Parenting Stress and Parent Support Among Mothers With High and Low Education

Alison Parkes, Helen Sweeting, and Daniel Wight
University of Glasgow

Parenting stress (the stress associated with raising a child) makes optimal parenting more difficult (Dix, 1991; Deater-Deckard, 1998), and has negative consequences for children's development (Pesonen et al., 2008; Cappa et al., 2011). Current theorizing and evidence suggest that parenting stress might be greater among parents from both low and high socioeconomic positions (SEP) compared with those from intermediate levels, but that this U-shaped distribution might be generated by different types of stressors in the two groups. Models emphasizing the key role of economic resources for children’s development suggest material hardship may lead to strained family relations, including parenting stress (Conger & Donnellan, 2007), and a recent U.S. national population study (Raphael et al., 2010) found greater parenting stress among low-income and low-educated groups of parents. In contrast, models of job demands and stress related to higher status point to the costs of higher SEP in terms of greater intrusion of employment into home life (Schieman et al., 2009). Highly educated parents may also find it less easy to adjust to the new parental role, following greater investment in a career (Noma-guchi & Brown, 2011). Strains related to employment might therefore produce higher parenting stress among high SEP groups.

Although stressors relating to lack of material resources and the demands of employment and career may combine to produce a U-shaped socioeconomic distribution of parenting stress (Figure 1a), the role of functional and emotional support for parents is missing from these current perspectives. Deficits in support for parents may be seen as representing "the other side of the coin" to a model based on stressors (Figure 1b). Additional stressors among high- and low-SEP groups create extra, although different, support needs when compared with intermediate SEP groups. The increased burden of needs among high- and low-SEP groups may in turn produce support deficits, leading to greater parenting stress. Support has commonly been conceived as having both a direct, as...
In the second (buffering) model, we would expect the effects of support (so far as we are aware) been investigated directly in a general population, although a study of families with school-age children at risk of behavior problems found that limited social support mediated links between low income and parental depression, which in turn was linked to less effective parenting (Lee et al., 2009). We know little about whether support deficits contribute to parenting stress among high SEP parents. However, because both partners in high SEP families are more likely than low SEP parents to resume full-time employment careers after the birth of a child, many high SEP parents will be unable to use a full-time working partner for childcare. This may be combined with perceived inadequate access to formal childcare; in the United Kingdom, 30% of high income families (>£45,000, around $71,000) reported insufficient local childcare places in 2011 (Ipsos MORI and Department for Education, 2013), and levels of employer-subsidized childcare are low (Hein & Cassirer, 2010). It therefore seems that some support deficits, particularly related to childcare, could lead to elevated parenting stress levels among high SEP families.

The main research aim of this study is to understand whether limited support helps to explain parenting stress among high- and low-SEP groups. In examining different support pathways for these groups, it will be helpful to consider the particular needs of migrants and single parents. There is evidence from population studies of US families with children of all ages (Raphael et al., 2010), and Swedish families with infants (Sepa et al., 2004), that parenting stress is greater in both migrants and single parents, and indications that these different population groups are associated with unique support deficits (see further below). In the United Kingdom, migrants and single parents are unequally distributed across SEP, constituting sizable population subgroups within parents of either high or low SEP. Single parenthood is most prevalent among low SEP groups (Brady & Burroway, 2012), but labor shortages have led to disproportionate immigration of workers at both ends of the SEP spectrum (Rienzo, 2013).

We continue by reviewing the literature on sources of parent support and parenting stress, focusing on support from grandparents, friends, and health professionals, and then we consider the literature on access to support according to single-parent and migrant status. We conclude with an outline of the current study and research hypotheses.
Sources of Parent Support and Parenting Stress

Grandparents are likely to be the main source of support for many parents, providing emotional as well as financial and instrumental assistance (Thoits, 2011). Despite shifts toward greater provision of formal childcare in the United Kingdom since the 1998 National Childcare Strategy, almost two thirds of grandparents provide some form of childcare, with grandparents playing a larger role than grandfathers (Wellard, 2011; Ipsos MORI and Department for Education, 2013). Nonetheless, surprisingly little is known about the impact of grandparent support on maternal health aside from studies of high-risk populations that cover school-age children. A study of children with Down syndrome found intergenerational contact and co-residence may be a source of tension and conflict (Hastings et al., 2002). A study of families of a child with a developmental disability found effects of grandparent support on maternal stress varied according to the type of support received, and which grandparent was responsible (Trute, 2003), but studies of general populations are lacking.

Contact with other sources of support, such as friends, may also reduce parenting stress. In part, this may derive from childcare and other instrumental support, although stress reduction is also likely to come from other parents with similar experiences providing empathy and advice, as well as modeling coping strategies (Thoits, 2011). A study of families of a child with autism spectrum disorder suggests the importance of both the quality and number of social relationships for mothers’ parenting stress (Benson, 2012), but again studies of general populations appear lacking.

Effects of professional sources of parenting support on parenting stress also appear absent from general population studies. Although a study of families of teenagers with severe intellectual disabilities found that though informal sources of support were associated with greater parental well-being, use of a wide range of professional support services was not (White & Hastings, 2004).

Support Deficits Associated With Single-Parenthood and Migrant Status

Single parenthood has been associated with lower access to emotional support, over and above the effects of poverty, in a high-risk US sample (Harknett & Hartnett, 2011). This could partly reflect deficiencies in support from the nonresident partner (Kalil et al., 2005), but also conflict in relationships with other family members (Manji et al., 2005) and smaller support networks from family and friends (Cairney et al., 2003; Attree, 2005). In the United Kingdom, low-income groups and single parents rely much more on grandparents for childcare than do those from more advantaged backgrounds (Rutter & Evans, 2011). However, separation of the child’s parents weakens ties with paternal grandparents (Uhlenberg & Hammill, 1998), resulting in a matriarchal bias to remaining grandparent contact (Lussier et al., 2002). If a single mother is herself the child of a single parent, contact with the paternal grandfather may also be missing (McLanahan & Booth, 1989). A restricted grandparent network might result in lower overall support, whereas greater dependency on maternal grandparents might produce strain (Greenfield, 2011). Despite these likely limitations to informal support, single mothers from low SEP groups may be least likely to access professional help, being unaware of what is available, feeling professionals would not really be able to help, and fearful of interference and stigma (Attree, 2005). We know little about whether these likely differences in access to support are associated with higher levels of parenting stress found among single parents with young children (Sepa et al., 2004).

Migrants may experience difficulties in maintaining regular contact with other family members, which are in turn associated with lower perceived informal support (Uhlenberg & Hammill, 1998; Turney & Kao, 2009). In the United Kingdom, immigrant parents are less likely to be able to use grandparents for childcare as nonmigrant parents (Rutter & Evans, 2011). Access to professional support might also be compromised by language and cultural barriers (Earner, 2007). As with single parents, it is not yet clear whether these likely support deficits are associated with higher levels of parenting stress found among migrants with young children (Sepa et al., 2004).

The Current Study

Our study begins by examining associations between SEP and parenting stress among mothers of 10-month-old children from a nationally representative birth cohort in Scotland, United Kingdom. We use maternal education level as an indicator of SEP. Although correlated with other SEP indicators, such as household income or occupational class, education has the advantages of relative stability and of including never-employed mothers. In addition, we expect high maternal education to be more strongly related to a mother’s own employment- and career-related demands compared with partner or family SEP indicators (Nomaguchi & Brown, 2011). These considerations lead us to expect that high maternal education will be a stronger predictor of high parenting stress than other SEP indicators.

As for the United Kingdom as a whole, low SEP groups in Scotland contain a relatively high share of lone parents (Scottish Government, 2014). Both high and low SEP groups in Scotland include relatively high shares of overseas migrants (Office of the Chief Researcher & Office of the Chief Economic Adviser, 2010), and high SEP groups contain a relatively high share of internal migrants from the rest of the United Kingdom (McCollum, 2011). Because the support needs of migrants and lone parents are likely to embody unique features, and since these structural characteristics are likely to characterize sizable population subgroups among high- and low-SEP parents, we subdivide high- and low-educated mothers according to these additional structural factors. Subdivisions permit us to explore both shared and different features of support for migrants at either end of the SEP spectrum, as well as ascertain the extent to which migrants’ needs resemble those of nonmigrant high- and low-SEP groups. Among low SEP groups, it will permit us to explore possible differences between the special needs of lone parents and those of migrants. Although ideally we would want to examine all combinations of migrant and lone parent status within both high- and low-educated groups of mothers, in practice subgroup size is a dominant consideration.

Hypothesis 1: Maternal parenting stress will differ significantly according to SEP as represented by educational qualifications, and will differ according to single-parenthood and migrant status.
We expect high- and low-educated mothers to be more likely to report high parenting stress, compared with groups with intermediate educational qualifications. We also expect migrant and single-parent status to predict parenting stress.

**Hypothesis 2:** The unavailability of support will help explain high levels of parenting stress for mothers with particular combinations of educational level and migrant status, single-parent status, or both.

We expect low-educated mothers, particularly single parents, to have smaller social networks and perceive more barriers to professional support. We expect high-educated mothers’ greater needs for childcare while they are at work to cause particular difficulties for migrants to Scotland, because of geographical distance from other family members. However, migrants among both high- and low-educated groups may all have difficulty accessing informal support not specifically related to childcare, such as emotional support.

**Method**

**Data Set**

Data were from the second birth cohort of the Growing Up in Scotland study, a nationally representative cohort of families with children born between 1st March, 2010 and 28th February, 2011 (ScotCen Social Research, 2013). The named study population was derived from child benefit records (a universal benefit with a 97% take up, at the time of the survey). Home interviews with the child’s primary caregiver were carried out in 2011–2012, when the child was 10 months old, by trained researchers using Computer Assisted Personal Interviewing. Data collection was subject to medical ethical review by the Ethics Committee of the School of Social and Political Sciences at the University of Edinburgh. Of all eligible families identified, \( N = 6,127 \) (64%) completed an interview. The analysis data set was limited to 5865 cases where the child’s natural mother provided information (exclusions \( N = 127 \), 2% of families contacted) and the child was a singleton birth (further exclusions \( N = 135 \), 2% of families contacted).

**Measures**

**Maternal parenting stress** was self-reported using an abbreviated version of the Parental Stress Scale (Berry & Jones, 1995). Mothers indicated agreement with three items: “Having a child leaves little time and flexibility in my life,” “It is difficult to balance different responsibilities because of my child,” “Having a child has meant having too few choices and too little control over my life.” Responses used a 5-point scale from (1) “strongly agree” to (5) “strongly disagree”. Factor analysis indicated items loaded on one factor accounting for 57% of the variance (loadings 0.7–0.8). Mean scores (Cronbach’s alpha = .62) were used here, after reverse-coding the scale so that high scores denoted higher stress.

**Maternal education** was classified using the Scottish Credit and Qualifications framework ([http://www.sqa.org.uk/sqa/4596,557.html](http://www.sqa.org.uk/sqa/4596,557.html)) as (a) degree-level academic and vocational qualifications, (b) Scottish Highers and upper level vocational qualifications, (c) upper level Scottish Standard grades and intermediate level vocational qualifications, (d) lower level Scottish Standard grades and vocational qualifications and (e) no qualifications. Group 2 qualifications are those required for university entry, whereas Groups 3 and 4 represent qualifications typically attained by the minimum school leaving age. Initial exploration indicated no differences in parenting stress levels between Groups 2 and 3, and between Groups 4 and 5. These pairs were therefore combined to give a three-part classification of educational level: high, intermediate and low. Three quarters (76%) of high-educated mothers were in professional or managerial occupational classes, and 70% were in households categorized as being in the top 40% of equivalized income (≥ £26,000, around $41,000). In contrast, most low-educated mothers were employed in semiroutine or routine occupations (56%) or had never worked (24%), and 79% were in households with an income in the bottom 40% (< £17,000, around $27,000). **Single-parent status** was derived from questions about whether the mother had a partner, and whether the partner resided in the household. **Migrant status** was derived from a question on place of birth. Responses were coded as: Scotland; rest of United Kingdom (England, Wales, Northern Ireland) and outside the United Kingdom.

**Support measures.** **Grandparent network size** was based on mothers’ reports of the number of grandparents she was in regular contact with (either face-to-face, or by phone, letter or e-mail). For the purposes of this survey, the term “grandparent” was interpreted broadly to include nonblood relatives of the child, such as a mother’s stepfather, and so a child could be listed as having more than four “grandparents”. To prevent nontraditional family forms from dominating the network size measure, all grandparent networks greater than four were recoded as four. Further information about grandparent support was collected in respect of each individual grandparent that the mother was in touch with, and responses were aggregated to create the two following measures of support. **Grandparent contact frequency** was a scale based on how often grandparents saw the child, looked after the child for an hour or more during the day, and babysat in the evening (Cronbach’s alpha = .84), selecting the most frequent contact with any grandparent for each item. Responses were on a six-point scale (“every day or almost every day” to “never”). **Grandparent support level** was based on five types of support in the past year: taking the child on outings, buying toys, clothes or equipment, helping at home, helping financially in some other way, advice and support (yes/no response for each item). Scores counted any provision of each type of support by grandparents on either side of the family, and these were combined to give a total support measure (range 0–10). This was strongly correlated with grandparent network size \((r = .47)\).

**Friend network size** was measured by asking: “How many close friends would you say you have?” with responses on a 5-point scale (“none” to “ten or more”). **Supportive friendships** were measured using the statement “My friends take notice of my opinions” (responses from 1 “strongly agree” to 5 “strongly disagree,” with response 6 “I don’t have any friends” coded as 5). **Friend contact frequency** was measured by asking: “How often do you usually see or speak to your close friends either in person, by phone, on e-mail or using the internet?” with responses on a seven-point scale (“every day or almost every day” to “less than once every three months”). Childcare use was based on questions regarding the length of care per week for each provider currently used. Hours were classified as either informal (e.g., grandparents,
friend), or formal (e.g., registered child minder, nursery). *Reliance on formal childcare* was the share of total childcare hours spent with a formal provider (rescaled from 0 to 1). *Barriers to professional parent support* was a standardized scale based on five items (α = .69), indicating agreement using a 5-point scale with statements relating to interference from professionals, inadequacy of support available, stigma associated with support, lack of trust, and lack of knowledge about who to ask.

Although the main interest of the study was in support mediators of parenting stress, additional maternal and family characteristics provided information on SEP-related stressors and likely support needs. *Mother’s age* is known to be positively associated with feeling more restricted and less fulfilled by the parental role, independent of other influences (Nomaguchi & Brown, 2011); and may also be related to lower availability of maternal grandparent support, due to declining health (Wellard, 2011). Degree-educated mothers are most likely to be in full-time employment (Jaumotte, 2004) and affected by pressure from nonstandard full-time schedules (Joshi & Bogen, 2007), whereas low-educated groups may suffer more financial pressure. We assessed *employment pattern* based on hours worked at the time of interview, as well as nonstandard hours (regularly working evenings or nights). *Household money worries* were based on two items, r = .51, concerning difficulty repaying debts, and how well the family managed financially. We also expect low maternal health to be associated with greater parenting stress (Cornish et al., 2006; Anderson, 2008). *Maternal mental and physical health* were both measured using the SF-12 scale (Ware et al., 1996). We include a measure of family size (number of children under 16 years at interview), since this has also been linked to greater stress and lower support (Ostberg & Hagekull, 2000). Lastly, we include mother’s ethnicity (white/minority status) and language spoken at home, which may indicate acculturation difficulties (Raphael et al., 2010).

**Data Analysis**

Initial bivariate analyses were performed using Stata/SE version 12.1 (StataCorp LP, College Station, TX). Multivariate analyses were performed using Mplus version 7.3 (Muthén & Muthén, 1998–2012). Missing data were handled using Full Information Maximum Likelihood. Analyses allowed for the complex sampling design and survey weights to correct for lower take-up of the survey among disadvantaged groups and younger mothers. There were four stages to the analysis. First, associations between maternal educational level, migrant and single-parent status and maternal parenting stress were investigated using multiple linear regression. We then subdivided high- and low-educated groups, based on important combinations of migrant and lone parent status, and compared support in these subgroups to the reference group, mothers with intermediate education. Next, we constructed path models to explore mediators of parenting stress for high- and low-educated groups. Most mediation analysis is confined to continuous or binary predictors, but recent work has shown how it is possible to test mediation using a general linear approach where the predictor is (as in this study) a multicategorical variable (Hayes & Preacher, 2014). The “model indirect” command was used to estimate pathways from maternal stress group to parenting stress. For a multicategorical predictor, this command produces “relative” indirect effects where effect size is compared with that in a specified reference group (here, mothers with intermediate education). This analysis allowed us to establish which aspects of support were important for high- and low-educated groups. A final stage modeled the effects of adjusting for mediators of parenting stress in stages to demonstrate effects of sets of mediators important for high- and for low-educated groups separately.

**Results**

Just over a third of mothers (35%) were in the high-educated group with degree-level academic or vocational qualifications, 13% were in the low-educated group with low-level or no qualifications, whereas the remaining 52% had intermediate qualifications. Table 1 shows the uneven distribution of migrant status and single-parent status across these three educational groups. Around three in 10 high-educated mothers and two in 10 mothers with low education were born outside Scotland, compared with 12% of mothers with intermediate education. Nearly half of mothers with low education lacked a resident partner, compared with only 4% of degree-educated mothers. Table 2 shows that all three maternal characteristics were associated with parenting stress, even when mutually adjusted. Stress was higher in mothers with high and low education (compared with intermediate), those born outside Scot-

### Table 1

**Maternal Migrant and Partner Status According to Level of Maternal Education**

| Maternal characteristic                        | High education (n = 2, 129) | Intermediate education (n = 2, 898) | Low education (n = 691) | Total sample (N = 5, 717) |
|------------------------------------------------|-----------------------------|-----------------------------------|------------------------|--------------------------|
|                                                 | n  | %      | n  | %      | n  | %      | n  | %      |
| Mother’s country of origin                      |    |        |    |        |    |        |    |        |
| Scotland                                       | 1,495 | 70.5 | 2,523 | 87.7 | 540 | 79.3 | 4,558 | 80.6 |
| Rest of UK                                     | 346  | 15.7  | 274  | 9      | 61  | 8.2   | 681  | 11.2  |
| Outside of UK                                  | 288  | 13.8  | 100  | 3.4    | 90  | 12.4  | 478  | 8.2   |
| Resident partner status and origin             |    |        |    |        |    |        |    |        |
| Scotland                                       | 1,457 | 68.1 | 1,836 | 61.8 | 286 | 39.6 | 3,579 | 61    |
| Rest of UK                                     | 350  | 16.1  | 238  | 7.6   | 30  | 4      | 618  | 10.1  |
| Outside of UK                                  | 238  | 11.6  | 114  | 3.9    | 75  | 10.3  | 427  | 7.4   |
| No partner                                     | 82   | 4.2   | 709  | 26.7  | 300 | 46.1  | 1091 | 21.5  |

**Note.** Percentages relate to columns and take account of the complex survey design. UK = United Kingdom.
land, particularly outside the United Kingdom (compared with in Scotland) and single mothers (compared with those with a partner).

No interaction term between factors was significant (not shown), indicating additive rather than multiplicative effects. Although the reference group used here for maternal education is the intermediate group, resetting the reference group as high education indicated highest stress among low-educated mothers in the unadjusted model (coefficient 0.10, \( p = .03 \)), reduced to a nonsignificant difference (0.06, \( p = .08 \)) after adjusting for migrant and lone parent status.

To explore support deficits among high- and low-educated groups of mothers, we then disaggregated these two groups further. Among high-educated mothers, external and internal migrants were separated from native born mothers. Among low-educated mothers, external migrants in couple families and lone parents (regardless of country of birth) were separated from U.K.-born (i.e., native Scottish born and internal migrant) couple families. This procedure gave a total of six “maternal stress groups,” together with the intermediate-educated reference group.¹

The maternal stress subgroups all had higher parenting stress than the reference group (first line of Table 3). A supplementary table S1 shows differences in maternal and characteristics for the seven groups. Both high- and low-educated groups contained relatively high shares of mothers who were from a minority ethnicity group, or whose families did not speak any English at home. However, there were also differences in how high- and low-educated groups compared with the intermediate-educated reference group. High-educated groups were older, more likely to be in full-time employment, and more likely to work full-time nonstandard hours. Low-educated groups were all less likely to be working; and (with the notable exception of low-educated external migrants) had poorer health, more money worries and larger families. Overall, these contrasts suggest the possibility of some similarities, but also substantial differences, in support needs at either end of the maternal education spectrum. Similarities are likely to reflect the presence of migrants at both ends. Differences may reflect the greater need for regular childcare when the mother is at work among high-educated groups, but greater need for multiple forms of support (financial and emotional, as well as instrumental) among low-educated groups.

These considerations seem to be borne out by patterns of support shown in the main part of Table 3. Less frequent grandparent contact was evident for high-educated and the low-educated groups containing migrants, since comparatively few had grandparents residing in the local area. However, less frequent contact was also seen among low-educated couples born in the United Kingdom, even though most had grandparents nearby. Expected differences in support were also apparent at either end of the spectrum. All high-educated groups were more reliant on formal childcare and enjoyed less regular contact with friends, compared with the intermediate group. At the low-educated end of the spectrum, grandparent and friend network size and support levels were reduced compared with the intermediate-educated reference group, and there were more perceived barriers to professional parent support. A small grandparent network was particularly evident among low-educated single mothers: further analysis found 51% had no contact with paternal grandparents, and 21% were restricted to contact with one grandparent only (typically the maternal grandmother). These figures compare with 19% and 7%, respectively, in the whole sample.

Path models were constructed to test the mediating effects of support measures for parenting stress. Model 1 examined mediators for the six maternal stress groups, relative to the intermediate reference group, whereas Model 2 compared the high and low maternal education groups with the intermediate reference. Indirect (mediating) effects are shown in Table 4. Bold figures indicating significant positive effects (i.e., a group’s higher stress is mediated by a given support measure), whereas italicized figures indicate significant negative effects (i.e., a group’s lower parenting stress is mediated via a given support measure). For Model 1, with the exception of grandparent contact frequency (mediating higher parenting stress for two high-educated and two low-educated groups), there were different sets of mediators of higher stress for high-educated mothers and for low-educated mothers. Reliance on formal childcare and lower friend contact frequency mediated higher stress among high-educated groups, whereas smaller grandparent and friend network size and perceived barriers to professional parent support mediated higher parenting stress among low-educated groups. It is also striking to note that mediators of greater parenting stress among low-educated mothers were also often significant pathways to lower stress (italicized figures) among high-educated mothers, and vice versa. These effects were also observed in the simpler Model 2. Sensitivity analyses were conducted to explore the effect of varying the mediator measures and controlling for maternal mental health, which may have biased perceptions of support and stress. Substituting grandparent support level and friends’ supportiveness measures for network size measures found similar effects, suggesting network size equated to lower overall support. Controlling for maternal mental health to allow for possible bias to reports of parenting stress and support did not alter the findings (supplemental file S2).

Lastly, we explored the effect of adding mediators shown to be relevant for particular groups to models of associations between

¹ Note that there were insufficient numbers to create separate groups for high-educated migrant lone parents (\( N = 23 \)), high-educated native lone parents (\( N = 59 \)), low-educated internal migrants (\( N = 41 \)), or low-educated migrant lone parents (\( N = 32 \)).
Means and Standard Errors (in Parentheses) Parenting Stress and Support Among Mothers Grouped According to Education, Migrant, and Single-Parent Status

| Group                        | N      | Mean Stress | Support for Parenting |
|------------------------------|--------|-------------|-----------------------|
| High-educated group          | 2,344  | 2.54        | 0.17                  |
| Low-educated group           | 2,897  | 2.54        | 0.17                  |
| Migrant group                | 313    | 2.54        | 0.17                  |
| Single-parent group          | 78     | 2.54        | 0.17                  |

Note. *P-value < 0.05 compared to Reference Group 4 (mothers with intermediate education).

Discussion

This study found higher maternal parenting stress among both most and least educated mothers of infant children compared with mothers with intermediate education. As far as we know, ours is the first study to document higher stress among high- as well as low-educated groups, and the first to explore how this socioeconomic variation in stress relates to maternal support. To obtain a clearer understanding of support deficits among high- and low-educated groups, we subdivided them according to mothers’ migrant and single-parent status. These two additional structural factors were unequally distributed among high- and low-educated groups, with a high share of migrants among high- and low-educated mothers, and a high share of lone parents among low-educated mothers. Migrant and single-parent status were also associated with higher parenting stress, as found for another large population study of families with infant children immigrant status (Sepa et al., 2004). Collectively, these findings regarding inequalities in parenting stress support our first hypothesis.

Overall, support deficits accounted for around half of the higher parenting stress experienced by high- and low-educated mothers, supporting our second hypothesis. We found that less frequent grandparent contact helped to explain higher parenting stress among both high- and low-educated mothers, with this effect found predominantly among migrants. Aside from this, degree-educated and low-educated mothers appeared to lack different dimensions of informal support. Stress among low-educated mothers was associated with smaller and less effective networks. Stress among high-educated mothers was associated with less readily accessible informal support, despite larger network size and quality. Reliance on formal childcare was a particular source of stress for high-educated mothers, who were more likely to be in full-time employment than less-educated groups. Barriers to professional support were most pertinent for low-educated mothers.

Existing studies suggest the importance of grandparents for mothers’ parenting stress in families where children have a particular health problem or disability (Hastings et al., 2002; Trute, 2003), and the current study underscores the importance of grandparent contact in providing childcare and more general support to mothers within a general population. Our data suggest lower availability of maternal grandparent support was limited by geo-
provide an extra dimension to maternal support beyond that ob-
combined support measures, and tend to support the idea that empathy
enting stress, our findings extend previous research using com-
showing independent effects of grandparents and friends on par-
port from friends resembled differences in support from grandpar-
Missing from friends may be particularly important for younger mothers, out-
for poor mental health and our use of contact-based (rather than
Scottish cohort (Mabelis & Marryat, 2011). Our study suggests
formal support among disadvantaged mothers with infant and
migrants; perhaps reflecting less regular emotional, as well as
levels of parenting stress for mothers with low education, even
that these barriers to professional support helped to explain higher
Strengths of the study include the nationally representative
may have biased attitudes to professional support, but we adjusted
us of contact-based (rather than perceived) informal support measures is likely to have countered
Lastly, it is important to note that causal processes
tained from an older generation of relatives (Thoits, 2011). Indeed,
study of adolescent mothers with infant children suggested that friends may be particularly important for younger mothers,
overweighting the importance of family support for parenting stress (Richardson et al., 1995). Lastly, mistrust and low awareness of
mortality of lower parenting stress in maternal group via support measure). UK = United Kingdom.
" p < .05. "" p < .01. "*** p < .001.
parental support. It is possible that high parenting stress
may have biased attitudes to professional support, but we adjusted
for poor mental health and our use of contact-based (rather than
perceived) informal support measures is likely to have countered
bias here. Lastly, it is important to note that causal processes
cannot be inferred from this type of study. It is possible that
graphical distance for migrants. Weaker family ties also appeared
pertinent for reduced contact among some disadvantaged groups,
as found in other research on low-income families with young
children (Harknett & Hartnett, 2011). Even after accounting for
regular childcare arrangements, less frequent grandparent contact
was associated with greater parenting stress among high-educated
migrants; perhaps reflecting less regular emotional, as well as
functional, support. Among less-educated groups, smaller grand-
parent networks appeared more relevant. This echoes other re-
search finding smaller grandparent networks reduce financial as
well as emotional support (Harknett & Hartnett, 2011). For low-
educated single-parent mothers, there were indications that support
restricted to the maternal grandmother was a particularly strong
mediator of parenting stress. This might seem counterintuitive,
since a closer bond between a mother and maternal grandparents
has been well established in the literature (Chan & Elder, 2000). In
part, exclusion of paternal grandparents might be a choice made by
mothers faced with more challenges, to avoid interference or
criticism (Harknett & Hartnett, 2011). However, overdependence
on the maternal grandmother may put stress on this relationship
(Greenfield, 2011).

Differences between degree- and low-educated groups in sup-
port from friends resembled differences in support from grandpar-
ents. Stress among low-educated mothers appeared related to
lower emotional support from friends, in keeping with research
suggesting social relations may deteriorate when a mother is
unable to reciprocate support (Harknett & Hartnett, 2011); though
degree-educated mothers’ higher stress was associated with less
frequent contact with friends, including by remote means. This
may reflect longer working hours and reduced leisure time. In
showing independent effects of grandparents and friends on par-
enting stress, our findings extend previous research using com-
bined support measures, and tend to support the idea that empathy
and shared experiences involving other parents of young children
provide an extra dimension to maternal support beyond that ob-
Table 4

| Model main predictors | Support mediators | Support mediators | Support mediators | Support mediators |
|-----------------------|------------------|------------------|------------------|------------------|
|                       | Grandparent network size | Grandparent contact frequency | Reliance on formal childcare | Friends network Size | Friend contact frequency | Barriers to professional parent support |
| Model 1               |                   |                   |                   |                   |                   |                   |
| Maternal group by status |                   |                   |                   |                   |                   |                   |
| High-educated, external migrant | -0.001*** | 0.016*** | 0.005** | -0.001 | 0.008*** | -0.005 |
| High-educated, internal migrant | -0.004*** | 0.008* | 0.006*** | -0.005** | 0.009*** | -0.016*** |
| High-educated, native | -0.006*** | 0.001 | 0.006*** | -0.009** | 0.015*** | -0.030*** |
| Low-educated, UK-born couple | 0.004** | 0.004** | -0.002** | 0.002* | 0.000 | 0.018*** |
| Low-educated, external migrant couple | 0.002* | 0.012*** | -0.001 | 0.003* | 0.002 | 0.009** |
| Low-educated, single parent | 0.009*** | 0.001 | -0.003** | 0.004** | -0.005** | 0.024*** |
| Model 2               |                   |                   |                   |                   |                   |                   |
| Maternal group by education |                   |                   |                   |                   |                   |                   |
| High-educated | -0.007*** | 0.009*** | 0.008*** | -0.010** | 0.017*** | -0.030*** |
| Low-educated | 0.009*** | 0.007*** | -0.003*** | 0.005** | -0.002 | 0.030*** |

Note. Reference group in both models consist of mothers with intermediate education. Figures show standardized estimates. Values in bold indicate significant positive indirect effects (i.e. mediation of higher parenting stress in maternal group via support measure). Values in italics indicate significant negative indirect effects (i.e. mediation of lower parenting stress in maternal group via support measure).
Table 5

Associations Between Maternal Groups and Parenting Stress After Adjustment for Support Mediators

| Model main predictors                        | β                      | Stage 1- Unadjusted | Stage 2- Adjusted for migrant support deficit | Stage 3- Adjusted for high-educated support deficits | Stage 4- Adjusted for low-educated support deficits |
|---------------------------------------------|------------------------|---------------------|-----------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| Model 1                                    |                        |                     |                                               |                                                   |                                                   |
| Maternal group based on education, migrant and lone parent status |                        |                     |                                               |                                                   |                                                   |
| High-educated, external migrant             | 0.29***                | 0.20***             | 0.17***                                       | 0.25***                                          |                                                   |
| High-educated, internal migrant             | 0.16***                | 0.12**              | 0.08                                          | 0.21***                                          |                                                   |
| High-educated, native                       | 0.05*                  | 0.05*               | 0.01                                          | 0.13***                                          |                                                   |
| Low-educated, UK-born couple                | 0.13***                | 0.12**              | 0.12**                                        | 0.05                                             |                                                   |
| Low-educated, external migrant couple       | 0.22**                 | 0.11                | 0.12                                          | 0.05                                             |                                                   |
| Low-educated, single parent                 | 0.26***                | 0.26***             | 0.28***                                       | -0.03***                                         | 0.15***                                          |
| Support mediators                          |                        |                     |                                               |                                                   |                                                   |
| Grandparent network size                    | Larger                 |                     |                                               |                                                   |                                                   |
| Grandparent contact frequency               | Decreasing             |                     |                                               |                                                   |                                                   |
| Reliance on formal childcare               | Greater                |                     |                                               |                                                   |                                                   |
| Friends network size                        | Larger                 |                     |                                               |                                                   |                                                   |
| Friend contact frequency                    | Decreasing             |                     |                                               |                                                   |                                                   |
| Barriers to professional parent support     | Greater                |                     |                                               |                                                   |                                                   |
| Model 2                                    |                        |                     |                                               |                                                   |                                                   |
| Maternal group based on education only      |                        |                     |                                               |                                                   |                                                   |
| High-educated                              | 0.10***                | 0.08***             | 0.05**                                        | 0.16***                                          |                                                   |
| Low-educated                               | 0.20***                | 0.18***             | 0.19**                                        | -0.03***                                         | 0.09***                                          |
| Support mediators                          |                        |                     |                                               |                                                   |                                                   |
| Grandparent network size                    | Larger                 |                     |                                               |                                                   |                                                   |
| Grandparent contact frequency               | Decreasing             |                     |                                               |                                                   |                                                   |
| Reliance on formal childcare               | Greater                |                     |                                               |                                                   |                                                   |
| Friends network size                        | Larger                 |                     |                                               |                                                   |                                                   |
| Friend contact frequency                    | Decreasing             |                     |                                               |                                                   |                                                   |
| Barriers to professional parent support     | Greater                |                     |                                               |                                                   |                                                   |

Note. Reference group in both models: mothers with intermediate education. Values show nonstandardized coefficients. * p < .05. ** p < .01. *** p < .001.
omitted variables might be responsible for some of the associations found, and might help account for remaining high stress, especially among some groups of mothers (high-educated external migrants, and low-educated single parents). Other research has related partner support to maternal parenting stress (Kalil et al., 2005; Mulsow et al., 2002; Nomaguchi & Brown, 2011), but we lacked sufficient information to model this. Acculturation difficulties are likely to contribute to external migrants’ perceptions of stress and need for support (Raphael et al., 2010). Although low-educated external migrants’ stress appeared to be driven by grandparent contact frequency, acculturation difficulties might contribute to stress among high-educated external migrants striving to combine a career with caring for an infant child.

Overall, our study suggests that understanding socioeconomic variation in parenting stress levels may be enhanced by further disaggregating the population to highlight particular groups at risk from low support. Disaggregation demonstrates the need for different approaches to mitigate contextual factors associated with parenting stress among different population groups, thus going beyond informing more effective interventions (Pawson & Tilley, 1997). In Scotland, there is a rapidly growing immigrant population (Krausova & Vargas-Silva, 2013), and this study adds to concerns for immigrant parents’ integration into informal support networks (Turney & Kao, 2009). High parenting stress was also found for internal migrants from the rest of the United Kingdom, which was also related to childcare problems among mothers returning to work, and more generally to a lack of informal support. This is likely to reflect the geographical remoteness of Scotland from the rest of the United Kingdom, and further research is needed to establish whether internal migrants elsewhere experience similar difficulties. There is evidence to suggest the beneficial effects of Internet and telephone resources for new mothers’ well-being (McDaniel et al., 2012). However, although remote social connections may provide some emotional support, lack of functional support may pose more problems and this study adds to concerns about the ability of formal childcare provision to meet childcare needs (Wheelock & Jones, 2002). For the most disadvantaged families, an Irish qualitative study (Doyle et al., 2010) suggests benefits to children from reconnection with estranged grandparents. It seems important to establish whether there are also benefits to the parent from repaired grandparent relationships. In addition, our study raises questions over the use of professional support to compensate for family support deficits. It adds to qualitative evidence that sensitivity is required to overcome feelings of mistrust or stigma attached to the use of professional services among disadvantaged mothers with young children (Attree, 2005), although there is now evidence of the effectiveness of some types of group intervention in reducing maternal distress (Barlow et al., 2012). Finally, although we found the highest levels of parenting stress among the most disadvantaged mothers, our findings point to the need to avoid assumptions that parenting stress is uniquely associated with disadvantage and to expand efforts beyond women living in poverty with limited educational resources. Our study underlines the desirability of taking a more sophisticated approach to risk assessment. Despite some similarity between high- and low-educated migrants’ needs, in most respects high- and low-educated groups had opposite sets of support needs. Indeed, a support deficit at one end of the SEP spectrum was seen to constitute a relative support advantage at the other end of the spectrum. In this way, high-educated mothers’ larger informal networks and low perceived barriers to professional support alleviated their parenting stress compared with intermediate mothers, whereas having accessible informal childcare was a source of lower parenting stress among low-educated groups. This suggests a prime need for tailored outreach and targeted interventions to maximize benefits to different groups of mothers, as well as efficient use of resources.

References

Anderson, L. S. (2008). Predictors of parenting stress in a diverse sample of parents of early adolescents in high-risk communities. Nursing Research, 57, 340–350. http://dx.doi.org/10.1097/01.NNR.0000313502.92227.87

Attree, P. (2005). Parenting support in the context of poverty: A meta-synthesis of the qualitative evidence. Health & Social Care in the Community, 13, 330–337. http://dx.doi.org/10.1111/j.1465-2524.2005.00562.x

Barlow, J., Smailagic, N., Huband, N., Roloff, V., & Bennett, C. (2012). Group-based parent training programmes for improving parental psychological health. Cochrane Database of Systematic Reviews, 6, CD002020. http://dx.doi.org/10.1002/14651858.CD002020.pub3

Benson, P. R. (2012). Network characteristics, perceived social support, and psychological adjustment in mothers of children with autism spectrum disorder. Journal of Autism and Developmental Disorders, 42, 2597–2610. http://dx.doi.org/10.1007/s10803-012-1517-9

Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial Psychometric Evidence. Journal of Social and Personal Relationships, 12, 463–472. http://dx.doi.org/10.1177/0265407595123009

Brady, D., & Burroway, R. (2012). Targeting, universality, and single-mother poverty: A multilevel analysis across 18 affluent democracies. Demography, 49, 719–746. http://dx.doi.org/10.1007/s13524-012-0094-z

Cairney, J., Boyle, M., Offord, D. R., & Racine, Y. (2003). Stress, social support and depression in single and married mothers. Social Psychiatry and Psychiatric Epidemiology, 38, 442–449. http://dx.doi.org/10.1007/s00127-003-0661-0

Cappa, K. A., Begle, A. M., Conger, J. C., Dumas, J. E., & Conger, A. J. (2011). Bidirectional relationships between parenting stress and child copeding: Findings from the Pace Study. Journal of Child and Family Studies, 20, 334–342. http://dx.doi.org/10.1007/s10826-010-9397-0

Chan, C. G., & Elder, G. H., Jr. (2000). Matrilineal advantage in grandchild–grandparent relations. The Gerontologist, 40, 179–190. http://dx.doi.org/10.1093/geront/40.2.179

Chang, Y., & Fine, M. A. (2007). Modeling parenting stress trajectories among low-income young mothers across the child’s second and third years: Factors accounting for stability and change. Journal of Family Psychology, 21, 584–594. http://dx.doi.org/10.1037/0893-3201.21.4.584

Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. Annual Review of Psychology, 58, 175–199. http://dx.doi.org/10.1146/annurev.psych.58.110405.085551

Cornish, A. M., McMahon, C. A., Unger, J. A., Barnett, B., Kowalenko, N., & Tennant, C. (2006). Maternal depression and the experience of parenting in the second postnatal year. Journal of Reproductive and Infant Psychology, 24, 121–132. http://dx.doi.org/10.1080/02646830600644021

Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. Clinical Psychology: Science and Practice, 5, 314–332. http://dx.doi.org/10.1111/j.1468-2850.1998.tb00152.x
The demographic and socio-economic profile of return migrants and long-term in-migrants in Scotland: Evidence from the Scottish Longitudinal Study. Edinburgh, Scotland: Scottish Government Social Research.

McDaniel, B. T., Coyne, S. M., & Holmes, E. K. (2012). New mothers and media use: Associations between blogging, social networking, and maternal well-being. *Maternal and Child Health Journal, 16*, 1509–1517. http://dx.doi.org/10.1007/s10815-011-0918-2

McLanahan, S., & Booth, K. (1989). Mother-only families—Problems, prospects, and politics. *Journal of Marriage and the Family, 51*, 557–580. http://dx.doi.org/10.2307/352157

Mulow, M., Caldera, Y. M., Pursley, M., Reifman, A., & Huston, A. C. (2002). Multilevel factors influencing maternal stress during the first three years. *Journal of Marriage and the Family, 64*, 944–956. http://dx.doi.org/10.1111/j.1741-3737.2002.00944.x

Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus User’s Guide* (7th Ed.). Los Angeles, CA: Authors.

Nomaguchi, K. M., & Brown, S. L. (2011). Parental strains and rewards among mothers: The role of education. *Journal of Marriage and the Family, 73*, 621–636. http://dx.doi.org/10.1111/j.1741-3737.2011.00835.x

Office of the Chief Researcher & Office of the Chief Economical Adviser. (2010). Migration. In *Demographic change in Scotland* (pp. 43–53). Edinburgh: Scottish Government Social Research.

Osberg, M., & Hagekull, B. (2000). A structural modeling approach to the understanding of parenting stress. *Journal of Clinical Child Psychology, 29*, 615–625. http://dx.doi.org/10.1207/S15374424JCP2904_13

Parkes, A., Sweeting, H., & Wight, D. (2013). Parenting. *Growing up in Scotland: Birth Cohort 2. Results from the first year* (pp. 118–142). Edinburgh: Scottish Government. http://www.gov.scot/Publications/2013/02/32800

Pawson, R., & Tilley, N. (1997). *Realistic evaluation*. London, England: Sage.

Pesonen, A.-K., Raikkonen, K., Heinonen, K., Komsis, N., Jarvenpaa, A.-L., & Strandberg, T. (2008). A transactional model of temperamental development: Evidence of a relationship between child temperament and maternal stress over five years. *Social Development, 17*, 326–340. http://dx.doi.org/10.1111/j.1467-9507.2007.00427.x

Quittner, A. L., Glueckauf, R. L., & Jackson, D. N. (1990). Chronic parenting stress: Moderating versus mediating effects of social support. *Journal of Personality and Social Psychology, 59*, 1266–1278. http://dx.doi.org/10.1037/0022-3514.59.6.1266

Raikes, H. A., & Thompson, R. A. (2005). Efficacy and social support as predictors of parenting stress among families in poverty. *Infant Mental Health Journal, 26*, 177–190. http://dx.doi.org/10.1002/imhj.20044

Raphael, J. L., Zhang, Y., Liu, H., & Giardino, A. P. (2010). Parenting stress in U.S. families: Implications for paediatric healthcare utilization. *Child: Care, Health and Development, 36*, 216–224. http://dx.doi.org/10.1111/j.1365-2214.2009.01052.x

Richardson, R. A., Barbour, N. E., & Dubenzel, D. L. (1995). Peer relationships as a source of support for adolescent mothers. *Journal of Adolescent Research, 10*, 278–290. http://dx.doi.org/10.1177/074355895102005

Rienzo, C. (2013). Characteristics and outcomes of migrants in the UK Labour market. *Migration Observatory Briefing*. Oxford, England: COMPAS.

Rutter, J., & Evans, B. (2011). Listening to grandparents. *Informal Childcare Research* (Vol. Paper One). London, England: Daycare Trust.

Schieman, S., Milkie, M. A., & Glavin, P. (2009). When work interferes with life: Work–nonwork interference and the influence of work–related demands and resources. *American Sociological Review, 74*, 966–988. http://dx.doi.org/10.1177/0001839309340066

Scottish Government. (2014). *Child poverty strategy for Scotland: Our approach 2014–2017*. Edinburgh: Scottish Government.

ScotCen Social Research. (2013). *Growing up in Scotland: Cohort 2, Sweep 1, 2011*. Colchester, Essex: UK Data Archive.
Sepa, A., Frodi, A., & Ludvigsson, J. (2004). Psychosocial correlates of parenting stress, lack of support and lack of confidence/security. Scandinavian Journal of Psychology, 45, 169–179. http://dx.doi.org/10.1111/j.1467-9450.2004.00392.x

Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. Journal of Health and Social Behavior, 52, 145–161. http://dx.doi.org/10.1177/0022146510395592

Trute, B. (2003). Grandparents of children with developmental disabilities: Intergenerational support and family well-being. Families in Society, 84, 119–126. http://dx.doi.org/10.1606/1044-3894.87

Turney, K., & Harknett, K. (2010). Neighborhood disadvantage, residential stability, and perceptions of instrumental support among new mothers. Journal of Family Issues, 31, 499–524. http://dx.doi.org/10.1177/0192513X09347992

Turney, K., & Kao, G. (2009). Assessing the private safety net: Social support among minority immigrant parents. The Sociological Quarterly, 50, 666–692. http://dx.doi.org/10.1111/j.1533-8525.2009.01157.x

Uhlenberg, P., & Hammill, B. G. (1998). Frequency of grandparent contact with grandchild sets: Six factors that make a difference. The Gerontologist, 38, 276–285. http://dx.doi.org/10.1093/geront/38.3.276

Ware, J., Jr., Kosinski, M., & Keller, S. D. (1996). A 12-Item Short-Form Health Survey: Construction of scales and preliminary tests of reliability and validity. Medical Care, 34, 220–233. http://dx.doi.org/10.1097/00005650-199603000-00003

Wellard, S. (2011). Doing it all? Grandparents, childcare and employment: An analysis of British Social Attitudes Survey Data from 1998 and 2009. London, England: Grandparents Plus.

Wheelock, J., & Jones, K. (2002). ‘Grandparents are the next best thing’: Informal childcare for working parents in urban Britain. Journal of Social Policy, 31, 441–463. http://dx.doi.org/10.1017/S0047279402006657

White, N., & Hastings, R. P. (2004). Social and professional support for parents of adolescents with severe intellectual disabilities. Journal of Applied Research in Intellectual Disabilities, 17, 181–190. http://dx.doi.org/10.1111/j.1468-3148.2004.00197.x

Received July 22, 2014
Revision received May 21, 2015
Accepted June 15, 2015