Parental nonstandard work schedules and child obesity: Does family structure matter?

Nonstandard work schedules – shifts that occur outside of traditional daytime hours – are common in the American work force. Recent reports indicate that a fifth of working Americans are engaged in nonstandard shift work as is at least one adult in a third of dual-earner households (Presser & Ward, 2011). Analyses of a cohort of youth aged 14-21 in 1978 found that 9 out of 10 had worked at some type of nonstandard shift by age 39 (Presser & Ward, 2011). However, though nonstandard employment has become commonplace, its effects are not fully understood (Presser & Ward, 2011).

Although a substantial body in the both the US and abroad has linked maternal employment to risk for child obesity (J. E. Brown, Broom, Nicholson, & Bittman, 2010; Miller, 2011; Ruhm, 2006), only a few previous studies have examined the impact of nonstandard employment on child obesity, and these studies have arrived at inconsistent findings. Child obesity is one of the major public health problems of the current era (Ebbeling, Pawlak, & Ludwig, 2002), and unraveling its social and demographic precipitants is essential to guiding effective prevention and intervention. Miller and Han (Miller & Han, 2008) found that either a few years or many years of maternal nonstandard shift work was associated with increased risk of overweight or obesity when children were 13 or 14 years old. However, Morrisey and colleagues (Morrissey, Dunifon, & Kalil, 2011) found no relationship between maternal shift work and children's body mass index (BMI). A third study, which considered both maternal and paternal shift work (Champion et al., 2012) found that nonstandard employment by fathers alone or by mothers and fathers together was associated with increased odds of overweight or obesity but found no association for nonstandard shift work by only mothers.

Consistent with much other research on nonstandard work schedules and child outcomes (Li et al., 2013), the literature on nonstandard schedules and child obesity has been limited by not considering the potential moderating influences of family structure. Like parental employment more generally, nonstandard schedules are presumed to impact child obesity by disrupting family processes related to meal preparation, physical activity, and leisure time. Accordingly, family structure may be relevant to this relationship if it affects the link between nonstandard schedules and family processes, or the link between these processes and obesity (Li et al., 2013).

For example, nonstandard work schedules may be particularly impactful for child obesity in single mother homes because another adult may not be available to help prepare meals or to supervise children. By virtue of having two parents present, married biological parent and cohabiting biological parent families may fare better. However, previous research points to poorer outcomes for children raised in cohabiting parent families when compared to those living with married biological parents (S. Brown, 2010), differences that are not entirely explained by lower economic resources (Thomson & McLanahan, 2012). Further, previous studies have also found that the quality of parenting and the home environment may be lower for families with cohabiting biological parents than those with married biological parents (Klausli & Owen, 2009; Rosenkrantz Aronson & Huston, 2004). Thus, previous research and theory suggests that the impacts of parental work schedules may be more pronounced in single mother or cohabiting parent families.

Using longitudinal data from the Fragile Families and Child Well-Being Study (FFCWS), this study investigates the impact of both maternal and paternal shift work on child overweight and obesity at ages 3, 5, and 9. It extends previous work in two important ways. First, like (Morrissey et al., 2011) it uses child fixed effects (FE) models, but applies this approach to consider the work schedules of both mothers and fathers. Second, it considers whether associations between parental shift work and overweight and obesity differ for children living with married biological parents, cohabiting biological parents, and single mothers using direct reports on shift work from both mothers and fathers.

Data and Methods

Given our focus on both maternal and paternal work schedules, for this paper, we restricted our analyses to those families where children were living with biological mothers who had not re-partnered. Thus, our analytic sample included longitudinal observations on parents and children in three types of families: married biological parent families, cohabiting biological parent families, and single biological mother families. We excluded social father families (where a biological mother had remarried or was cohabiting with a new partner) because the FFCWS did not collect information on the shift work or employment for such fathers.

Using data from the in-home survey from the 3-, 5- and 9-year waves of the FFCWS, we coded children as being overweight or obese if their body mass index was above the 85th percentile for children of the same age and gender (Kuczmarski et al., 2002). At each time, mothers and fathers were each coded as either unemployed, working only standard shifts, working only nonstandard shifts, or working a mix of standard and non-standard shifts. When appropriate, models included controls for maternal and paternal hours of weekly employment and a number of other family and child characteristics. We pooled observations from our three waves of data, and ran our analyses using both ordinary least squares (OLS) and child fixed effects regression. Our final analytic sample consisted of about 4,500 observations, contributed by approximately 2,600 families in the dataset.

Results

In OLS and FE models, children whose mothers worked a mix of standard and nonstandard shifts had a significantly higher probability of between 0.087 and 0.097 of being overweight or obese compared to those whose mothers worked only standard shifts. Contrary to expectations, this association was significant and more pronounced in married biological parent families but not significant in single mother or cohabiting families. For example, in fixed effects models, the probability of child overweight or obesity was 0.152 higher for children in married biological parent families whose mothers worked a mix of standard and nonstandard schedules compared to children whose mothers worked only standard shifts. Consistent with previous research, paternal shift work was not related to child overweight or obesity and the inclusion of paternal employment variables did not alter the relationship between the mix of maternal shifts and child obesity.

Unlike some previous research, this study found no change in the probability of obesity for mothers who worked only nonstandard work schedules. Rather, risk for child overweight or obesity was higher in households where mothers worked a combination of standard and nonstandard shifts.

Although future research is necessary to explore the mechanisms by which this association operates, these results suggest that such households may experience disruption in relevant household routines and activities as families struggle to adjust to mothers' changing employment circumstances. Although previous research suggests that children in married biological parent homes tend to fare best, this study found that children in these homes were the only ones at increased risk for overweight or obesity when mothers worked mixed schedules.

Overall, the results from this study suggest the importance of continued research on the relationship between nonstandard employment, family structure, and children's weight. A growing body of evidence underscores the need for policies and programs that can support families with demanding work schedules, particularly given how commonplace nonstandard employment has become in the American workforce.

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