beneficial impact of marriage, remarriage, or a migrant spouse returning to the household in later life.

Changes in intergenerational coresidence with grandchildren also had effects on women's mental health. The transition from no grandchildren to having grandchildren in the household had a positive effect on mental health while the exit of grandchildren from the household also decreased depressive symptoms, and these effects were more salient for women aged 50 and above. Those women with grandchildren present in the household at both survey dates had the worst psychological well-being. These findings are consistent with the general literature on grandparents caring for grandchildren. On the one hand, grandchildren can be a source of joy and can increase family bonds and life satisfaction. This could explain how gaining a grandchild can reduce depressive symptoms. On the other hand, lengthy coresidence with grandchildren could lead to role strain and have adverse consequences for mental health. This could explain how having grandchildren in both survey periods is the most detrimental for psychological well-being, whereas the transition from having grandchildren to no grandchild coresiding in the household can be beneficial. Other than potential role strain, the negative mental health effects associated with extended period of coresidence with grandchildren may also be a matter of economic constraints. With more people in the household, this could mean fewer resources available for each individual. With grandchildren moving out of the house, this could also mean an increase in family resources per capita, thereby providing health benefits.

Our age subsample analysis also demonstrated how changes in family environment can grow increasingly important for women in mid-life, as these women moved from earlier to later life stages. Indeed, we observed more significant effects for the age subsample of 40-49 and 50+ than those under 40. Life events such as widowhood and grandmotherhood were likely to be more common for women transitioning from middle age to old age. Our analysis clearly showed that these life transitions become increasingly important for women's mental health as they aged.

This study is not without limitations. Our characterization of the family context is limited to the structural level, as we examined coresidence and household composition, without any in-depth analysis of family dynamics, quality of familial interaction, or family caregiving. For

example, we inferred grandparental caregiving by examining the presence and absence of grandchildren in the household, without taking into account actual amount of caregiving. Furthermore, because CLHNS is a household survey, our discussion of family roles was limited to respondents' role within the household. For example, a respondent could have become a grandmother during the course of our study without living with the new grandchild, but our data analysis only captured the transition to grandmotherhood if a grandchild was living in the respondent's household. In addition, because the survey intervals vary from two to five years, it is possible that multiple changes could occur in between survey years but we were not able to capture all of the changes. Finally, the study only focused on depressive symptoms, which is only one dimension of mental health.

This paper contributes to the gerontological literature on family and living arrangements by emphasizing the many different coresidential forms that fall under the umbrella of "multigenerational coresidence", and by demonstrating that individuals and families can move through multiple states. It also stresses the context-specific nature of the mental health effects of family transitions, showing that transition to an absent spouse, and both addition *and* subtraction of grandchildren have statistically significant effects on mental health. Future work will build on these findings to examine broader dimensions of health, and more detailed understanding of family relationships/dynamics.

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Figure 1.
Family structure 2002-2012 (N=1,749).

Figure 2.

Percentage of households with the presence of each type of family member 2002-2012 (N=1,749).

Note. The category of other people includes both other relatives and other non-relatives.

Table 1

Percent Changes in Family Structure from 2002 to 2012 (N=1,749).

	Remain Nuclear	Remain Extended	From Extended to Nuclear	From Nuclear to Extended
From 2002 to 2005	46.3	26.2	10.9	16.6
From 2005 to 2007	37.7	32.8	10.0	19.5
From 2007 to 2012	24.6	41.5	10.9	23.0

Table 2

Percent Changes in Household Composition from 2002 to 2012 (N=1,749).

		Remain Present	Remain Absent	From Absent to Present	From Present to Absent
Spouse	2002-2005	82.2	10.7	2.6	4.5
	2005-2007	79.1	13.1	2.1	5.7
	2007-2012	71.2	16.5	2.3	10.0
Child	2002-2005	97.2	0.8	0.6	1.4
	2005-2007	94.6	1.5	0.7	3.2
	2007-2012	88.5	3.1	1.7	6.8
Grandchild	2002-2005	14.8	63.6	15.8	5.9
	2005-2007	22.9	50.0	19.5	7.7
	2007-2012	33.9	33.5	24.2	8.5
Parent	2002-2005	4.1	91.1	1.8	3.0
	2005-2007	3.1	92.8	1.4	2.7
	2007-2012	1.9	93.9	1.7	2.5
Other People	2002-2005	7.7	79.2	5.3	7.8
	2005-2007	6.2	81.1	5.9	6.8
	2007-2012	5.3	80.3	7.6	6.8

Note. The category of other people includes both other relatives and other non-relatives.

Table 3

Descriptive Statistics for Dependent and Control Variables with Mean and Standard Deviation.
(Pooled sample, 2005, 2007, 2012, N=5,247)

	Total Sample (N=5,247)	Age 30-39 (N=441)	Age 40-49 (N=2,943)	Age 50+ (N=1,863)
Dependent Variable				
CESD	22.890 (3.900)	23.245 (3.795)	22.810 (3.883)	22.932 (3.948)
Control Variables				
Education (Years)	7.245 (3.731)	7.059 (2.952)	7.510 (3.556)	6.871 (4.113)
Currently Working for Pay (Yes=1, No=0)	0.718 (0.450)	0.755 (0.431)	0.737 (0.440)	0.678 (0.467)
Assets Score (<i>Ref. Cat.=1st Quartile (Lowest)</i>)				
2nd Quartile	0.250 (0.433)	0.342 (0.475)	0.259 (0.438)	0.214 (0.410)
3rd Quartile	0.203 (0.402)	0.177 (0.382)	0.204 (0.403)	0.207 (0.405)
4th Quartile (Highest)	0.239 (0.426)	0.170 (0.376)	0.243 (0.429)	0.249 (0.432)
Rural (Yes=1, No=0)	0.289 (0.453)	0.249 (0.433)	0.267 (0.443)	0.333 (0.471)
Household Size	6.707 (2.668)	6.896 (2.418)	6.865 (2.652)	6.413 (2.725)
Age Group (<i>Ref. Cat.=30-39</i>)				
40-49	0.561 (0.496)			
50+	0.355 (0.479)			
Married/Cohabitate (Yes=1, No=0)	0.868 (0.339)	0.939 (0.240)	0.893 (0.309)	0.811 (0.392)
Self-Reported Health (<i>Ref. Cat.=Poor</i>)				
Good	0.829 (0.376)	0.778 (0.416)	0.823 (0.381)	0.851 (0.356)
Excellent	0.085 (0.279)	0.143 (0.350)	0.094 (0.292)	0.057 (0.232)

Table 4

Linear Regression Models Predicting the Effect of Changes in Family Structure on CESD for the Total Sample and Age Subgroups.

(Pooled sample, 2005, 2007, 2012, N=5,247)

	Total Sample	Age 30-39	Age 40-49	Age 50+
Intercept	26.727 *** (0.417)	27.228 *** (1.357)	26.465 *** (0.532)	26.792 *** (0.580)
Changes of Family Structure (Ref. Cat.=Remain Nuclear)				
Remain Extended	0.094 (0.158)	0.101 (0.526)	0.000 (0.198)	0.147 (0.272)
Change from Extended to Nuclear	-0.228 (0.186)	-0.416 (0.570)	-0.098 (0.250)	-0.420 (0.318)
Change from Nuclear to Extended	-0.120 (0.145)	0.519 (0.539)	-0.042 (0.185)	-0.459 (0.267)
Survey Year (Ref. Cat.=2005)				
2007	-1.252 *** (0.115)	-0.657 (0.446)	-1.149 *** (0.149)	-1.656 *** (0.224)
2012	-0.050 (0.128)	0.046 (1.017)	0.188 (0.170)	-0.521 * (0.231)
Education (Years)				
	-0.145 *** (0.018)	-0.082 (0.070)	-0.154 *** (0.025)	-0.133 *** (0.027)
Currently Working for Pay				
	-0.179 (0.127)	-0.734 (0.430)	-0.233 (0.164)	-0.019 (0.211)
Assets Score (Ref. Cat.=1st Quartile (Lowest))				
2nd Quartile	-0.305 * (0.153)	-0.084 (0.454)	-0.271 (0.204)	-0.355 (0.267)
3rd Quartile	-0.435 * (0.170)	-0.047 (0.582)	-0.398 (0.220)	-0.573 * (0.288)
4th Quartile (Highest)	-0.904 *** (0.180)	0.135 (0.591)	-0.787 ** (0.231)	-1.280 *** (0.291)
Rural				
	-0.304 * (0.141)	-0.345 (0.424)	-0.253 (0.183)	-0.399 (0.217)
Household Size				
	0.045 (0.027)	-0.096 (0.078)	0.070 * (0.035)	0.026 (0.042)
Age Group (Ref. Cat.=30-39)				
40-49	-0.170 (0.198)			
50+	-0.239 (0.233)			
Married				
	-0.415 * (0.189)	-0.482 (0.873)	-0.422 (0.265)	-0.387 (0.269)
Self-Reported Health (Ref. Cat.=Poor)				
Good	-1.577 *** (0.252)	-1.519 (0.837)	-1.723 *** (0.338)	-1.361 *** (0.373)
Excellent	-2.338 *** (0.302)	-2.706 ** (0.936)	-2.405 *** (0.394)	-2.110 *** (0.492)
R ²	0.075	0.053	0.077	0.091
N	5,247	441	2,943	1,863

Note. Standard error adjusted for clusters in the data.

*
p<0.05;

**
p<0.01;

p<0.001

Table 5

Linear Regression Models Predicting the Effect of Changes in Household Composition on CESD for the Total Sample and Age Subgroups.

(Pooled sample, 2005, 2007, 2012, N=5,247)

	Total Sample	Age 30-39	Age 40-49	Age 50+
Intercept	26.926 ^{***} (0.736)	27.399 ^{***} (2.455)	26.035 ^{***} (0.894)	28.041 ^{***} (1.332)
Change of The Presence of Spouse Between Two Surveys (Ref. Cat.=Remain Present)				
Remain Absent	0.133 (0.433)	0.663 (1.561)	0.427 (0.570)	-0.423 (0.603)
Change from Absent to Present	0.036 (0.423)	2.208 (1.517)	0.396 (0.507)	-1.531 [*] (0.717)
Change from Present to Absent	0.699 ^{**} (0.211)	1.029 (0.913)	0.748 [*] (0.300)	0.587 (0.320)
Change of The Presence of Child Between Two Surveys (Ref. Cat.=Remain Present)				
Remain Absent	0.141 (0.436)	2.980 [*] (1.317)	0.449 (0.640)	-0.692 (0.555)
Change from Absent to Present	0.118 (0.615)	0.860 (1.893)	-0.631 (0.856)	0.542 (0.909)
Change from Present to Absent	-0.146 (0.287)	-1.612 (1.345)	0.270 (0.488)	-0.399 (0.363)
Change of The Presence of Grandchild Between Two Surveys (Ref. Cat.=Remain Present)				
Remain Absent	-0.337 [*] (0.170)	-0.563 (0.729)	-0.344 (0.225)	-0.169 (0.265)
Change from Absent to Present	-0.549 ^{**} (0.173)	-0.408 (0.871)	-0.367 (0.240)	-0.866 ^{**} (0.266)
Change from Present to Absent	-0.475 [*] (0.226)	-0.025 (1.267)	-0.252 (0.333)	-0.753 [*] (0.307)
Change of The Presence of Parent Between Two Surveys (Ref. Cat.=Remain Present)				
Remain Absent	-0.113 (0.366)	0.329 (0.859)	-0.254 (0.435)	-0.308 (0.887)
Change from Absent to Present	-0.225 (0.524)	-0.110 (1.290)	-0.439 (0.607)	-0.467 (1.355)
Change from Present to Absent	-0.213 (0.446)	-1.092 (1.136)	-0.401 (0.549)	0.194 (1.083)
Change of The Presence of Other People Between Two Surveys (Ref. Cat.=Remain Present)				
Remain Absent	0.178 (0.249)	-1.169 (0.989)	0.549 (0.285)	-0.132 (0.462)
Change from Absent to Present	0.114 (0.306)	-0.877 (1.201)	0.422 (0.371)	-0.164 (0.572)
Change from Present to Absent	0.213 (0.281)	-0.797 (1.000)	0.499 (0.343)	0.059 (0.534)
R ²	0.079	0.079	0.082	0.099
N	5,247	441	2,943	1,863

Note. All models include individual-level covariates (survey year, education, currently working for pay, assets score, rural, household size, married/cohabitate, self-reported health). The model for the total sample also includes the variable of age groups. Standard error adjusted for clusters in the data.

* p<0.05;

** p<0.01;

*** p<0.001