

Work Safety During Early Fatherhood

by Gary Mellor, BN, MN, and Winsome St John, RN, PhD

ABSTRACT

Fathers are increasingly expected to engage in infant care. The early postpartum period has been described as a time when work-family conflict, lack of sleep, and fatigue are prominent themes. Research has demonstrated that these themes can have a deleterious effect on work safety. Lack of sleep and fatigue have been linked to workplace accidents, yet few studies have specifically investigated work-family conflict, sleep, and fatigue among men with infants. The need exists to specifically study and measure work-family conflict, sleep deprivation, and fatigue in relation to early fatherhood. Such research could have a direct effect on occupational health nursing practice.

During the past decade, fathers have been increasingly recognized for the contributions they make to family life, and they have been increasingly expected to engage in more parental activities. Currently, however, a paucity of research exists investigating how working fathers with infants, known as early fatherhood, balance work and family.

Researchers have found a trend for fathers to engage more in infant care (Bielby & Bielby, 1988; McVeigh & St John, 2003). According to the Australian Bureau of Statistics (ABS), fathers have reported engaging in 28 hours of direct infant care per week (ABS, 2006). This is in addition to the long work hours of early fathers. In

Australia, the ABS (2006) highlighted that, on average, fathers worked 43 hours per week, with 33% working more than 50 hours and 16% working 60 hours or more. In relation to early fatherhood, Tanaka and Waldfogel (2007) recently reported similar results, with 61% of fathers with babies working between 30 and 50 hours and 29% working more than 50 hours. Therefore, time committed to infant care might have health consequences for these fathers. For example, the expectation for long work hours and “being there” for the infant might create a degree of work-family conflict for fathers (Glezer, 2004). Investigations of fathers conducted by Perry-Jenkins and Crouter (1990) and Yeung, Sandberg, Davis-Kean, and Hofferth (2001) revealed an inverse relationship between the need to provide financial security for their family and the time they engaged in household tasks.

In early fatherhood, lack of sleep and fatigue also appear to be prominent concerns, with studies reporting that men expressed tiredness (Dye, 1998), stress (Russell et al., 1999), changes in mood (Newburn & MacMillan, 1998), and a lack of vitality (Gjerdingen & Center, 2003). According to Long and Johnson (2001), the outcomes of caring for a newborn baby are lack of sleep and exhaus-

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tion. These outcomes have the potential to affect work performance. As one father in a study by St John, Cameron, and McVeigh (2005) described, "It's just night after night. You just really need a good night's sleep to perform work . . . I think the whole pressures of work, the family, demands, financial position are all catching up on me" (p. 7).

Fatherhood, in relation to work safety, has clinical significance to many health professionals, including occupational health nurses. According to the ABS (2000), the rate of work injuries was somewhat higher for fathers than for men in general (64 vs. 60 per 1,000). No recent research has shown why this rate is higher. However, one reason might be that little research and scholarly discussion on the problems faced by early fathers who work and engage in parenting have been published. For example, research has demonstrated that sleep deprivation, fatigue, and work-family conflict can have deleterious effects on health and safety at work. During early fatherhood, engaging in parenting as well as paid work might predispose men to accidents and injuries.

REVIEW

This review sought research findings focused on the specific impact of early fatherhood on work-family conflict, sleep, fatigue, and work safety. Medical, nursing, occupational health and safety, and sociological databases were searched to find relevant published articles. National and international websites were also searched for related information as well as government reports and proceedings. The following key words were used for the comprehensive search: father (including new father, early fatherhood, and fatherhood), sleep (including sleep deprivation and excessive daytime sleepiness), fatigue (including exhaustion and tiredness), safety (including occupational health and safety, work injury, and work safety), and baby (including newborn, postpartum, and child). English and non-English articles, if translated into English, were included, with no limits regarding publication date. Identified articles were summarized, noting author, date, participant characteristics, research design, and findings (Table).

FINDINGS

Only 12 studies could be located that investigated fathers and work-family conflict, sleep, fatigue, and work safety. The studies provided a descriptive snapshot of the work-family conflict, sleep, and fatigue experienced by fathers and, in particular, how safety might be influenced by factors outside the workplace. All 12 studies identified sleep or fatigue among fathers, and three of the 12 studies identified work-family conflict among fathers. Seven of the studies investigated men during early fatherhood (1 to 8 weeks postpartum). Of those seven studies, two highlighted the fatigue early fathers experienced in meeting the expectations of work and family; four reported the lack of sleep and fatigue early fathers experienced due to infantile crying; and one identified that early fathers recognized the risk they faced driving while sleep deprived due to infantile crying. The studies provided a compelling

reason for early fathers to be considered a distinct group of workers needing to be investigated.

DISCUSSION

All of the studies identified sleep and fatigue as issues for early fathers. Research has shown that increasing sleep deprivation and fatigue result in decreased vigilance and psychomotor activity (Dinges et al., 1997; Grandjean, 1979; Heaton, Browning, & Anderson, 2008) as well as alterations in normal decision-making processes (Eastridge et al., 2003; Leonard, Fanning, Attwood, & Buckley, 1998; Sicard, 2001). Consequently, sleep deprivation and fatigue are viewed as risk factors for occupational accidents and have been studied in various occupations, including truck drivers (Howard et al., 2004; Machin, 2005; Masa, Rubio, & Findley, 2000), health professionals (Eastridge et al., 2003; Gold et al., 1992; Puvanendran, Venkatramani, Jain, & Farid, 2005), and shippers (Phillips, 2000; Sanquist, Raby, Forsythe, & Carvalhais, 1997).

Three studies identified work-family conflict as a concern for early fathers. The negative health outcomes of work-family conflict have been well described. Work-family conflict has also been shown to decrease job, family, and life satisfaction (Grandey & Cropanzano, 1999); increase psychological strain and distress (Bellavia & Frone, 2005); lead to depression and hypertension (Frone, Russell, & Barnes, 1996; Frone, Russell, & Cooper, 1997); and result in anxiety, substance dependence, alcohol abuse, and psychiatric disorders (Frone, 2000; Frone, Barnes, & Farrell, 1994; Frone et al., 1996, 1997). Many of these health issues impact the safety of workers.

Nine of the 12 studies used a quantitative approach. However, only one study used a measurable scale to identify work-family conflict. The remaining eight quantitative studies measured work-family conflict, sleep, or fatigue in statistically descriptive terms, with no opportunity for inferential analysis. However, inferential analysis might have been possible because many of the quantitative studies had large samples (Condon, Boyce, & Corkindale, 2004; Gjerdingen & Center, 2003; Hill, Hawkins, Martinson, & Ferris, 2003; Newburn & MacMillan, 1998; Russell et al., 1999). Of the 12 studies, three used qualitative methods in which work-family conflict, sleep, and fatigue were measured indirectly. None of these three studies investigated these factors as specific areas for thematic analysis.

The review highlighted the need to specifically study the work-family conflict, sleep, and fatigue of men in early fatherhood. However, such studies should be quantified to statistically establish any relationship with work safety. From a qualitative perspective, the lived experience of fathers who report sleep deprivation and fatigue is an equally significant area of investigation. Work-family conflict, sleep deprivation, and fatigue have subjective meaning (McQueen & Mander, 2003; Milligan, Lenz, Parks, Pugh, & Kitzman, 1996) and thus the expressive nature of these factors also impacts work.

Researchers have demonstrated interest in investigating the wellness of workers and their families. For ex-

Table
Review of the Literature on Fathers' Sleep, Fatigue, and Work Safety

Study	Sample, Design, and Country	Findings
Dyer, 1963	First-time parents; quantitative survey (<i>n</i> = 32); United States	Work-family conflict: 83% of parents were "in crisis." Sleep: 50% reported a loss of sleep in the first 6 to 8 weeks postpartum.
Anderson, 1996	Fathers with 2-month-old infants; qualitative interview (<i>n</i> = 14); Canada	Work-family conflict and fatigue: fathers expressed fatigue due to the pressures of work and meeting the needs of their spouses and new babies in the first 8 weeks after their babies were born.
Newburn & MacMillan, 1998	Fathers; quantitative survey (<i>n</i> = 420); United Kingdom	Fatigue: 93% of fathers expressed tiredness and their most commonly expressed difficulty was crying babies.
Russell et al., 1999	Fathers; telephone survey (<i>n</i> = 1,000); Australia	Fatigue: 60% of fathers reported feeling physically drained; 30% had high levels of stress.
Nyberg & Stuernehufvud, 2000	Couples with babies; telephone survey (<i>n</i> = 20); Sweden	Sleep and fatigue: sleep and fatigue were increasing concerns and were based around responding to the needs of the crying baby.
Long & Johnson, 2001	Adults from 14 families; ethnography, questionnaires, observations, and interviews (<i>n</i> = 25); United Kingdom	Safety and sleep: investigation of the effects of excessive infantile crying; fathers recognized the risks of driving while exhausted due to chronic shortage of sleep.
Elek, Hudson, & Fleck, 2002	Couples with children; quantitative survey (<i>n</i> = 44); United States	Sleep and fatigue: 60% of fathers reported less than 7 hours of sleep and expressed greater fatigue at night than mothers; fathers' fatigue increased significantly from the baby's birth to the fourth week postpartum.
Hill, Hawkins, Martinson, & Ferris, 2003	Working fathers and mothers; quantitative survey (<i>n</i> = 7,692); international	Work-family conflict and fatigue: 87% of working fathers experienced work-family conflict, reporting that they felt just as physically drained at home as they did at work.
Gjerdingen & Center, 2003	First-time fathers and mothers; self-report questionnaire (<i>n</i> = 129 men and 132 women); United States	Sleep: fathers' hours of sleep per night were measured during pregnancy (<i>M</i> = 7.4 hours) and 6 months postpartum (<i>M</i> = 7.2 hours).
Condon, Boyce, & Corkindale, 2004	First-time fathers; self-report questionnaire (<i>n</i> = 312); Australia	Sleep: fathers reported a lack of sleep had a deteriorating effect on physical and mental health.
Gay, Lee, & Lee, 2004	Couples; randomized, controlled trial 1 month postpartum (<i>n</i> = 72); United States	Sleep: fathers received less sleep than mothers and had greater fatigue 1 month postpartum; fathers averaged 424 minutes (7 hours) of total sleep per night.
St John, Cameron, & McVeigh, 2005	First-time and subsequent fathers; qualitative interview (<i>n</i> = 18); Australia	Sleep and fatigue: fathers expressed specific stressors in the first 6 weeks after their babies' birth, specifically tiredness from broken sleep and crying baby.

ample, studies have investigated the relationship between work stress and family life (McGovern & Matter, 1992; Swanson, Power, & Simpson, 1998; Walker, Fleschler, & Heaman, 1998), and the health of working mothers with babies and their babies' childcare needs (Albright,

1992; Gates & O'Neil, 1990; Killien, 1998; McGovern et al., 2007). However, only one of the 12 studies (Long & Johnson, 2001) specifically focused on the safety of early fathers as they balance work and family, and the consequences to their work safety.

IN SUMMARY

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- 1 The time men commit to infant care and work may have health consequences due to work-family conflict, lack of sleep, and fatigue. Also, these concepts can have deleterious effects on safety at work.
- 2 Research and discussion have been limited related to the difficulties experienced by men who work and engage in infant care. This study identified only 12 previous studies. Thus, further research is necessary.
- 3 Occupational health nurses can assist men during early fatherhood despite this being a "blind spot" in occupational health nursing practice.

Occupational health nurses are in a unique position to identify whether early fatherhood has the potential to impact men's work safety and, consequently, occupational health nursing practice. Research that specifically measures work-family conflict, sleep, and fatigue in early fatherhood will assist occupational health nurses in quantifying the occupational risks for men in early fatherhood and assessing whether early fathers require specific injury prevention and health promotion strategies.

For working early fathers to achieve greater work-family balance, lessen sleep deprivation, and achieve fatigue recovery, Australian occupational health nurses should view men's lives outside of work as a factor impacting men's safety in the workplace. Mellor and St John (2007) revealed that the specific task of enhancing the health of workers and their families was ranked by Australian occupational health nurses as the second least important activity they performed currently or in the future. Mellor and St John (2009) reported that managers believed that little attention should be paid to occupational health nurses providing care to families. The work safety of fathers can therefore be viewed as a "blind spot" in occupational health and safety because fatherhood is not recognized as a workplace safety issue. Consequently, to meet the safety needs of working men during early fatherhood, Australian occupational health nurses could advocate on their behalf and negotiate with managers regarding fatigue, sleep, and work and family needs.

The early months of fatherhood can be a challenge as men attempt to balance work and family commitments. Current research acknowledges that fathers experience work-family conflict, sleep deprivation, and fatigue, but

the research is descriptive and little is known about the impact of these factors on the work safety of early fathers. To address this shortfall, specific research is needed centered on the physical cost of work and parenting commitments of early fathers. Fathers represent a substantial portion of the working population. The Human Rights and Equal Opportunity Commission (2005) has highlighted the prominence of the provider role among men, with the employment rate of married men during early fatherhood being 89.5%. Research into their work safety will improve understanding of their health and safety needs. Occupational health nurses can play a substantial role in conducting such research and using research data to inform their occupational health nursing practice and the practice of their occupational health and safety colleagues.

REFERENCES

- Albright, A. (1992). Attitude towards working mothers: Accommodating the needs of mothers in the work force. *AAOHN Journal, 40*(10), 490-495.
- Anderson, A. M. (1996). The father-infant relationship: Becoming connected. *Journal of the Society of Pediatric Nurses, 1*(2), 83-92.
- Australian Bureau of Statistics. (2000). *Work-related injuries* (Catalogue No. 6324.0). Retrieved from [www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/BD0420FFFA7A475DCA256AE300032B17/\\$File/63240_sep%202000.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/BD0420FFFA7A475DCA256AE300032B17/$File/63240_sep%202000.pdf)
- Australian Bureau of Statistics. (2006). *Australian social trends* (Catalogue No. 4102.0). Retrieved from www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features40March%202009
- Bellavia, G. M., & Frone, M. R. (2005). Work-family conflict. In J. Barling & M. R. Frone (Eds.), *Handbook of work stress* (pp. 113-147). Thousand Oaks, CA: Sage.
- Bielby, D., & Bielby, W. (1988). She works hard for the money: Household responsibilities and allocation at work. *The American Journal of Sociology, 93*, 1031-1059.
- Condon, J., Boyce, P., & Corkindale, C. (2004). The first-time fathers study: A prospective study of the mental health and wellbeing of men during the transition to parenthood. *Australian and New Zealand Journal of Psychiatry, 38*, 56-64.
- Dinges, D., Pack, F., Williams, K., Gillen, K., Powell, J., Ott, G., et al. (1997). Cumulative sleepiness, mood disturbances, and psychomotor vigilance performance decrements during a week of sleep restricted to 4-5 hours per night. *Sleep, 20*(4), 267-277.
- Dye, P. (1998). *The father lode: A new look at becoming and being a dad*. St. Leonards, New South Wales, Australia: Allen & Unwin.
- Dyer, E. (1963, May). Parenthood as crisis: A re-study. *Marriage and Family Living, 196*-201.
- Eastridge, B. J., Hamilton, E. C., O'Keefe, G. E., Rege, R. V., Valentine, R. J., Jones, D. L., et al. (2003). Effect of sleep deprivation on the performance of simulated laparoscopic surgical skill. *The American Journal of Surgery, 186*, 169-174.
- Elek, S. M., Hudson, D. B., & Fleck, M. O. (2002). Couples' experiences with fatigue during the transition to parenthood. *Journal of Family Nursing, 8*(3), 211-240.
- Frone, M. R. (2000). Work-family conflict and employee psychiatric disorders: The National Comorbidity Survey. *Journal of Applied Psychology, 85*(6), 888-895.
- Frone, M. R., Barnes, G. M., & Farrell, M. P. (1994). Relationship of work-family conflict on substance use among employed mothers: The role of negative affect. *Journal of Marriage and the Family, 56*(4), 1019-1028.
- Frone, M. R., Russell, M., & Barnes, G. M. (1996). Work-family conflict, gender, and health-related outcomes: A study of employed parents in two community samples. *Journal of Occupational Health Psychology, 1*(1), 57-69.
- Frone, M. R., Russell, M., & Cooper, M. L. (1997). Relation of work-family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology, 70*, 325-335.

- Gates, D., & O'Neil, N. (1990). Promoting maternal-child wellness in the workplace. *AAOHN Journal*, 38(6), 258-263.
- Gay, C., Lee, K., & Lee, S. (2004). Sleep patterns and fatigue in new mothers and fathers. *Biological Research in Nursing*, 5(4), 311-318.
- Gjerdingen, D., & Center, B. (2003). First-time parents' prenatal to postpartum changes in health, and the relation of postpartum health to work and partner characteristics. *Journal of the American Board of Family Practice*, 16(4), 304-311.
- Glezer, H. (2004). *Work and family life: Reciprocal effects*. Retrieved from www.workandfamily.nsw.gov.au/strategy/expsem/hg.htm
- Gold, D. R., Rogacz, S., Bock, N., Tosteson, T. D., Baum, T. M., Speizer, F. E., et al. (1992). Rotating shift work, sleep, and accidents related to sleepiness in hospital nurses. *American Journal of Public Health*, 82(7), 1011-1014.
- Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior*, 54, 350-370.
- Grandjean, E. (1979). Fatigue in industry. *British Journal of Industrial Medicine*, 36, 175-186.
- Heaton, K., Browning, S., & Anderson, D. (2008). Identifying variables that predict falling asleep at the wheel among long-haul truck drivers. *AAOHN Journal*, 56(9), 379-385.
- Hill, J. E., Hawkins, A. J., Martinson, V., & Ferris, M. (2003). Studying working fathers: Comparing fathers' and mothers' work-family conflict, fit, and adaptive strategies in a global high-tech company. *Fathering*, 1(3), 239-261.
- Howard, M. E., Desia, A. V., Grunstein, R., Hukins, C., Armstrong, J. C., Joffe, D., et al. (2004). Sleepiness, sleep-disordered breathing, and accident risk factors in commercial vehicle drivers. *American Journal of Respiratory Critical Care Medicine*, 170(9), 1014-1020.
- Human Rights and Equal Opportunity Commission. (2005). *Striking the balance: Women, men, work, and family*. Sydney, New South Wales, Australia: Author.
- Killien, M. (1998). Postpartum return to work: Mothering stress, anxiety and gratification. *Canadian Journal of Nursing Research*, 30(3), 53-66.
- Leonard, C., Fanning, J., Attwood, J., & Buckley, M. (1998). The effect of fatigue, sleep deprivation, onerous working hours on the physical and mental well-being of pre-registration house officers. *International Journal of Medical Science*, 167(1), 22-25.
- Long, T., & Johnson, M. (2001). Living and coping with excessive infantile crying. *Journal of Advanced Nursing*, 34(2), 155-162.
- Machin, M. A. (2005). *Role of safety behaviour: What's the role of drivers' safety behaviour in preventing accidents? Centre for Organisational Research and Evaluation*. Toowoomba, Queensland, Australia: Department of Psychology, University of Southern Queensland.
- Masa, J. F., Rubio, M., & Findley, L. J. (2000). Habitually sleepy drivers have a high frequency of automobile crashes associated with respiratory disorders during sleep. *American Journal of Respiratory Critical Care Medicine*, 162, 1407-1412.
- McGovern, P., Dowd, B., Gjerdingen, D., Dagher, R., Ukestad, L., McCaffery, D., et al. (2007). Mothers' health and work-related factors at 11 weeks postpartum. *Annals of Family Medicine*, 5, 519-527.
- McGovern, P., & Matter, D. (1992). Work and family: Competing demands affecting working well being. *AAOHN Journal*, 41(1), 24-35.
- McQueen, A., & Mander, R. (2003). Tiredness and fatigue in the postnatal period. *Journal of Advanced Nursing*, 42(5), 463-469.
- McVeigh, C. A., & St John, W. (2003). *Transition to fatherhood: An Australian study*. Gold Coast, Queensland, Australia: Research Centre for Clinical Practice Innovation, Griffith University.
- Mellor, G., & St John, W. (2007). Towards emergent practice in Australian occupational health nursing: Occupational health nurses' perceptions of current and future areas of practice. *Journal of Advanced Nursing*, 58(6), 585-593.
- Mellor, G., & St John, W. (2009). Managers' perceptions of the current and future role of occupational health nurses in Australia. *AAOHN Journal*, 57(2), 79-87.
- Milligan, R. A., Lenz, E. R., Parks, P. L., Pugh, L. C., & Kitzman, H. (1996). Postpartum fatigue: Clarifying a concept. *Scholarly Inquiry for Nursing Practice: An International Journal*, 10(3), 279-291.
- Newburn, M., & MacMillan, M. (1998). Help, new dad emerging. *The Practising Midwife*, 1(1), 17-19.
- Nyberg, K., & Stuernhufvud, L. B. (2000). Mothers' and fathers' concerns and needs postpartum. *British Journal of Midwifery*, 8(6), 387-394.
- Perry-Jenkins, M., & Crouter, A. C. (1990). Men's provider-role attitudes: Implications for household work and marital satisfaction. *Journal of Family Issues*, 11(2), 136-156.
- Phillips, R. (2000). Sleep, watch keeping and accidents: A content analysis of incident at sea reports. *Transportation Research*, 3, 229-240.
- Puvanendran, K., Venkatramani, J., Jain, A., & Farid, M. (2005). Sleep deprivation in junior doctors-house officers in Singapore. *Industrial Health*, 43, 129-132.
- Russell, G., Barclay, L., Edgcombe, G., Donovan, J., Habib, G., Callaghan, H., et al. (1999). *Fitting fathers into families: Men and the fatherhood role in contemporary Australia*. Canberra: Commonwealth Department of Family and Community Services.
- Sanquist, T. F., Raby, M., Forsythe, A., & Carvalhais, A. B. (1997). Work hours, sleep patterns and fatigue among merchant marine personnel. *Journal of Sleep Research*, 6, 245-251.
- Sicard, B. (2001). Risk propensity assessment in military special operations. *Military Medicine*, 166(10), 871-874.
- St John, W., Cameron, C., & McVeigh, C. A. (2005). Meeting the challenge of new fatherhood: The early weeks. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 34(2), 1-10.
- Swanson, V., Power, K. G., & Simpson, R. J. (1998). Occupational stress and family life: A comparison of male and female doctors. *Journal of Occupational and Organizational Psychology*, 71, 237-260.
- Tanaka, S., & Waldfogel, J. (2007). Effects of parental leave and work hours on fathers' involvement with their babies. *Community, Work & Family*, 4(10), 409-426.
- Walker, L. O., Fleschler, R. G., & Heaman, M. (1998). Is a healthy lifestyle related to stress, parenting confidence, and health symptoms among new fathers? *Canadian Journal of Nursing Research*, 30(3), 21-36.
- Yeung, W. J., Sandberg, J. F., Davis-Kean, P. E., & Hofferth, S. L. (2001). Children's time with fathers in intact families. *Journal of Marriage and Family*, 63, 136-154.

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