Single Motherhood and Children's Health and School Performance in Japan

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ABSTRACT

This study examines the well-being of Japanese children in single-mother families relative to their counterparts living with both parents. Using data from the 2011 and 2012 rounds of the National Survey of Households with Children, I begin by demonstrating that single mothers report that their children have significantly worse health and lower academic performance relative to married mothers. This relationship is particularly pronounced for lone mothers (and their children). I then estimate a series of regression models to assess the extent to which the lower levels of well-being among children of single mothers' reflect mothers' (a) economic disadvantage, (b) difficult work circumstances, and (c) worse health and experience of stressful life events. Results indicate that economic disadvantage is particularly important for understanding lower levels of well-being among the children of single mothers, especially those who are coresiding with grandparents. I conclude by discussing the potential implications of these results for understanding linkages between family behavior and inequality in Japan and for the intergenerational transmission of disadvantage via single parenthood.

In the U.S. and other Western societies characterized by high levels of divorce and non-marital childbearing, the well-being of children in single-parent families is of great interest to both scholars and policy makers. Research has consistently demonstrated that these children, especially those living with single mothers, do not fare as well as their counterparts in two-parent families on a range of educational and behavioral outcomes (e.g., Amato 2000, 2001, 2005). The role of single-mothers' limited economic resources in explaining these differences in children's outcomes is well documented (Carlson and Corcoran 2001; McLanahan and Sandefur 1994; Smith, Brooks-Gunn, and Klebanov 1997). Differences in parenting practices also matter. Single parents spend less time with their children and provide less effective monitoring and supervision relative to their married counterparts (Aronson and Huston 2004; Asmussen and Larson 1991; Astone and McLanahan 1991; Sandberg and Hofferth 2001) and these aspects of parenting are associated with less favorable outcomes for children (Amato 2005; McLanahan and Sandefur 1994). Explanations for the observed differences in parenting practices by family structure emphasize the limited time and economic resources of single mothers as well as the negative impact of stress on their emotional health (Carlson and Corcoran 2001; Conger, Conger, and Elder 1997).

In the context of declining public income support and longer work hours for single mothers, access to support from other family members may play an increasingly important role in moderating relationships between single parenthood and children's outcomes. Family-provided support may take many forms, but related research has focused primarily on the role of coresidential living arrangements given that many single mothers live with other adults, typically a cohabiting partner or parents (Bryson and Casper 1999; Fields 2003; Sigle-Rushton and McLanahan 2002). Theoretical expectations regarding the role of coresidence with parents are

mixed. On one hand, the additional economic resources, emotional support, and child supervision provided by coresident (grand)parents should benefit both single mothers and their children. On the other hand, confusion about authority and inconsistency in parenting practices and beliefs may have a detrimental impact (Chase-Lansdale, Brooks-Gunn, and Zamsky 1994; Gordon, Chase-Lansdale, and Brooks-Gunn 2004). Empirical evidence is also mixed, with some studies finding that the children of single mothers fare better in multigenerational families (Aquilino 1996; Brandon 2005; Deleire and Kalil 2002; Mutchler and Baker 2009) and others finding that they fare worse (Black and Nitz 1996; Chase-Lansdale, Brooks-Gunn, and Zamsky 1994).

The ambiguity of these findings from the U.S. highlights the importance of examining similar research questions in other settings. Comparative studies have documented cross-national variation in the economic well-being of single mothers (Uunk 2004) and the outcomes of children in single-parent families (Hampden-Thompson and Pong 2005; Park 2007), but little is known about the relative well-being of children living with single mothers, the importance of mothers' economic circumstances, stressful employment, and mental health in shaping those differences, and the ways in which coresidence with other family members may moderate these relationships in contexts other than the U.S. In the absence of such evidence, it is not possible to assess the generality of patterns observed in the U.S. or to understand the ways in which linkages between living arrangements and the well-being of single mothers may be shaped by social, economic, and policy context. In this paper, I examine relationships between single motherhood, coresidence with (grand)parents, and two indicators of children's well-being in Japan, a country that closely resembles the U.S. in terms of public policies that impact the lives of single mothers, but differs markedly in terms of the prevalence and normativity of intergenerational coresidence.

Policy similarities with the U.S. provide good reason to expect a strong negative relationship between single motherhood and children's well-being in Japan. As in the U.S., public income support for single mothers is limited and the primary policy focus is on the promotion of independence through employment (Abe 2008; Ezawa and Fujiwara 2005; Ono 2010). Although the large majority of single mothers work relatively long hours, most have very low incomes, limited benefits, and little job security (Abe and Ōishi 2005; Tamiya and Shikata 2007). This employment environment may reduce the quality of single mothers' parenting by limiting time with children and contributing to stress and poor mental health.

However, the fact that roughly one-third of Japanese single mothers coreside with their parents (Shirahase and Raymo 2014) suggests that family-provided support may ameliorate the impact of divorce on single mothers and, by extension, their children. By limiting the economic, temporal, and emotional pressures associated with maintaining an independent residence on a relatively low income, coresidence (typically in a home that is owned by the grandparental generation) may contribute to the well-being of single-mothers' children. Furthermore, because many middle-aged women in Japan are not employed outside the home, coresident grandmothers may contribute directly to the well-being of grandchildren by providing care and monitoring while their single-mother daughters are at work.

I use nationally-representative survey data on the mothers of minor children to examine relationships between single motherhood and two measures of children's well-being – their health and their school performance. I address three specific questions: (1) Is single motherhood negatively associated with children's well-being? (2) To what extent is this relationship moderated by coresidence with grandparents? (3) Are differences in children's well-being across combinations of marital status and living arrangements explained by differences in mother's and

children's sociodemographic characteristics, household economic circumstances, mothers' employment circumstances, and mothers' emotional health and stress?

BACKGROUND

Single-mother families in Japan

The number of single-mother families has increased rapidly in Japan. According to the National Survey of Single Mother Households conducted by the Ministry of Health, Labour, and Welfare, the number of households that include a single-mother (unmarried mother with a coresident child under the age of 20) rose by 72% between 1983 (718,100) and 2011 (1,237,700) (Ministry of Health, Labour and Welfare 2005, 2012). The number of households including a single-father is much lower – estimated at 223,300 in 2011 (Ministry of Health, Labour and Welfare 2012). Data from the 2010 census indicate that 9.4% of households including at least one minor child (age 18 or younger) were single-mother households and 6.5% of all minor children lived in a single-mother household (http://www.e-stat.go.jp/SG1/estat/GL08020101.do?_toGL08020101_&tstatCode=000001039448&requestSender=search/, accessed on 9/30/14).

Unlike the U.S. and many European countries, where nonmarital childbearing is common, the increase in single-parent families in Japan is due almost entirely to increases in divorce. The number of divorces increased from 141,689 in 1980 to a peak of 289,836 in 2002 before falling to 235,406 in 2012 (National Institute of Population and Social Security Research 2014) and roughly one in three marriages is projected to end in divorce (Raymo, Iwasawa, and Bumpass 2004). Currently, about 60% of all divorces involve children and in over 80% of those cases the mother receives full custody of all children (National Institute of Population and Social Security

Research 2014). The proportion of single-mother families formed via divorce increased from 49% in 1983 to 81% in 2011 (Ministry of Health, Labour and Welfare 2012).

Public income support for single mothers in Japan is very limited. Child support policies have, in recent years, been the subject of much discussion and revision, but the basic structure provides three sources of monetary support. The first is a child allowance (*jidō teate*) that covers almost all families with children but provides only a small subsidy of about $50 (5,000 yen) for the first two children and somewhat more for additional children and somewhat more for low-income households (Abe 2008). The second is a means-tested childrearing allowance (*jidō fuyō teate*) that provides employed single mothers with about $400 per month for their first child and small supplements for additional children (Abe and Ōishi 2005; Hertog 2009). The third is public assistance (*seikatsu hogo*), but relatively few single mothers meet the strict eligibility criteria for this benefit (Abe 2003). Single mothers are given priority for in-kind benefits including job training and access to public housing and childcare (Ezawa and Fujiwara 2005), but the overall level of public support is low. Indeed, Japan has one of the lowest expenditures on public assistance among OECD countries (Abe 2003) and recent studies indicate that the post-transfer income of single mothers is actually lower than their pre-transfer income (Abe 2008).

Because public income support is limited, the large majority of Japanese single mothers are employed. In 2011, 85% of single mothers in Japan were in the labor force, the highest figure among OECD countries (OECD 2013). Despite their high rates of employment, single mothers' earnings are low, with over half of single-mother households in Japan living in poverty, also the highest level in the OECD (OECD 2013). According to the 2012 Comprehensive Survey of Living Conditions in Japan, the average annual income of single-mother families was 2.50 million yen, roughly one-third the value for all households with children (http://www.e-

stat.go.jp/SG1/toukeidb/GH07010101Forward.do, accessed on 9/30/14). The limited earnings of single mothers reflects their concentration in non-standard employment, often on a part-time or irregular basis (Abe and Ōishi 2005; Japan Institute of Labour 2003). Opportunities for stable, well-paid, regular employment are limited for the large majority of Japanese women who leave the labor force prior to childbirth and thus have discontinuous work histories (Brinton 2001) and single mothers are further constrained by the fact that expectations of long work hours are common, commute times are often long, operating hours of publicly-provided childcare are limited, and the participation of non-custodial fathers in parenting is minimal (Abe 2008; Zhou 2008).

Evidence regarding the non-economic well-being of single mothers is scarce, but qualitative interview data suggest that mental and physical health concerns are common. Drawing on responses to open-ended questions in a 2006 survey, Abe (2008) provides several examples of women whose long work hours and harsh working conditions led to health problems and, in some cases, hospitalization that exacerbated their financial difficulties. Other examples highlight the emotional stress that single mothers face in dealing with demanding work schedules, childrearing responsibilities, children's behavioral problems, and concerns about frail, aging parents. Although Abe (2008) does not provide any information regarding the prevalence of emotional and physical health problems among single mothers, Raymo (2014) finds that single mothers report significantly lower levels of happiness, self-rated health, and emotional well-being than their married counterparts. Previous research (described in more detail below) suggests that all of these factors may impact the parenting practices of single mothers in ways that contribute to relatively lower levels of well-being among their children.

At the same time, the high prevalence of intergenerational coresidence and associated provision of financial, instrumental, and emotional support presumably offsets some of the disadvantages associated with single parenthood. Several different sources of data indicate that approximately one-third of single mothers coreside with other adults, typically their parents (Ministry of Health, Labour, and Welfare 2012; Nishi 2012; Shirahase and Raymo 2014). Recent studies suggest that this arrangement is beneficial – single mothers who live with other adults (typically parents) are less likely to report difficult economic circumstances, less likely to be in poverty, and more likely to report good health than their counterparts living alone (Raymo and Zhou 2012; Shirahase and Raymo 2014). However, it is also clear that, in many cases, the benefits of coresidence are limited by the precarious economic circumstances of the grandparental generation (Shirahase and Raymo 2014). Attention to the role of coresidence and (grand)parental support is particularly important in Japan given the limited role that non-custodial fathers play in the lives of their children. Only a small proportion of single mothers receive any child support from the father (Ministry of Health, Labour, and Welfare 2005) and data from the 2012 National Survey of Households with Children (described in more detail below) indicate that only 6% of single mothers reported that the father of their children saw the children at least once a week (49% reported no contact between their children and the father).

Single-parent families and child well-being

Research on the well-being of children living with single mothers in Japan is very limited. The large body of related research in the U.S. thus provides a useful theoretical and empirical basis for this study. Because the vast majority of single-mother families in Japan are the result of divorce, I focus particularly on studies of the implications of divorce in the U.S.

Past research has consistently shown that, relative to children living with both biological parents, children whose parents have divorced fare less well on a variety of economic, psychological, educational, and behavioral outcomes. These differences are observed across racial and socioeconomic groups (Hanson 1999). For example, children of divorce complete less education, (McLanahan and Sandefur 1994; Powell and Parcell 1997), earn less (Biblarz and Raftery 1993), and exhibit more behavioral problems, including aggression, early childbearing (Wu and Martinson 1993) and delinquency (Matsueda and Heimer 1987). Others show that children of divorce are more likely to have lower average levels of psychological well-being, e.g., unhappiness, lower life satisfaction, depression, and anxiety (Amato and Booth 1997; Amato and Sobolewski 2001; Cherlin, Chase-Lansdae, and McRae 1998; Ross and Mirowsky 1999). Most studies find that the magnitude of these differences is not large and stress the importance of recognizing that, regardless of parents' divorce experience, the vast majority of children do not experience negative outcomes such as depression, teen pregnancy, and school dropout (Amato and Keith 1991; McLanahan and Sandefur 1994). Nevertheless, these findings are robust, having been replicated across multiple studies using a variety of data sources on multiple cohorts.

Attempts to understand the causes of these observed differentials have primarily emphasized the role of economic resources and a range of factors that affect the quality of parenting, including increased work hours, elevated stress, compromised health, and reduced social capital (e.g., Amato and Booth 1991; Biblarz and Gottainer 2000; McLanahan and Sandefur 1994). Economic resources facilitate investment in children's educational development and recreation activities and are positively correlated with children's educational and behavioral outcomes (e.g., Duncan and Brooks-Gunn Eds. 1997; Duncan, Yeung, Brooks-Gunn, and Smith 1998; Thomson, Hanson, and McLanahan 1994). The decline in mothers' economic resources following divorce

and the limited financial contributions of non-custodial fathers (Teachman and Paasch 1994) contribute to the relatively unfavorable economic circumstances of single-mother families (Ellwood and Jencks 2004; Grall 2013), which in turn explain much of the observed differences in children's outcomes by family structure (Carlson and Corcoran 2001; McLanahan and Sandefur 1994; Smith, Brooks-Gunn, and Klebanov 1997).

Changes in parenting style, especially the reduction in effective monitoring of children following the loss of one parent (Astone and McLanahan 1991; Thomson McLanahan, and Curtin 1992), are also important (Amato 2005; Mclanahan and Sandefur 1994; Thomson, Hanson, and McLanahan 1994). The absence of a spouse's earnings and the relatively limited earnings potential of many single mothers combine to generate economic stress and, in the context of limited public income support, necessitate relatively long work hours. Economic stress is associated with less effective parenting (Conger et al. 1992) while long work hours limit the time available for children and contribute to emotional strain that is thought to result in less-engaged and inconsistent parenting (Jackson, Brooks Gunn, Huang, and Glassman 2000; Milkie et al. 2004). Because many single mothers have limited access to stable, rewarding employment (Ellwood and Jencks 2004), exposure to precarious, inflexible, unsatisfying work may also contribute to stress and other emotional health problems that compromise parenting quality. Differences in parenting quality may also reflect more direct, shorter-term increases in maternal depression following divorce (Amato 2000; Meadows, McLanahan, and Brooks-Gunn 2008) or the selection into single-parent families of parents whose personality traits or stressful life experiences make them less effective parents (e.g., Amato 2005).

These findings underlie concern that declining public income support and increases in the amount of time that single mothers devote to work and commuting following welfare reform in

the U.S. may have adverse implications for children's well-being (Dunifon, Kalil, and Bajracharya 2005; Gennetian et al. 2004; Huston 2002). They also suggest that the children of single mothers may be particularly disadvantaged in settings, like Japan, where employment circumstances are particularly stressful (e.g., precarious employment, long hours, shift work, irregular hours) and the financial and parenting support provided by non-custodial fathers is very limited.

When considering the implications of divorce and single parenthood for children's well-being, it is important to remember that not all single mothers are "lone mothers." In the U.S., as in Japan, a sizable proportion of single mothers live with other adults and a number of studies have examined the ways in which coresidence and associated family support may moderate relationships between single parenthood and children's well-being. Results indicate that the well-being of children of unmarried mothers who cohabit with a romantic partner is no different from that of children living only with unmarried mothers (Brown 2004; Dunifon and Kowalewski-Jones 2002; Thomson, Hanson, and McLanahan 1994), but coresidence with grandparents does appear to be positively associated with the well-being of both single mothers and their children (Aquilino 1996; Deleire and Kalil 2002; Dunifon and Kowalewski-Jones 2007; Gordon et al. 1997; Mutchler and Baker 2009). For example, Deleire and Kalil (2002) found that children from multigenerational single-parent families have educational outcomes that are similar to those of children from two-parent families and are actually less likely to smoke or drink than their counterparts in two-parent families. The posited benefits of intergenerational coresidence include shared economic resources, economies of scale, access to childcare, and higher levels of social and emotional support (Casper and Bianchi 2002; Sigle-Rushton and McLanahan 2002).

These findings suggest that family support may play an important role in mitigating the linkages between economic, temporal, and psychological disadvantage and the parenting practices of single mothers, thereby reducing differences in the well-being of children from single-parent and two-parent families. The prevalence of intergenerational coresidence and its relationships with well-being highlight the problems with treating single-mother families as a homogeneous group and the importance of considering the living arrangements of single mothers when assessing relationships between trends in family structure and inequality or the intergenerational transmission of disadvantage. This may be particularly true in "strong family" countries or family-oriented welfare states (Dalla Zuanna and Micheli eds. 2004) like Japan where intergenerational coresidence and associated family support is common and more normative than in the U.S.

DATA AND METHOD

Sample

I use data from the first two rounds of the National Survey of Households with Children (*Kosodate Setai Zenkoku Chōsa*). Conducted in November of 2011 and 2012 by the Japan Institute for Labour Policy and Training, this survey (NSHC, hereafter) is a national survey of households that include parents and their minor children, with an oversample of single-parent households. In each year, two-stage stratified sampling based on data from the Basic Resident Registry (*jūmin kihon daichō*) produced a target sample of 2,000 two-parent households and 2,000 single-parent households. Interviewers delivered a self-administered questionnaire to respondents' homes and returned to collect the completed questionnaires at a pre-specified date and time. In 2011, completed questionnaires were collected from 2,218 respondents, for a 56% response rate (61% for married parents and 50% for single parents). In 2012, the corresponding numbers were 2,201 respondents for a 55% response rate (61% for married parents and 49% for

single parents). A preference for information from mothers was emphasized both by the interviewer and in the survey instrument, but small numbers of questionnaires were completed by fathers (131 married fathers and 151 single fathers). I exclude these respondents from the analyses, leaving a sample of 4,137 for the two years.

The response rates of 55-56% are similar to those of other recent sample surveys in Japan but are low enough (especially among single parents) to raise concerns about the representativeness of the resulting sample. However, comparison of the characteristics of the 2011 NSHC respondents with two large, nationally-representative surveys conducted by the Ministry of Health, Labour and Welfare in 2011 demonstrates that the samples are quite similar (Raymo, Park, Iwasawa, and Zhou 2014). In both the descriptive and multivariate analyses presented below, I use post-stratification weights that reflect the intentional oversampling of single-mother households as well as their lower response rate. These weights, provided by the Japan Institute for Labour Policy and Training, allow for generalization to the population of mothers of minor children.

Limiting my focus to mothers with at least one coresident child age 18 or younger results in an analytic sample of 3,879 (1,233 unmarried mothers and 2,646 married mothers). Of the 258 mothers I excluded from the total sample, 82 reported no coresident children, 7 reported that their youngest coresident child was at least 19 years old, and 169 did not provide information on coresident children's ages. The large majority (81%) of the unmarried mothers were divorced, with small percentages widowed (8%), never married (5%), or with missing data on the pathway to single parenthood (6%).

Variables

Children's current health and school performance was assessed by mothers. Because assessments were provided for each child, I treat children as the unit of analysis rather than mothers (i.e., I construct one record for each child listed in the child roster).

Health. In the child roster, mothers were asked about the current health of each child. The response options were: healthy, minor illness, serious/chronic illness, disability. The option "disability" was only included in the 2012 survey. The question does not distinguish between physical health and mental health so it is likely that mothers considered both when responding. Because the large majority of children is described by their mothers as healthy, I dichotomize this variable to distinguish healthy children from children with any health problems. Creating one record for each child enumerated in the household roster results in an analytic sample of 7,108 children.

School performance: The child roster also asked mothers to indicate how well their children are doing in school. The response options were: Good, pretty good, average, not so good, not good. This question was asked only about children in elementary, middle, or high school at the time of the survey, resulting in a sample of 4,333 children.

S*ingle parenthood* is a dichotomous variable equal to one for women with at least one child age 18 or younger who reported that they were not currently married.

Coresidence with parents is a 0-1 indicator distinguishing those who live with their parents or parents-in-law from those who do not. I identified mothers coresiding with parents(-in-law) from a question that asked respondents to identify their relationship to all individuals with whom they reported coresiding. The wording of this question allows me to include both single mothers living with parents in the same household and single mothers coresiding with parents but living

in separate households (a common strategy for maintaining eligibility for means-tested benefits – Raymo and Zhou 2012). To facilitate interpretation of results, I use a categorical representation of the cross-classification of single parenthood and intergenerational coresidence rather than the equivalent, but less intuitively clear, conventional two-way interaction. The four categories of marital status and living arrangements are: married and living apart from parents (the omitted, reference group in the multivariate models), married and coresiding with parents, unmarried and living apart from parents, unmarried and coresiding with parents.

Background variables: In all models, I control for mother's age, educational attainment, child's age, and the number of coresident siblings. For both children and their mothers, age is a continuous measure and mother's education is a categorical indicator of highest degree attained: junior high school, high school, vocational school, junior college, university or more, and a category for those with missing data on this question. The number of coresident siblings ranges form 0-3.

Economic circumstances: To evaluate the posited role of economic deprivation of single mothers, I include measures of household income, savings behavior, and an indicator of need. Equivalent household income is reported annual pre-tax household income (from all sources) divided by the square root of household size to account for income sharing and economies of scale. Because a relatively large number of respondents did not respond to this question (n = 400 or 11% of the analytic sample), I collapsed non-missing values into quartiles and added a fifth category for missing values. The first (lowest) quartile thus corresponds approximately to a standard measure of relative household poverty. Savings behavior is a six-category indicator of the frequency with which respondents report saving. The categories are: almost every month, sometimes, rarely, never, spending down savings, and missing. Need is a 0-1 indicator of the inability to afford food

and clothing. Respondents were asked how often in the past year, they were unable to buy necessary food or clothing. I construct a single measure that distinguishes respondents who responded "frequently" to either question from those who did not.

Work circumstances: To evaluate the posited role of stressful work conditions in contributing to lower levels of well-being among the children of single mothers, I include measures of the type of employment, work hours, and work-family conflict. Employment type is a five-category measure of respondents' current employment: not working, part-time work, non-standard employment, regular employment, and self-employed or other types of employment. Mothers' work hours are the reported number of hours per week at work (including overtime). This measure is equal to zero for those who were not employed at the time of the survey. Based on preliminary analyses indicating a non-linear relationship with children's health and school performance, I collapsed non-zero values of work hours into quartiles (mean work hours for the four quartiles are 18, 33, 41, and 51, respectively). Work-family conflict is an index of mother's stress calculated by summing responses to three questions asking respondents how often during the past year they felt (a) so tired from work that they could not do necessary housework and childcare, (b) that long work hours made it difficult to do housework and childcare, and (c) that the burden of domestic responsibilities made it difficult to concentrate at work. The six response options range from never to every day, resulting in an index that ranges from 0-15 ($\alpha = .80$). This measure is equal to zero for mothers who did not work for pay in the previous year.

Emotional health and stress: Mothers' emotional health is measured using a version of the Center for Epidemiologic Studies Depression (CES-D) scale. In 2011, the scale contained seven items and in 2012, it contained 10 items. Because only five items were asked consistently across the two survey years, we use those items to form a modified CES-D measure. These questions

asked mothers how many days during the past week they, could not concentrate, felt depressed, felt that everything was an effort, had trouble sleeping, and enjoyed life (index values range from 0-15 and $\alpha = .76$). In the analyses presented below, I rescaled this measure so that those with the best mental health have the highest value (0) and those with the worst mental health have the lowest value (-15). A second measure of health is self-rated health. In both years, respondents were asked to evaluate their overall health on a standard five-point scale ranging from poor (1) to excellent (5). Finally, I include an index of stressful life events reported by respondents. In both surveys, respondents were asked whether they had ever experienced the following life events: parents' divorce, receiving welfare as a child, mother's death, father's death, physical abuse by parents, physical abuse by spouse, excessive physical punishment of their child(ren), neglecting their child(ren), postpartum/childrearing depression, physical abuse of their child(ren), thoughts of suicide.

Method

I estimated a series of five regression models for each measure of children's well-being. Models for health problems were estimated via logistic regression and models for children's school performance were estimated using ordered logistic regression. In the first model, I included only the indicator of single motherhood, child's age, mother's age, education, coresidence with parents, and the number of siblings in the household. This model provides a baseline estimate of the extent to which the well-being of children living with single mothers differs from that of their counterparts living with married mothers (research question 1). The second model addresses research question 2 by extending Model 1 to include the four-category cross-classification of single-parenthood and coresidence with parents. In subsequent models, I add the measures of income, savings, and economic need (Model 3), mothers' employment type, work hours,

irregular work, and work-family conflict (Model 4), and mother's emotional health, self-rated health, and experience of stressful life events (Model 5). In these models, my primary interest is in assessing the extent to which controlling for the additional covariates attenuates the posited negative relationship between single motherhood and children's well-being and evaluating the role of intergenerational coresidence in moderating that relationship.

RESULTS

In Table 1, I present descriptive characteristics of the sample by marital status. Because the samples for the two outcomes are different, I present figures separately for each sample. The first two rows indicate that single mothers report worse health and worse school performance (higher values indicate lower academic performance) for their children. These differences are statistically significant.

The two groups of mothers are similar in age but differ in many other ways. Looking at the larger sample (for analysis of children's health), we see that children of single mothers are older on average (11 vs. 9 years old) and have a slightly lower number of coresiding siblings (0.91vs. 1.24). The single mothers of these children also have lower educational attainment (56% of single mothers vs. 41% of married mothers have a high school education or less). Consistent with the results of existing research summarized above, single mothers face significantly greater economic disadvantage than their married counterparts. Single mothers have significantly lower size-adjusted household income (46% vs. 15% were in the lowest income quartile), are more likely to report never saving or spending down savings (39% vs. 18%) and are more likely to report frequent economic need (9% vs. 4%). Single mothers employment circumstances also differ from their married counterparts. They are much less likely to be not working (17% vs. 37%), more likely to be in the highest quartile of work hours (25% vs. 12%), and report

significantly higher levels of work-family conflict (5.97 vs. 3.83). Also consistent with previous research, single mothers report lower levels of both emotional health (-4.29 vs. -3.03 on the CES-D measure) and self-rated health (20% vs. 9% were in fair or poor health). Interestingly, single mothers also report significantly more stressful life events (1.25 vs. 0.73). Tabulation of specific life events (not shown) indicates that single mothers are more likely than their married counterparts to report that their parents divorced, that their (ex-)husband physically abused them, and that they have contemplated suicide.

[Table 1 about here]

Table 2 presents the results for mothers' reports of children's health in the form of log-odds ratios. The first column shows that the odds of reporting a health problem are 68% higher for single mothers than married mothers (i.e., exp(0.52) = 1.68). Model 2 shows that single mothers report worse health for their children regardless of living arrangements. Both groups of single mothers are significantly different from married mothers in nuclear families and post-estimation Wald tests indicate that both groups also report significantly worse health for their children than married mothers in three-generation households (the difference between the reports of unmarried and married mothers in three-generation households is significantly different from zero at $p < .10$). The coefficient for lone mothers is larger than that for single mothers coresiding with parents but the difference between these two groups is not statistically meaningful. In Model 3, the health disadvantage of children living with single mothers and grandparents disappears. This is consistent with evidence from earlier studies of the economic disadvantage faced by both generations of adults in these households (Shirahase and Raymo 2014). The reported health of children living with lone mothers remains worse than that of their counterparts in two-parent nuclear families, but is not different from children in the other two groups. Mothers in the lowest

income quartile and those who cannot save on a regular basis report worse health among their children and this contributes to the attenuation in the health disadvantage of living with single mother. In contrast to stressful work circumstances (whose introduction in Model 4 does not alter results), the apparent health disadvantage of children living with lone mothers disappears in Model 5 when measures of mothers health and the index of stressful life events are introduced. In conjunction with economic disadvantage, worse self-rated health and the higher level of stressful life events experienced by lone mothers explains the higher reported prevalence of health problems among their children.

[Table 2 about here]

Table 3 presents the results for mothers' reports of children's school performance in the form of log-odds ratios from ordered logistic regression models (higher values indicate worse grades). The first column shows that the odds of reporting that a given child has average grades rather than pretty good grades (or is in category n+1 rather than category n more generally) are 60% higher for single mothers than married mothers (i.e., exp(0.47) = 1.60). Similar to the results for children's health, the results of Model 2 indicate that the children of unmarried mothers are reported to do less well in school regardless of living arrangements (relative to the children of married mothers in nuclear families). The same is true if the reference category is changed to the children of married mothers in three-generation families (the difference between the children of unmarried and married mothers in three-generation families is significantly different from zero at $p < .10$). In contrast to the results for children's health, the results of Model 2 also show that the reported school performance of children living with lone mothers are also significantly worse than for children living with single mothers and grandparents. Subsequent models indicate that the lower levels of academic performance among children living with

unmarried mothers and grandparents reflect lower levels of economic well-being and more stressful employment circumstances in these households. After controlling for mothers' economic circumstances in Model 2 (especially the inability to save) and stressful work circumstances in Model 3 (especially higher levels of work-family conflict), the school performance of children living with single mothers and grandparents is no different than that of their counterparts living with married parents regardless of living arrangements. Results of Model 5 show that, in contrast to the results for health problems, the school performance of children living with lone mothers remains significantly worse than that of children living with married parents (regardless of living arrangements) after accounting for differences in economic circumstances, employment, and emotional health or stress. Furthermore, the difference between the reports of lone mothers and single mothers coresiding with parents remains statistically significant at $p < .10$.

[Table 3 about here]

DISCUSSION

Currently, one in ten children in Japan lives with a single parent (typically the mother), but little is known about how these children fare relative to their counterparts living with married parents. Anecdotal evidence and qualitative data (Abe 2008) suggest that the children of single mothers may be particularly disadvantaged but the data required to examine this relationship at the national level have not been available. This is an important limitation in light of the large body of evidence from the U.S. demonstrating that children of single mothers fare less well and growing concern about poverty and the intergenerational transmission of disadvantage in Japan.

In this paper, I used data from two recent national surveys with large oversamples of single mothers to examine how the children of single mothers fare on two dimensions of well-being –

mothers' reports of children's health and school performance. For each of these measures, I have considered how differences between the children of single mothers and married mothers may depend upon the presence of coresident grandparents and have evaluated several possible explanations for lower levels of well-being among the children of single mothers. Findings allow for an important advance in our understanding of the implications of the steady increase in divorce and single-parent families, but are limited by the fact that the available measures of children's well-being are based on mother's reports rather than objective indicators of health and academic performance.

Results indicate that the children of single mothers fare less well than children of married mothers. In both cases, a simple comparison of the two groups indicates that the children of single mothers have lower levels of well-being than children living with both parents (regardless of whether grandparents are present or not). Reports of worse child health among single mothers do not depend on the presence of grandparents, but lone mothers report significantly worse school performance of children relative to unmarried mothers in three-generation households.

Efforts to assess the factors that contribute to lower levels of well-being among the children of single parents suggest that economic difficulties are particularly important. For both indicators of well-being, differences between single mothers coresiding with parents and married mothers lost statistical significance when economic characteristics were introduced in Model 3. The higher number of reported worries among single mothers coresiding with parents and the lower academic performance among children living with lone mothers remained statistically significant but other differences disappeared. Interestingly, the inability to save regularly appears to be more important than income per se for understanding differences in children's well-being.

In conjunction with the growing body of evidence on the severe economic disadvantages faced by single mothers in Japan, the results of this study suggest that divorce and the associated rise in single-mother families may be an important mechanism through which patterns of social and economic disadvantage are reproduced across generations. The importance of economic need and work-related stress in contributing to lower levels of child well-being is important in light of ongoing efforts to reduce welfare dependence among single mothers by promoting employment. The implications of recent policy shifts for children's well-being has received little attention.

The apparent benefits of intergenerational coresidence for the health and academic performance of children from single-mother families is of potentially broad importance. As in Japan, increasing rates of divorce (and, in some cases, more nonmarital childbearing) are contributing to growth in single-mother families in many societies where public support for families is relatively limited and traditions of family support are strong (e.g., southern Europe, east and southeast Asia, Latin America). Considering the well-documented negative relationships between childhood experience of parental divorce and multiple dimensions of well-being across the life course (e.g., Amato 2005), these changes will presumably have important implications for social and economic inequality within and across generations, as in the United States (McLanahan & Percheski, 2008). In this context, evaluating the role of intergenerational support via coresidential living arrangements in mitigating the disadvantages associated with single parenthood and understanding the conditions under which coresidence is more or less beneficial is an important task both for family scholars and for those interested in understanding reciprocal relationships between changing family behavior and trends in social and economic inequality.

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Table 1: Descriptive statistics, by family structure

	Single-mother family		Two-parent family		Single-mother family		Two-parent family	
Variable	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Children's health problems	0.11	0.32	0.06	0.24				
Children's school performance					2.77	1.07	2.45	0.97
Coresiding with parents	0.33		0.23		0.31		0.24	
Age	11.21	4.59	9.14	5.22	40.65	5.84	41.81	5.30
Mother's age								
Mother's Educational Attainment								
Junior high school	0.11		0.04		0.10		0.03	
High School	0.45		0.37		0.44		0.41	
Vocational school	0.15		0.15		0.15		0.15	
Junior college	0.19		0.25		0.19		0.26	
University	0.08		0.16		0.08		0.14	
Missing	0.03		0.02		0.03		0.02	
Number of co-residing siblings	0.91	0.77	1.24	0.79	0.93	0.75	1.29	0.78
Equivalent household income								
First quartile	0.46		0.15		0.46		0.13	
Second quartile	0.16		0.28		0.17		0.25	
Third quartile	0.05		0.30		0.05		0.33	
Fourth quartile	0.18		0.19		0.17		0.20	
Missing	0.15		0.09		0.15		0.09	
Savings behavior								
Saving almost every month	0.18		0.44		0.19		0.44	
Saving sometimes	0.21		0.20		0.19		0.20	
Rarely saving	0.19		0.16		0.20		0.16	
Not saving at all	0.29		0.12		0.29		0.12	
Using savings	0.10		0.06		0.09		0.06	
Missing	0.03		0.02		0.03		0.02	
Frequently unable to afford food or clothing								
No	0.91		0.96		0.90		0.96	
Yes	0.09		0.04		0.10		0.04	
Type of employment								
Not working	0.17		0.37		0.16		0.29	
Part-time	0.35		0.31		0.35		0.37	
Non-standard	0.12		0.05		0.11		0.05	
Regular	0.32		0.19		0.33		0.20	
Self-employed/other	0.05		0.08		0.05		0.09	
Hours per day working								
Zero	0.17		0.37		0.16		0.29	
First quartile	0.11		0.22		0.10		0.26	
Second quartile	0.20		0.17		0.20		0.18	
Third quartile	0.27		0.11		0.27		0.11	
Fourth quartile	0.25		0.12		0.26		0.15	
Missing	0.01		0.01		0.01		0.01	
Work-family conflict	5.97	4.23	3.83	4.12	5.91	4.16	4.17	4.07
CES-D	-4.29	3.45	-3.03	2.80	-4.35	3.44	-3.17	2.90
Self-rated health								
Poor	0.03		0.01		0.03		0.01	
Fair	0.17		0.08		0.19		0.09	
Average	0.42		0.39		0.42		0.40	
Good	0.16		0.18		0.16		0.18	
Excellent	0.22		0.35		0.20		0.32	
Stressful life events	1.25	1.50	0.73	1.15	1.24	1.49	0.71	1.14
N	1,744		4,650		1,356		2,968	
Weighted Proportion	0.09		0.91		0.11		0.89	

Table 2: Results of logistic regression models of children's health problems (log-odds ratios)

Variable	Model 1 Coeff.	Model 2 Coeff.	Model 3 Coeff.	Model 4 Coeff.	Model 5 Coeff.
Single mother[a]	0.52**				
Coresiding with parents[a]	-0.01				
Marital status and living arrangements					
Married, nuclear family (omitted)		0.00	0.00	0.00	0.00
Married, coresiding with parents		0.02	0.08	0.10	0.12
Lone mother		0.58**	0.36*	0.41*	0.25
Single mother, coresiding with parents		0.40*	0.26	0.30	0.25
Age	0.01	0.01	0.01	0.02	0.01
Mother's age	-0.02	-0.02	-0.02	-0.02	-0.02
Mother's Educational Attainment					
Junior high school	0.29	0.29	0.16	0.11	-0.12
High School (omitted)	0.00	0.00	0.00	0.00	0.00
Vocational school	-0.17	-0.17	-0.11	-0.12	-0.09
Junior college	-0.20	-0.20	-0.11	-0.12	-0.03
University	-0.14	-0.14	-0.06	-0.07	0.01
Missing	0.03	0.03	0.03	0.05	0.14
Number of co-residing siblings	-0.09	-0.09	-0.14#	-0.16#	-0.16*
Equivalent household income					
First quartile (omitted)			0.00	0.00	0.00
Second quartile			-0.36#	-0.35#	-0.25
Third quartile			-0.29	-0.28	-0.21
Fourth quartile			-0.32	-0.31	-0.26
Missing			-0.40#	-0.43*	-0.41#
Savings behavior					
Saving almost every month (omitted)			0.00	0.00	0.00
Saving sometimes			-0.05	-0.09	-0.11
Rarely saving			0.01	-0.04	-0.18
Not saving at all			0.36#	0.29	0.14
Using savings			0.57**	0.50*	0.27
Missing			1.16**	1.15**	1.13**
Frequently unable to afford food or clothing[a]			0.33	0.23	-0.02
Type of employment					
Not working				1.32#	1.03
Part-time				0.46*	0.44*
Non-standard				0.13	0.07
Regular (omitted)				0.00	0.00
Self-employed/other				0.30	0.27
Hours per day working					
Zero (omitted)				0.00	0.00
First quartile				0.50	0.50
Second quartile				0.09	0.14
Third quartile				0.43	0.51
Fourth quartile				0.45	0.53
Work-family conflict				0.07**	0.03
CES-D					-0.01
Self-rated health					
Poor					1.10**
Fair					1.00**
Average					0.67**
Good					0.60**
Excellent (omitted)					0.00
Stressful life events					0.21**

Constant	-1.99**	-1.99**	-1.85**	-2.99*	-3.36*
N (children)	6,390	6,390	6,390	6,390	6,390

**p < .01, *p < .05, #p < .10

Note: a) omitted category is "no"

Table 3: Results of ordered logistic regression models of children's academic performance (log-odds ratios)

Variable	Model 1 Coeff.	Model 2 Coeff.	Model 3 Coeff.	Model 4 Coeff.	Model 5 Coeff.
Single mother[a]	0.47**				
Coresiding with parents[a]	0.05				
Marital status and living arrangements					
Married, nuclear family (omitted)		0.00	0.00	0.00	0.00
Married, coresiding with parents		0.06	0.08	0.07	0.08
Lone mother		0.58**	0.44**	0.41**	0.37**
Single mother, coresiding with parents		0.30**	0.21#	0.14	0.12
Age	0.02*	0.02*	0.02*	0.02#	0.02#
Mother's age	-0.01	-0.01	0.00	-0.01	-0.01
Mother's Educational Attainment					
Junior high school	0.40*	0.40*	0.32#	0.29#	0.16
High School (omitted)	0.00	0.00	0.00	0.00	0.00
Vocational school	-0.33**	-0.33**	-0.28**	-0.31**	-0.30**
Junior college	-0.60**	-0.60**	-0.48**	-0.49**	-0.45**
University	-0.99**	-0.98**	-0.86**	-0.90**	-0.87**
Missing	-0.64*	-0.64*	-0.66*	-0.65*	-0.67*
Number of co-residing siblings	0.05	0.05	0.02	0.02	0.03
Equivalent household income					
First quartile (omitted)			0.00	0.00	0.00
Second quartile			0.12	0.12	0.16
Third quartile			-0.04	-0.05	-0.02
Fourth quartile			-0.07	-0.08	-0.04
Missing			0.22	0.19	0.21
Savings behavior					
Saving almost every month (omitted)			0.00	0.00	0.00
Saving sometimes			0.20#	0.18	0.17
Rarely saving			0.32**	0.29**	0.23*
Not saving at all			0.69**	0.66**	0.58**
Using savings			0.47**	0.46**	0.36*
Missing			0.45	0.43#	0.42#
Frequently unable to afford food or clothing[a]			-0.17	-0.26	-0.35#
Type of employment					
Not working				0.04	-0.08
Part-time				0.20	0.18
Non-standard				0.08	0.06
Regular (omitted)				0.00	0.00
Self-employed/other				0.02	0.02
Hours per day working					
Zero (omitted)				0.00	0.00
First quartile				-0.19	-0.17
Second quartile				-0.32	-0.25
Third quartile				-0.22	-0.17
Fourth quartile				-0.06	0.02
Work-family conflict				0.04**	0.01
CES-D					-0.05**
Self-rated health					
Poor					-0.10
Fair					0.05
Average					0.22*
Good					0.17#
Excellent (omitted)					0.00
Stressful life events					0.09*

Cut 1	-1.77	-1.79	-1.45	-1.45	-1.25
Cut 2	-0.25	-0.27	0.08	0.09	0.31
Cut 3	1.91	1.90	2.28	2.30	2.53
Cut 4	3.21	3.20	3.58	3.61	3.85
N (Elementary, jr. high school age children_)	4,320	4,320	4,320	4,320	4,320

**p < .01, *p < .05, #p < .10
Note: a) omitted category is "no"