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Work and Health of Parents of Adult Children with Serious Mental Illness

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Abstract

This study examined the effects of work schedule flexibility and the spillover of work stress to family life on the health of parents of adult children with serious mental illness (SMI). We compared 100 parents of adult children with SMI to 500 parents with nondisabled adult children using data from the Wisconsin Longitudinal Study. The detrimental impact on health of a lack of work flexibility and of higher levels of negative work-to-family spillover were more pronounced among parents of adult children with SMI than parents with non-disabled adult children. The results have significant implications for developing interventions to help midlife families of persons with SMI cope with work-related stress and for policies that provide for greater work schedule flexibility.

Keywords

mental illness; parenting; work schedule flexibility; work to family spillover; physical health

The burden of serious mental illness is enormous to both the individual and the family. In a given year, an estimated 13 million American adults (approximately 1 in 17) have a seriously debilitating mental illness (Kessler et al., 2005). Mental health disorders are the leading cause of disability in the United States, accounting for 25 percent of all years of life lost to disability and premature mortality (The World Health Organization, 2004).

Since relatively few persons with SMI marry and public mental health services are often fragmented and underfunded (Wolfe et al., under review; Kessler, Walters, & Forthofer, 1998), parents often provide ongoing support until they no longer have the capacity to continue in this role. These parents face many challenges in coping with the long-term care of an adult child with SMI, which takes a progressive toll on their health and psychological well-being (Barker et al., 2012; Ghosh, Greenberg, & Seltzer, 2012; Murphy et al., 2007).

One such challenge is balancing work responsibilities with those of helping to support their son or daughter with SMI (Brennan et al., 2007; Rosenzweig, Brennan, & Ogilvie, 2002). Much of the research on families of persons with SMI has focused on how the burdens of caregiving affect the world of work (Brennan et al., 2007; Rosenzweig, Brennan, & Ogilvie, 2002). There is a growing literature finding that stress at work has a major impact on family life in the general population (Eby et al., 2005; Ilies et al., 2007) and that work-family conflicts are a significant predictor of poor health and well-being (Allen et al., 2000; Grzywacz & Bass, 2003; van Steenbergen & Ellemers, 2009). Although the great majority of caregivers of persons with SMI work (Seltzer et al., 2001), no study has yet examined how work-related stress that spills over into family life affects the health and well-being of parents providing support to an adult child with SMI. In this study we examine how stress related to the work-family interface affects the well-being of parents of adults with SMI as well as whether greater work schedule flexibility is a particularly important resource for these parents.

There is a growing body of research investigating the adverse effects of work and family conflicts on individual well-being. Specifically, work-family conflicts have been associated with poor physical health (Greenhaus, Allen, & Spector, 2006), higher cholesterol levels, higher body mass index, lower physical stamina (van Steenbergen & Ellemers, 2009), and increased alcohol consumption (Frone et al., 1997; Grzywacz & Bass, 2003). Studies find that work-family conflicts are frequently experienced by families of persons with SMI. In a focus group interview of 41 employed parents whose children had mental health diagnoses, Rosenzweig, Brenna, and Orilvie (2002) found that these parents experienced significant conflicts between work and family, including problems in work performance and interference of family demands during the workday.

Although there are various job characteristics that may help parents cope with their adult child's mental illness, we focus in the present analysis on flexibility in work schedule, which has been associated with better physical health (Butler et al., 2009), fewer physical symptoms (Janssen & Nachreiner, 2004), and less stress (Almer & Kaplan, 2003; Butler et al., 2009) among working adults. Having a flexible work schedule may contribute to health and well-being by enabling individuals to balance competing demands from multiple life domains and consequently reducing conflicts with other roles (Rozanski & Kubzansky, 2005). Work schedule flexibility also enhances health by increasing perceived job control, which has been consistently linked to better physical health (Butler et al., 2009), and by promoting positive health behaviors such as physical activity and more sleep (Grzywacz, Casey, & Jones, 2007; Moen et al., 2011).

Additionally, one of the major stressors for families of persons with SMI is the overall higher level of uncertainty regarding how their son or daughter will function from day-to-day. Even when the individual with SMI has been quite stable over time, parents may still experience feelings of heightened uncertainty because of past experiences seeing their child quickly decompensate after a long period of stability (Marsh et al., 1996). Having a flexible work schedule allows parents to respond to crises in their child's life while still be able to meet their obligations to their employer.

Finally, many of the ways that parents help an adult child with SMI, such as transportation to medical appointments or making calls to clarify public benefits, must be completed during work hours. Job flexibility allows the parent to make work accommodations when tasks for their child can only be completed during work hours.

Our examination of the effects of work schedule flexibility and work-family conflicts on parental health is guided by ecological systems theory (Bronfenbrenner & Morris, 1998),

which posits that the environment surrounding an individual is a multilevel system. The different levels of an individual's environment interact with one another as well as with the individuals within the systems, and these interactions influence developmental outcomes. Ecological systems theory has guided past research investigating the work-family interface and its impact on health behaviors in adulthood (e.g., Grzywacz & Marks, 2000). Within an ecological systems theory, the microsystem refers to the immediate physical and psychological environment as well as an individual's behavioral patterns and roles (e.g., family, work, and school); in the current study, parenting a child with SMI is conceptualized as a factor in the family microsystem, and work schedule flexibility is conceptualized as a factor in the work microsystem. The mesosystem consists of the interface between microsystems; in this study, the negative spillover from work to family is one dimension of the mesosystem. Other subsystems in ecological systems theory (i.e., the exosystem and the macrosystem) could not be adequately operationalized by the available measures in the data set and thus could not be modeled in our analysis.

Based on the above review of the literature and ecological systems theory, we investigated the following hypotheses by analyzing data from parents of children with SMI and a closely matched sample of parents who had children without disabilities:

1. Mothers and fathers who have an adult child with SMI will have poorer health profiles than mothers and fathers who have unaffected adult children.
2. Mothers and fathers who do not have flexibility in their work schedules and who experience higher levels of negative spillover from work to family will report poorer health than mothers and fathers who have work schedule flexibility and report lower levels of negative spillover from work to family, regardless of parent status.
3. The association between work flexibility, work to family spillover, and health of mothers and fathers will be more salient among the mothers and fathers of adult children with SMI than among comparison group mothers and fathers.

Method

Data and Sample

The Wisconsin Longitudinal Study (WLS) is a long-term study of a random sample of 10,317 women and men who graduated from Wisconsin high schools in 1957; the sample also includes 5,823 randomly selected siblings of the graduates. The original sample members were surveyed in 1957, 1975, 1992, and 2004, and their siblings were surveyed in 1977, 1994, and 2006 (Hauser & Roan, 2006). Most respondents were White, which reflects Wisconsin's population in the mid-twentieth century. The current survey uses the sample from the 1992/1994 survey, which encompasses both original sample members and their siblings. We focus on the 1992/1994 survey because at this time respondents averaged 53 years of age and the majority was still in the workforce, whereas by the subsequent round of data collection, approximately half of the WLS respondents were retired. In total, 10,353 respondents completed both a phone interview and a self-administered questionnaire (SAQ) in 1992/1994 (6,875 original respondents and 3,478 siblings). In the present study, the original sample members and their siblings are treated as a single group of respondents from which a group of parents of adult children with SMI and a comparison group were selected. In cases in which both the original respondent and his/her sibling met the criteria for selection into the comparison group, we randomly selected one to avoid dependency in the data. There were no such sibling pairs among the parents of children with SMI.

In 1992/94, telephone interviews and mail-back questionnaires were administered to collect information about various dimensions of respondents' lives, including family, work, and health. Parents of individuals with SMI were initially identified through the review of an array of variables about caregiving and children's education and disabilities in the 1975/77 and 1992/94 WLS surveys, and the sample was confirmed and expanded through a series of direct screener questions asked of all parents in the 2004/06 survey. The screener consisted of a maximum of 31 questions that began by asking parents if any of their children (living or deceased) had SMI, and the specific diagnosis. The parent was included in the sample if he/she indicated that the son or daughter had schizophrenia or bipolar disorder, or a major depression that required hospitalization or interfered with his/her ability to work or live independently. We include a case in the SMI sample only if the child was the biological or adoptive child of the WLS respondent. Using these procedures, we identified 333 WLS respondents who had a child with SMI, of whom 175 parents reported that their child's symptoms began before the 1992/94 interview and the child with SMI was still alive at that point of data collection.

The analytic sample for this study included two groups. The first group consisted of parents who were working full-time (i.e., 35 hours or more a week) at the time of the 1992/1994 survey (excluding self-employed), had completed both the phone interview and the mail-back questionnaire in 1992/1994, and had children with SMI whose conditions started before 1992/1994 ($N = 100$, 67 mothers and 33 fathers). The second was a comparison group of WLS respondents who were working full-time at the time of the 1992/1994 survey, had completed both the phone interview and the SAQ in 1992/1994, and did not have any children with SMI, deceased children, or children with either developmental disabilities or serious health problems. Next, stratified random sampling was used to select a comparison group matched to the SMI group on age and education (separately for women and men). To increase statistical power, rather than selecting one comparison group case for each SMI case, we selected at a ratio of 5:1, resulting in a comparison group of 500 parents (335 mothers and 165 fathers).

Measures

Dependent variables

Self-rated health: Overall self-rated health was measured by an item asking "How would you rate your health at the present time?" (1 = *very poor* to 5 = *excellent*). Numerous studies have shown that this single item is significantly associated with mortality as well as morbidity (Idler & Benjamini, 1998).

Number of diagnosed illnesses: Respondents answered questions asking whether a medical professional ever diagnosed them with one of 16 illnesses, including anemia, asthma, arthritis, bronchitis, cancer, chronic liver trouble, diabetes, serious back trouble, heart trouble, high blood pressure, circulation problems, kidney/bladder problems, ulcer, allergies, multiple sclerosis, or colitis (1 = *yes*, 0 = *no*). A count of the number of diagnosed illnesses was computed for each respondent.

Cardiovascular problems: Respondents were asked whether they had experienced chest pain or shortness of breath in the past six months. If they answered yes, two more questions were asked regarding how often they had experienced these symptoms (1 = *monthly or less often* to 4 = *daily or more often*) and how much discomfort the symptoms had caused the respondent in the past six months (1 = *none* to 4 = *a lot*). Respondents also were asked whether they had been diagnosed with heart problems or high blood pressure by a medical professional and how much these conditions interfered with what they like to do (1 = *not at all* to 5 = *a great deal*). Following procedures developed by Warren et al. (2008), the items

were scaled 0 to 10 (0 = *none of these four cardiovascular health problems* to 10 = *respondent experienced both symptoms daily with a lot of discomfort and was diagnosed with heart trouble and high blood pressure that interfered a great deal with what the respondent liked to do*).

Musculoskeletal health problems: Respondents were asked whether they had experienced aching muscles, stiff/swollen joints, or back pain/strain in the past six months. If they answered yes, two more questions were asked regarding how often they had experienced these symptoms (1 = *monthly or less often* to 4 = *daily or more often*) and how much discomfort the symptoms had caused in the past six months (1 = *none* to 4 = *a lot*). Respondents also were asked whether they had been diagnosed with serious back trouble by a medical professional and how much the back trouble interfered with what they like to do (1 = *not at all* to 5 = *a great deal*). Following procedures developed by Warren et al. (2008), the items were scaled 0 to 10 (0 = *none of these four musculoskeletal health problems* to 10 = *respondent experienced all three symptoms daily with a lot of discomfort and was diagnosed with serious back trouble that interfered a great deal with what the respondent liked to do*).

Independent variables

Parenting status: Parenting status was coded as a dichotomous variable depending on whether the respondent had any child with a SMI defined as bipolar disorder, schizophrenia, or major depression if the depression was accompanied by a hospitalization or resulted in functional impairments (1 = *parent of a child with SMI*, 0 = *comparison parent*).

Work schedule flexibility: Schedule flexibility at the workplace was assessed by an item asking the respondent whether he/she could decide when to come to work and when to leave (1 = *yes*, 0 = *no*).

Negative work-to-family spillover: Respondents were asked to rate the following three items to assess negative spillover from work to family life: “To what extent do you agree that your job reduces the amount of time you can spend with the family?”, “To what extent do you agree that problems at work make you irritable at home?”, and “To what extent do you agree that your job takes so much energy you don’t feel up to doing things that need attention at home?” (1 = *strongly disagree* to 5 = *strongly agree*). The mean of the three items was computed, with a higher score indicating a greater level of negative spillover from work to family.

Control variables: Background variables associated with the physical health of adults were controlled for in all analyses. These included the respondent’s age and socioeconomic status (SES; Marmot & Wilkinson, 2005), marital status (Liu & Umberson, 2008), and the number of children in a family (Weng et al., 2004). Also, we controlled for whether the respondent lived with the “target” child. For respondents with children with SMI, the target child was the child with SMI. For the comparison group, as part of the WLS survey methodology, the researchers randomly selected one child from among the children of the WLS respondent and a series of questions were asked about this child including whether the child lived with the respondent. This child was designated the “target” child for the comparison group.

Data Analysis

Multiple regression models were estimated to examine the effects of work schedule flexibility and negative spillover from work to family life on each physical health outcome, controlling for age, SES, marital status, number of children, and co-residence status with the target child. In each model, interactions between parent status and work flexibility and

work-to-family spillover (i.e., parenting status x work schedule flexibility, parenting status x negative work to family spillover) were added to investigate the moderating effects of parenting status on the associations between work flexibility and work-to-family spillover and the physical health of parents. All models were estimated separately for mothers and fathers. Since the WLS represents a simple random sample of one-third of the 1957 graduating class and randomly selected siblings, no weights are applied to the data.

Results

Table 1 presents descriptive statistics for the parents of children with SMI and parents in the comparison group; results for mothers and fathers are shown separately. There were no differences in age, but there were significant differences in the number of children, marital status, and co-residence status between mothers of adult children with SMI and mothers in the comparison group. The mean age of the mothers was 54 in both groups. Mothers of children with SMI had more children (3.8 vs. 3.3), were less likely to be married (63% vs. 78%), and were more likely to be living with the target child (25% vs. 13%) compared to the mothers of children without SMI. Occupational SES, work schedule flexibility, and the level of negative work-to-family spillover were comparable between the two groups of mothers. Regarding the health outcomes, there was a significant difference in the number of diagnosed illnesses: mothers of adult children with SMI self-reported more diagnosed illnesses than mothers with unaffected adult children. The other health outcomes were not significantly different between the two groups.

With regard to the fathers of adult children with SMI and comparison fathers with nondisabled adult children, there were no differences in either demographic characteristics or work-related characteristics. Overall, fathers were about 53 years old and had 3 children, approximately 90% were married, somewhat fewer than 20% were living with the target child, and a little under 60% had flexibility in their work schedule. The physical health of the fathers did not differ between the two groups, with the exception of musculoskeletal health problems; fathers of children with SMI reported more musculoskeletal health problems than the fathers of unaffected children.

Predicting Maternal Health

Table 2 presents the results of regression analyses examining the effects of perceived work flexibility and work-family spillover on mothers' physical health, with the moderating influence of parenting status (having a child with SMI vs. not). Model 1 shows the main effects of parenting status, work flexibility, and negative work-to-family spillover. Although we hypothesized that mothers of adult children with SMI would report poorer health outcomes than the comparison group, there were no associations between parenting status and the health variables. Similarly, the main effect of work flexibility was largely unrelated to the health outcomes, with one exception; unexpectedly, mothers with higher levels of work flexibility reported more diagnosed illnesses. In contrast, negative work-to-family spillover was significantly associated with all health outcomes such that mothers with greater work-to-family spillover reported poorer self-rated health, a greater number of diagnosed illnesses, more cardiovascular problems, and more musculoskeletal problems.

The results in Model 2 portray two interaction effects (work flexibility x parenting status; negative work-to-family spillover x parenting status) on mothers' musculoskeletal health problems and cardiovascular health problems. As shown in Figure 1, mothers of adult children with SMI who had schedule flexibility at work reported lower levels of musculoskeletal health problems compared to mothers who had adult children with SMI and no work schedule flexibility, but there was no association between work schedule flexibility and musculoskeletal health problems among mothers who did not have children with SMI.

The results also showed a significant interaction effect of work-to-family spillover and parenting status on one aspect of mothers' health. As shown in Figure 2, for mothers of an adult child with SMI, higher levels of negative work-to-family spillover were significantly associated with a greater number of cardiovascular health problems as compared to those reporting low levels of work-to-family spillover. There were no significant group differences in the effects of work flexibility or work-family spillover on self-rated health and number of diagnosed illnesses.

Regarding the control variables, in general, the results indicated that mothers who had higher occupational SES had better health profiles: these mothers had better self-rated health, fewer cardiovascular health problems, and fewer musculoskeletal health problems than mothers with lower occupational SES. Married mothers had fewer diagnosed illnesses than mothers not currently married. None of the other control variables were significantly associated with health outcomes in working mothers.

Predicting Paternal Health

Table 3 presents the results of regression analyses examining the effects of family characteristics, work flexibility, and work-family spillover on fathers' physical health, with the moderating influence of parenting status. Model 1 presents the main effects of parenting status, work flexibility, and work-family spillover. As hypothesized, fathers of adult children with SMI reported more musculoskeletal health problems than comparison fathers, but did not differ with respect to the other health outcomes. Work flexibility was not associated with any health outcomes as a main effect, but negative work-to-family spillover was significantly associated with self-rated health of working fathers.

Consistent with hypothesis 2, all predicted interaction effects between work schedule flexibility and parenting status on fathers' health were significant, including working fathers' self-rated health, number of diagnosed illnesses, cardiovascular health problems, and musculoskeletal health problems. Figure 3 illustrates that fathers of adult children with SMI who had flexible work schedules reported better self-rated health than their peers who had adult children with SMI but whose work schedules were not flexible. In contrast, although comparison group fathers without work flexibility reported slightly better health than comparison group fathers with work flexibility, this difference was not significant. Figure 4 shows that fathers of adult children with SMI who reported greater work schedule flexibility indicated that they had fewer diagnosed illnesses than fathers whose adult children had SMI and whose work schedules were not flexible. Among the comparison group fathers who had nondisabled adult children, the number of diagnosed illnesses was comparable regardless of flexibility at work. Figure 5 illustrates that having schedule flexibility at work was also associated with reports of fewer cardiovascular health problems among fathers of adult children with SMI, but not among fathers with unaffected adult children. Figure 6 shows that fathers whose children had SMI and who had flexible work schedules reported lower levels of musculoskeletal health problems compared to fathers of children with SMI who did not have flexible schedules. In contrast, the musculoskeletal health of comparison fathers did not differ based on whether or not they had flexible work schedules.

The results also indicate that the interaction between negative work-to-family spillover and parenting status was significantly associated with fathers' health, specifically number of diagnosed illnesses and cardiovascular health problems. Figure 7 shows that higher levels of negative work-to-family spillover was associated with a greater number of diagnosed illnesses in fathers of adult children with SMI as compared to such fathers reporting lower levels of work-to-family spillover. In contrast, there was no difference in the numbers of diagnosed illnesses among comparison fathers who experienced higher or lower levels of

negative work-to-family spillover. Figure 8 illustrates that fathers of adult children with SMI who reported higher levels of negative work-to-family spillover indicated a greater number of cardiovascular problems compared to their counterparts with lower levels of negative work-to-family spillover. There was no association between the levels of work-to-family spillover and cardiovascular health problems among comparison fathers.

Regarding the control variables, the results showed that older fathers were less healthy than their younger counterparts: older fathers had poorer self-rated health and more diagnosed illness than younger fathers. Fathers with higher occupational SES reported better self-rated health than fathers with lower occupational SES.

Discussion

Guided by ecological systems theory, the present study examined the effects of work flexibility and work-to-family spillover on the health of parents of adult children with SMI. In general, work-to-family spillover (a work and family mesosystem factor) and working in a position without flexibility in one's schedule (a work microsystem factor) had a more detrimental impact on health among parents of adult children with SMI than among parents in the comparison group, which supports our hypothesis. Work schedule flexibility was associated with better health outcomes for both fathers and mothers of adult children with SMI. Among fathers of adult children with SMI, those who reported flexible work schedules had better health profiles than those who did not perceive their work schedules as flexible (better self-rated health, fewer diagnosed illnesses, fewer cardiovascular health problems, and fewer musculoskeletal health problems). Among mothers of adult children with SMI, those with flexible work schedules reported fewer musculoskeletal problems than those without flexible schedules. At higher levels of negative work-to-family spillover, mothers of adult children with SMI reported significantly more cardiovascular health problems than mothers in the comparison group. Fathers of adult children with SMI who experienced more negative work-to-family spillover indicated significantly more diagnosed illnesses and more cardiovascular problems than fathers in the comparison group. These results provide evidence that the physical health of parents of adult children with SMI is more vulnerable to the adverse influence of the lack of work schedule flexibility and to the spillover of stress from work to family life than parents of adult children without disabilities. The results revealing the health effects of both microsystem (e.g., parent a child with DD, work schedule flexibility) and mesosystem factors (e.g., work-family spillover) also support the assertion of ecological systems theory that various subsystems in which individuals are embedded influence individual developmental outcomes not only via direct impacts but through their interactions with one another (Bronfenbrenner & Morris, 1986).

Unexpectedly, work schedule flexibility was significantly associated with more diagnosed illnesses among mothers regardless of parenting status. Supplemental analysis showed that mothers who had work schedule flexibility also had higher occupational SES compared to the mothers whose work did not allow a flexible work schedule. It is possible that working women in higher status positions are exposed to greater job stress due to increased demands and responsibilities at work. Given empirical evidence linking stress and health problems (Juster, McEwen, & Lupien, 2009) and findings that working women are more vulnerable to the adverse effects of job strain than working men (McDonough & Walters, 2001), working mothers in higher SES occupations, who are more likely to have flexible work schedules, might be at an increased risk of health problems. Alternatively, given the cross-sectional nature of the study, it is quite plausible that working mothers with higher SES are able to negotiate more flexible work schedules when they experience health problems, because employers might be willing to accommodate these mothers' needs in order to retain

qualified employees. Future studies using longitudinal data would improve the understanding of the causal nature of these associations.

In addition, although we predicted poorer health profiles of parents of adult children with SMI than comparison parents, the results showed no group differences in health outcomes. Considering that previous empirical evidence has shown poorer health and well-being among parents of adult children with SMI, these results were unexpected. Mothers who had an adult child with SMI and remained in the work force into their mid-50s may be a unique subgroup; in fact earlier studies have shown that parents of a child with SMI frequently change their work or career patterns or quit their jobs and stay home to accommodate the needs of their child with SMI (Rosenzweig et al., 2002).

Furthermore, whereas approximately 91% of fathers of adults with SMI were married, only 62.7% of the mothers of adults with SMI were married. One criterion for this study was that the respondent had to be working full time. Whereas in the WLS marital status has little affect on whether men are working full time or not, this is not the case for women. Whereas only 44% of married women were working full-time, 70% of divorced women were working full-time in 1992/94. The pressures to work full-time may be even great for divorced women who have a child with SMI because of the additional costs of caring for a child with a condition.

Overall, the findings show that parents of adult children with SMI are more susceptible to the impacts of work-related stress spilling over into family life than the norm. Family clinicians are increasingly realizing the benefits of offering families psychoeducation to help them learn about serious mental illness and strategies to cope with their child's behavior problems and needs for assistance. Though these programs are successful in teaching families successful strategies to better cope with their child's problems, there is very little emphasis on how the world of work may be contributing to the stress of caregiving. Our findings suggest that work related stress may increase stress at home, which takes a toll not only on parental caregivers but it may also affect the quality of life of the individual with SMI. It would be desirable for psychoeducation programs for families of persons with SMI to be strengthened to include a focus on work place stress management.

With regard to potential policy changes, our findings suggest that increasing work schedule flexibility would be especially beneficial to working parents who have an adult child with SMI. In previous studies, parents of children with SMI have noted the importance of work flexibility for balancing work and caregiving demands. These parents reported choosing jobs with fewer benefits in order to secure the time and flexibility necessary to manage care duties (Rosenzweig et al., 2002). Given the previous empirical evidence that increased work schedule flexibility is associated with less work-family conflict (Moen et al., 2011), the findings from the current study suggest that providing work schedule flexibility would be especially beneficial for working parents who have a child with SMI.

Some limitations of this study must be noted. The WLS sample consists of mostly non-Hispanic Whites who have obtained at least a high school education. Thus, although the sample was representative of the Wisconsin population in the mid-twentieth century, it does not represent the current population. In addition, although the WLS is a longitudinal study that has been conducted over 40 years, the present analysis used a cross-sectional approach because complete information about children's SMI status was not available in the previous wave (1975/1977), and because the majority of parents had retired by the following wave (2004/2006). The use of cross-sectional data, however, entails inevitable problems for interpreting causality. Further, the analysis of data collected in the 1990s might limit the generalizability and applicability of the results to current work and family situations of

parents of children with SMI. The relatively small sample of parents of children with SMI (N=100) also warrants caution with regard to the generalization of the results. Finally, the data were collected as part of large scale longitudinal survey. There are inherent limitations to surveys which are based on respondent self-reports. Future studies that might address some of these limitations by incorporating biomarkers into the measurement of health. In addition, an examination of the effects of other subsystems in ecological systems theory (beyond microsystems and mesosystems; e.g., macrosystem factors, such as policies related to families with adult children with SMI) would help increase the theoretical interpretation of the health predictors of working parents of adult children with SMI.

Despite these limitations, the present study contributes to the literature on the health of parents of children with SMI by using a systems approach to examine the influence of work flexibility and work-family conflicts on the physical health of these parents, and by using a probability sample to eliminate the potential limitations of selection bias. The results have significant implications for family policy and family life practitioners. Social policies that encourage work schedule flexibility for families caring for children with disabilities, and interventions that reduce the spillover of stress from the work place to the home could help mitigate the burdens experienced by parents who have children with SMI and would consequently improve the well-being of these parents.

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Figure 1.
Predicted Musculoskeletal Health Problems by Work Flexibility for Mothers of Children with SMI and Comparison Group Mothers

Figure 2.
Predicted Cardiovascular Health Problems by Negative Work-to-Family Spillover Levels for Mothers of Children with SMI and Comparison Group Mothers

Figure 3.
Predicted Self-rated Health by Work Flexibility for Fathers of Children with SMI and Comparison Group Fathers

Figure 4.
Predicted Number of Diagnosed Illnesses by Work Flexibility for Fathers of Children with SMI and Comparison Group Fathers

Figure 5.
Predicted Cardiovascular Health Problems by Negative Family-to-Work Spillover Levels for Fathers of Children with SMI and Comparison Group Fathers

Figure 6.
Predicted Musculoskeletal Health Problems by Work Flexibility for Fathers of Children with SMI and Comparison Group Fathers

Figure 7.
Predicted Number of Diagnosed Illnesses by Negative Work-to-Family Spillover Levels for Fathers of Children with SMI and Comparison Group Fathers

Figure 8.
Predicted Cardiovascular Health Problems by Negative Work-to-Family Spillover Levels for Fathers of Children with SMI and Comparison Group Fathers

Table 1

Descriptive Statistics of Analytic Sample

	Mothers (N = 402)			
	SMI (N = 67)	Comparison (N = 335)	Range	Group difference
	<u>M (SD)</u>	<u>M (SD)</u>		
Age	53.6 (3.3)	53.7 (3.2)	38–64	<i>ns</i>
Number of children	3.8 (1.8)	3.3 (1.5)	1–9	<i>p < .05</i>
% Married	62.7	78.4		<i>p < .01</i>
% Coresidence w/child	25.4	12.9		<i>p < .001</i>
Occupational SES	54.0 (20.5)	51.0 (20.1)	8.7–84	<i>ns</i>
Work schedule flexibility	.42 (.50)	.42 (.49)	0–1	<i>ns</i>
Negative W → F spillover	2.9 (.78)	2.7 (.81)	0–5	<i>ns</i>
Self-rated health	4.2 (.62)	4.2 (.67)	1–5	<i>ns</i>
Number of diagnosed illnesses	1.8 (1.7)	1.3 (1.5)	0–14	<i>p < .05</i>
Cardiovascular health problems	.23 (.67)	.13 (.40)	0–3.24	<i>ns</i>
Musculoskeletal health problems	1.1 (2.0)	.79 (1.6)	0–10	<i>ns</i>

	Fathers (N = 198)			
	SMI (N = 33)	Comparison (N = 165)	Range	Group difference
	<u>M (SD)</u>	<u>M (SD)</u>		
Age	53.1 (3.5)	53.1 (3.4)	39–63	<i>ns</i>
Number of children	2.9 (1.2)	2.9 (1.4)	1–9	<i>ns</i>
% Married	90.9	89.1		<i>ns</i>
% Coresidence w/child	16.7	18.5		<i>ns</i>
Occupational SES	58.0 (25.1)	51.1 (25.7)	4.9–92.3	<i>ns</i>
Work schedule flexibility	.58 (.50)	.55 (.50)	0–1	<i>ns</i>
Negative W → F spillover	3.1 (.86)	2.7 (.83)	0–5	<i>ns</i>
Self-rated health	4.1 (.82)	4.2 (.59)	1–5	<i>ns</i>
Number of diagnosed illnesses	1.2 (2.1)	1.1 (1.7)	0–11	<i>ns</i>
Cardiovascular health problems	.29 (.94)	.20 (.55)	0–3.75	<i>ns</i>
Musculoskeletal health problems	1.3 (2.2)	.54 (1.1)	0–9.38	<i>p < .01</i>

Table 2
Regression Analysis of Predictors of Physical Health of Mothers of children with SMI and Comparison Mothers

	Self-rated Health		Number of Diagnosed Illnesses		Cardiovascular Health Problems		Musculoskeletal Health Problems	
	Model1 b (SE)	Model2 b (SE)	Model1 b (SE)	Model2 b (SE)	Model1 b (SE)	Model2 b (SE)	Model1 b (SE)	Model2 b (SE)
Age	-.007 (.012)	-.007 (.012)	.026 (.028)	.024 (.028)	.010 (.010)	.009 (.009)	.044 (.035)	.048 (.035)
Occupational SES	.005* (.002)	.004* (.002)	-.003 (.004)	-.003 (.004)	-.004** (.001)	-.004** (.001)	-.013** (.005)	-.012* (.005)
Marital status (1 = married)	.067 (.080)	.057 (.081)	-.355* (.181)	-.334 (.181)	-.059 (.058)	-.037 (.057)	-.214 (.209)	-.217 (.209)
Number of children	.010 (.022)	.010 (.022)	-.004 (.049)	-.005 (.049)	.014 (.016)	.013 (.015)	-.103 (.056)	-.102 (.056)
Coresidence w NN or target child (1 = yes)	.072 (.095)	.075 (.096)	.198 (.214)	.208 (.215)	.035 (.068)	.039 (.067)	.228 (.248)	.187 (.247)
SMI vs. Comparison (1 = SMI)	.026 (.093)	.021 (.122)	.276 (.209)	.097 (.273)	.045 (.067)	-.054 (.085)	.194 (.245)	.622* (.312)
Work schedule flexibility	-.021 (.071)	-.026 (.077)	.410** (.159)	.343* (.173)	.097 (.050)	.063 (.054)	.045 (.182)	.222 (.196)
Negative W → F spillover	-.180*** (.042)	-.158** (.046)	.411*** (.095)	.375*** (.104)	.122*** (.030)	.084** (.033)	.409*** (.110)	.380*** (.120)
MI x Work schedule flexibility		.072 (.183)		.334 (.411)		.145 (.129)		-.1.199* (.482)
MI x Negative W → F spillover		-.141 (.116)		.195 (.260)		.220** (.081)		.284 (.301)
Constant	4.178	4.189	1.411	1.419	.157	.150	.954	.883
R ²	.070	.074	.092	.096	.089	.113	.080	.097

*
p < .05.

**
p < .01.

p < .001.

Table 3
Regression Analysis of Predictors of Physical Health of Fathers of children with SMI and Comparison Fathers

	Self-rated Health		Number of Diagnosed Illnesses		Cardiovascular Health Problems		Musculoskeletal Health Problems	
	Model1 b (SE)	Model2 b (SE)	Model1 b (SE)	Model2 b (SE)	Model1 b (SE)	Model2 b (SE)	Model1 b (SE)	Model2 b (SE)
Age	-.031* (.018)	-.039* (.019)	.109* (.047)	.140** (.046)	.031 (.022)	.046* (.022)	-.005 (.046)	.026 (.045)
Occupational SES	.006** (.002)	.006** (.002)	-.004 (.005)	-.003 (.005)	.000 (.002)	.000 (.002)	-.004 (.005)	-.004 (.005)
Marital status (1 = married)	-.153 (.154)	-.129 (.154)	-.429 (.385)	-.352 (.375)	.052 (.185)	.058 (.180)	-.091 (.384)	-.126 (.376)
Number of children	-.017 (.034)	-.017 (.033)	.012 (.084)	.035 (.082)	-.003 (.039)	.002 (.038)	-.043 (.084)	-.043 (.082)
Coresidence w NN or target child (1 = yes)	.156 (.117)	.180 (.118)	.486 (.292)	.559* (.287)	-.132 (.134)	-.133 (.132)	-.423 (.282)	-.483 (.278)
SMI vs. Comparison (1 = SMI)	-.015 (.126)	-.336 (.189)	.364 (.309)	.846 (.460)	.136 (.145)	.548* (.212)	.688* (.298)	1.735*** (.445)
Work schedule flexibility	-.084 (.106)	-.182 (.113)	-.210 (.266)	.004 (.276)	-.081 (.123)	.061 (.129)	-.262 (.258)	.076 (.271)
Negative W → F spillover	-.141* (.056)	-.133* (.060)	.144 (.139)	-.048 (.146)	.068 (.066)	.009 (.070)	.271 (.138)	.218 (.147)
MI x Work schedule flexibility		.594* (.258)		-1.410* (.622)		-.896** (.288)		-1.990** (.601)
MI x Negative W → F spillover		-.061 (.153)		1.264** (.374)		.394* (.173)		.409 (.362)
Constant	4.380	4.413	1.397	1.173	.223	.128	.899	.734
R ²	.109	.138	.073	.146	.032	.103	.092	.154

*
p < .05.

**
p < .01.

p < .001.