As part of the 20th anniversary celebration for the *Journal of Occupational Health Psychology* (JOHP), this article reviews the literature on work-family with a special emphasis on research published in JOHP and that with health-related implications. We provide a retrospective overview of work-family research, tracing key papers and major theoretical constructs and themes. We examine the research needs identified by Westman and Piotrkowski (1999) and offer an assessment of the extent that work-family research has addressed those needs. Then we move on to discuss contemporary issues in the field today that constitute directions for future research. Specifically we discuss intervention studies, multilevel approaches, temporality and dynamic change, managerial perspectives, and diverse work settings.

**Keywords:** work-family, work-family conflict, work-family enrichment, health, diversity

Interest in work-family issues has exploded over the past 20 years. Although once a somewhat fringe topic within the organizational sciences, work-family research has become a mainstream area of scholarship and a prominent content area within the field of occupational health psychology (Allen, 2012). The purpose of the current article is to provide a selective review of the work-family literature. In the sections that follow we take a retrospective look at work-family research, an examination of where the topic has been and where it is today. Given the size of the literature base and the context of the Special Issue, we place an emphasis on research published in *Journal of Occupational Health Psychology* (JOHP) and that with health-related implications. Along the way we examine where the research stands in comparison to the needs identified by Westman and Piotrkowski (1999) and offer an assessment of the extent that work-family research has addressed those needs. Then we move on to discuss contemporary issues in the field today that constitute directions for future research. Specifically we discuss intervention studies, multilevel approaches, temporality and dynamic change, managerial perspectives, and diverse work settings.

**Historical Context**

Work and family research began to emerge in the 1970s and has continued to grow since then (French & Johnson, 2016). A panoply of factors has propelled this growth. One factor is demographic changes in the workforce. The percentage of the civilian labor force made up by women steadily climbed from 29.6% in 1950 to 45.2% in 1990 with the 2015 estimate at 46.8% (United States Department of Labor, n.d.b). In addition, the percentage of women in the workforce who are mothers has increased over the past several decades. For example, in 1975, the percentage of mothers with children under 6 in the workforce was 39% compared with 63.9% in 2015. Dual earner families have also become the dominant family structure among married couples. In 2015 48% of married couple households were composed of families in which both husband and wife worked compared with only 19.8% in which only the male member was employed (United States Department of Labor, n.d.a). Another change is that women are contributing a greater percentage of the total family income. In 1970, wives’ earnings as a percentage of family income was at 19.7% (Martin et al., 2015). In 2013 it was 37.0% in 2011 (United States Department of Labor, 2014a).

Demographic trends have also increased the likelihood that individuals face simultaneous management of work and nonwork issues across the life span. Over the past 40 years, the share of children living in a grandparent’s household within the United States has more than doubled, from 3% in 1970 to 7% in 2010 (Scommegna, 2012). The majority of these grandparents are in the workforce made up by women steadily climbed from 29.6% in 1950 to 45.2% in 1990 with the 2015 estimate at 46.8% (United States Department of Labor, n.d.b). In addition, the percentage of women in the workforce who are mothers has increased over the past several decades. For example, in 1975, the percentage of mothers with children under 6 in the workforce was 39% compared with 63.9% in 2015. Dual earner families have also become the dominant family structure among married couples. In 2015 48% of married couple households were composed of families in which both husband and wife worked compared with only 19.8% in which only the male member was employed (United States Department of Labor, n.d.a). Another change is that women are contributing a greater percentage of the total family income. In 1970, wives’ earnings as a percentage of family income was at 19.7% (Martin et al., 2015). In 2013 it was 37.0% in 2011 (United States Department of Labor, 2014a).

Demographic trends have also increased the likelihood that individuals face simultaneous management of work and nonwork issues across the life span. Over the past 40 years, the share of children living in a grandparent’s household within the United States has more than doubled, from 3% in 1970 to 7% in 2010 (Scommegna, 2012). The majority of these grandparents are in the workforce (United States Census Bureau, 2012). Moreover, birth patterns have changed over the last several decades. The average age in 1970 that women first gave birth was 21.4 while in 2000 it was almost 25 (Mathews & Hamilton, 2002). In addition, the number of women in their forties giving birth has been climbing. In 1970, 1% of first children were born to women 35 and older. The percentage increased to 15% in 2012 (Shah, 2014). Although the total number of births to women aged 50 and over is small (there were 677 in 2013), it has been steadily increasing (Martin et al., 2015).
The population is aging at a swift rate. The number of individuals age 65 and older in the United States increased 10-fold from 1900–2000, from 3.1 million in 1900 to 35.0 million in 2000, and to 46.2 million in 2014 (U.S. Department of Health & Human Services, 2016). These trends have contributed to an increase in the number of workers faced with eldercare responsibilities (Family Caregiver Alliance, 2012). Estimates indicate that more than one in six Americans who are working full or part time are also assisting with the care of an elderly or disabled family member, relative, or friend and 70% of working caregivers report that they suffer work-related difficulties because of their caregiving responsibilities (Family Caregiver Alliance, 2012).

Growth in work-family scholarship has been further fueled by the onset of the global economy and technology changes. The globalization of work, coupled with technology, has created a “round-the-clock” work culture, in which workers are expected to be available 24/7 (Miller, 2015). Technology has enabled large numbers of workers to telecommute or to work entirely from remote locations outside of a central workplace, blurring the boundary between work and nonwork (Allen, Golden, & Shockley, 2015). In addition, more individuals are working within what has been referred to as the “on-demand” economy, taking on tasks at a moments notice (Wladawsky-Berger, 2015). When also considering global economic turmoil, unemployment, precarious employment concerns, and increased expectations for performance, individuals are currently faced with a variety of challenges as they try and navigate work and family responsibilities. These are factors that have faced developed nations around the globe, although the policy and labor law frameworks that have emerged in response to these changes have differed (Kelly et al., 2008). We return to this issue when we discuss interventions and cross-cultural research.

Work-Family and OHP

Work-family issues have played a prominent role within the field of occupational health psychology since its inception. For example, the first edition of the American Psychological Association Handbook of Occupational Health Psychology (Quick & Tetrick, 2003) included a chapter on work-family, as did the second edition (Quick & Tetrick, 2011). In his editorial published in the first issue of JOHP Quick (1996) noted that healthy interactions between work and family environments were an essential aspect of occupational health psychology, as were “constructs centered on the work-family interface such as work-home conflict, child-care and elder-care concerns, and other family friendly or corporate policies” (p. 4; Quick, 1996).

The National Institute of Occupational Safety and Health (NIOSH) has also recognized the relevance of work-family issues as an essential aspect of worker safety and health. For example, NIOSH (along with the National Institute of Child Health and Development) helped fund the Work, Family, and Health Network program of research launched in 2005. The Network was developed with the intent to examine how to improve the health and safety of workers by reducing work-family conflict. In 2011, NIOSH initiated the Total Worker Health approach, which is defined as “policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being” (Centers for Disease Control and Prevention, n.d.). Support for employee work-life issues is a key component of integrated approaches to worker health (McLellan, Harden, Markkanen, & Sorensen, 2012).

Key Constructs

To set the stage for our review, in this section we define key constructs. The most studied construct within the work-family literature has been work-family conflict. Kahn, Wolfe, Quinn, Snoek, and Rosenthal’s (1964) work with regard to organizational stress served as the theoretical foundation for work-family conflict research. Kahn et al. used the term interrole conflict to describe situations in which pressures in one role become incompatible with pressures from another role. Greenhaus and Beutell (1985) extended Kahn et al.’s (1964) definition to form the definition of work-family conflict most commonly used by work-family scholars, “a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p. 77). Work-family conflict is most typically operationalized as directional in that work interference with family (WIF) is distinguished from family interference with work (FIW). In our review we use the term work-family conflict to denote the construct in general and use WIF and FIW to denote research that involves directional work-family conflict. In addition, researchers often recognize different types of conflict, most commonly time-based conflict, strain-based conflict, and behavior-based conflict (Carlson, Kacmar, & Williams, 2000; Greenhaus & Beutell, 1985). Time-based conflict arises when time spent on responsibilities associated with one role (work/family) inhibits the completion of responsibilities in another role (family/work). Strain-based conflict occurs when pressures from one role make it difficult to fulfill the requirements in another role. Behavior-based conflict happens when the behaviors necessary for one role are incompatible with the behaviors necessary in the other role.

Constructs have also been developed that focus on positive relationships between work and family roles. Rooted in expansion theory (Marks, 1977; Sieber, 1974), the positive perspective suggests that multiple roles result in greater access to resources, that an individuals’ supply of energy is expandable, and that multiple roles can increase psychological well-being (e.g., Barnett & Baruch, 1985). Constructs used to describe these positive interdependencies include positive spillover (e.g., Crouter, 1984; Hanson, Hammer, & Colton, 2006), work-family facilitation (e.g., Grzywacz & Bass, 2003), work-family enhancement (e.g., Ruderman, Ohlott, Panzer, & King, 2002), and work-family enrichment (e.g., Greenhaus & Powell, 2006). Each reflects the notion that combining multiple roles can be beneficial. Similar to work-family conflict, these constructs are typically operationalized by domain direction. That is, work enrichment of the family is considered unique from family enrichment of work.

Another construct that has recently gained traction and interest within the work-family literature is work-family balance. Initially the term was equated with low work-family conflict or with low work-family conflict coupled with high work-family facilitation (e.g., Frone, 2003; Hill, Hawkins, Ferris, & Weitzman, 2001), but in recent years work-family balance has been recognized as a distinct construct (e.g., Greenhaus & Allen, 2011; Wayne, Butts, Casper, & Allen, in press). In contrast to constructs such as
work-family conflict and work-family enrichment, work-family balance does not specify how conditions or experiences in one role are causally related to conditions or experiences in the other role, but rather it reflects an overall interrole assessment of compatibility between work and family roles.

Research Overview

Our research review is purposively selective rather than comprehensive. In recent years, multiple comprehensive reviews of the work-family literature have been published (e.g., Allen, 2013; Hammer & Zimmerman, 2011). Our intent in the current article is to focus primarily on research published within JOHP. In addition, as warranted, we supplement our review of research published in JOHP with key work-family research published in other outlets. To initially inform our review, we conducted a search using the Web of Science search engine with the key term “work-family” within the Journal of Occupational Health Psychology. Based on a Web of Science search conducted on July 5, 2016, a total of 95 articles have been published in JOHP that include work-family as a key term.

Our search results illustrate that JOHP is a premiere outlet for work-family research. Table 1 presents highlights, key milestones, and high impact articles published. We next briefly summarize some of these findings. An article on work-family appeared in the inaugural issue of JOHP that included an examination of health-related outcomes associated with work-family conflict (Frone, Russell, & Barnes, 1996). Since its publication, the Frone et al. article has become the fourth most cited work-family article to appear in JOHP. The next key milestone was the publication of the 1999 Special Issue (SI) of JOHP edited by Mina Westman and Chaya Piotrkowski on work-family research in occupational health psychology (Westman & Piotrkowski, 1999). The SI featured an overview by Westman and Piotrkowski and eight contributions from leading work-family researchers. The eight articles spanned an array of topics that drew upon themes prevalent within work-family scholarship at the time such as employees faced with multigenerational caregiving responsibilities (Buffardi, Smith, O’Brien, & Erdwins, 1999) and telework (Standen, Daniels, & Lamond, 1999). Collectively, the articles published as part of the SI have been cited a total of 530 times, an indication of the impact of the SI.

Following the 1999 SI, in 2000, two work-family articles were published. These articles are the two most highly cited work-family articles to appear in JOHP. Allen, Herst, Bruck, and Sutton (2000) was one of the first published meta-analytic reviews of work-family conflict. Allen et al. summarized the outcomes associated with work-family conflict and proposed an agenda for future research. Grzywacz and Marks (2000) was notable in that it examined both positive and negative spillover in both the work-to-family and the family-to-work direction, finding support for the notion that these are four distinct work-family experiences. Between 2001 and 2008 a total of 25 work-family articles were published in JOHP. Since 2009, there have been no fewer than six work-family articles each year.

Growth in work-family research appears to have contributed to the growth and success of JOHP. At the time of our search a total of 695 articles have been published in JOHP. As indicated previously, 95 of them were on the topic of work-family, indicating that

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<td>2. Grzywacz, J. G., and Marks, N. F. (2000). Reconceptualizing the work-family interface: an ecological perspective on the correlates of positive and negative spillover between work and family. (512 total citations; 30.24 citations per year)</td>
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<td>Sum of total citations/%) of all JOHP</td>
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<td>Total number of articles published or in press/)% of all JOHP</td>
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Note. Citation data taken from Web of Science July 5, 2016.
at least 13.67% of the articles published in *JOHP* have been in the work-family domain. Moreover, while work-family articles make up 13.67% of those published in the journal, they have contributed 14.47% of the total citations made to *JOHP* articles overall. In addition, two-work-family articles are among the top 10 of all articles published in *JOHP* with regard to total citations (Allen et al., 2000; Grzywacz & Marks, 2000), third and fifth, respectively. Moreover, in a review of work-family research published between 2004 and 2013 in 16 high impact IO/OB journals, *JOHP* was second only to *Journal of Vocational Behavior* in terms of the total number of articles published (Matthews, Wayne, & McKersie, 2016). It is further notable that multiple work-family articles published in *JOHP* have been nominated for the prestigious Rosabeth Moss Kanter Award for Excellence in Work-Family Research (e.g., Cullen & Hammer, 2007; Ho, Chen, Cheung, Liu, & Worthington, 2013; Matthews, Del Priori, Actielli, & Barnes-Farrell, 2006).

In reviewing the 95 published work-family articles, we observed that work-family conflict was the most frequent term used in article titles. Specifically, 87 of the 95 work-family articles published in *JOHP* identified in our Web of Science search included the term work-family conflict. Figure 1 displays a frequency count of the 95 work-family articles published in *JOHP* across time as well as the 87 work-family conflict articles. As shown in the Figure there is no indication that the proportion of work-family studies that include work-family conflict as a key variable is declining across time.

**Work-Family Research Themes**

This section includes brief reviews of select topic areas that we believe have significantly advanced work-family scholarship over the past 20 years or that are emerging topics with the potential for significant advancement of the field. Specifically, we discuss longitudinal studies, experience sampling studies, intervention research, objective health outcomes, and the role of supervisors.

Our selection of themes and specific articles for inclusion was based on an iterative process. Specifically, we first reviewed the content of articles published in *JOHP* and noted common themes as well as high impact articles. We then conducted a PsycINFO database search with the term “work-family” and scanned the content of articles published over the past five years, identifying themes and points of consistency with themes found in our *JOHP* review. Based on this body of work we selected five review content areas. Our selection was not based solely on quantity, but as noted above, was based on areas that we thought represented advancement of the field as well as areas thought to be sufficiently broad in scope to be of interest to a wide array of work-family scholars. Our selection of specific articles to include was guided by those that were high impact and/or those that we thought were particularly illustrative of the themes identified.

**Longitudinal Research Designs**

Work-family phenomena are inherently dynamic but have primarily been examined through cross-sectional designs that by default are static in perspective. In recent years there has been a growth in the number of studies that include data collected at more than one point in time. Consistent with Ployhart and Vandenberg (2010) we define longitudinal research as that in which there is repeated measurement of the same units of observation (i.e., variables) in such a manner that the units can be linked over time. Ployhart and Vandenberg further stipulate that longitudinal research requires a minimum of three repeated measures on at least one of the constructs of interest. Two repeated measures limits the capture of change in that it is by default linear, therefore making it is impossible to examine the form of change across time. However, for the purpose of this review within the context of the evolution of work-family research, we include studies in which at least two repeated measures are included.

Longitudinal research is distinct from multiple wave research in which some of the variables of interest are measured at one time point and others are measured at a later time point. The two designs differ in the kinds of analyses that can be performed and the inferences that can be drawn. For example, change cannot be assessed with a multiple wave design. In addition, although longitudinal data is useful for establishing temporal relationships, neither multiple wave nor longitudinal studies can be used to determine causality in that both are vulnerable to problems asso-

![Figure 1. Work-family publications in JOHP across time. See the online article for the color version of this figure.](image-url)
associated with unmeasured third variables. However, both designs offer advantages over cross-sectional designs that are vulnerable to threats such as spurious mood effects. In our consideration of longitudinal work-family research, we focus on studies in which multiple measures of work-family variables are included.

Kelloway, Gottlieb, and Barham (1999) conducted one of the early longitudinal work-family studies published in JOHP. They investigated different directions (WIF, FIW) and forms (time, strain) of work-family conflict in relation to perceived stress and turnover intent. Results indicated that only strain-based FIW predicted both outcomes. Moreover, results suggested the possibility that strain-based WIF results from rather than predicts perceived stress.

The notion of alternative causal directions has been tested in a number of subsequent studies. Most models of work-family conflict continue to pose strain as a result of work-family conflict rather than the reverse. Based on primary studies in which work-family conflict and strain were both assessed at least two time points, Nohe, Meier, Sonntag, and Michel (2015) conducted a meta-analytic path analysis in an effort to examine the causal relationship between work-family conflict and strain. Results suggested reciprocal effects, which held for both men and women and for different time lags across measurement points. Focusing on subjective well-being rather than strain, Matthews, Wayne, and Ford (2014) also tested competing causal predictions. Specifically, they used three time points with two lags of varying length (1 month, 6 months) to examine the relationship between work-family conflict and subjective well-being. They found evidence that in the short term, work-family conflict has a negative relationship on subjective well-being. However, over time after accounting for the initial reduction in well-being and concurrent levels of work-family conflict, work-family conflict was associated with greater subsequent well-being. The findings are consistent with adaptation theory, which suggests that work-family conflict is a stressor that can negatively impact well-being in the short term, but that over time individuals may become resilient to exposure to work-family conflict.

Similar causal direction questions could be asked with regard to other work-family relationships. Based on a military sample and two data collection time points, Odle-Dusseau et al. (2013) tested three competing models that predicted different directions of causation for relationships over time between family supportive work environments (FSWE) and psychological strain. Data were collected 3 and 6 months after Army soldiers had returned from combat. In the static model FSWE at Time 1 predicted psychological strain at Time 2. In addition, psychological strain at Time 1 predicted FSWE at Time 2 suggesting that individuals’ well-being can influence how they perceive their work environments. With regard to change, FSWE predicted changes in psychological strain across time, but psychological strain at Time 1 did not predict changes in FSWE. Further, changes in FSWE across time predicted psychological strain at Time 2, whereas changes in psychological strain did not predict FSWE at Time 2. The findings point to the possibility of reciprocal relationships between perceptions of the work environment and psychological strain.

While there has been an increase in longitudinal studies, it remains rare to see work-family research that captures data at more than three time points and across longer time trajectories. One exception is Rantanen, Kinnunen, Pulkkinen, and Kokko (2012) who investigated the developmental trajectories of work-family conflict among the same participants at ages 36, 42, and 50. Across this 14-year time span there was no significant change in mean levels of WIF or FIW. They also found that mean levels of WFC and FWC did not differ for men and women across the ages measured. While stability was observed across the sample as a whole, latent profile analysis showed variation in developmental trajectories. The biggest latent trajectory consisted of members whose WIF decreased across time coupled with consistently low FIW. The second largest trajectory consisted of individuals whose WIF and FIW remained stable and low across the time period. WIF and FIW increased across time among a small group of participants. The research helps to illustrate that work-family conflict does not necessarily decrease in later midlife, but that it may take on new forms depending on work and family demands (e.g., individuals may become involved in eldercare).

There is also a small body of research that has included couples within a longitudinal framework. For example, Hammer, Cullen, Neal, Sinclair, and Shafiro (2005) investigated the association between work-family conflict and positive spillover on depressive symptoms across two time points 1 year apart with data from dual-career couples with dependent caregiving responsibilities. They found that positive spillover had a stronger relationship with depression than did work-family conflict. In addition, they found that changes in FIW were associated with changes in depression for husbands but not for wives. Other research has demonstrated asymmetrical effects involving work-family conflict and outcomes across husbands and wives. When predicting changes in job satisfaction across 1 year, WIF was predictive of changes in women’s job satisfaction but not men’s (Grandey, Cordeiro, & Crouter, 2005).

Overall, longitudinal research on work-family conflict is important in that it has helped reveal that across various time lags work-family conflict is fairly stable across time (e.g., Kelloway, Gottlieb, & Barham, 1999; Rantanen et al., 2012). Moreover, longitudinal studies have shown reciprocal relationships between work-family conflict and commonly studied outcome variables (e.g., Nohe et al., 2015). In addition, processes that involve WIF are not necessarily the same as those that involve FIW and processes for wives and husbands differ across time (e.g., Hammer et al., 2005). Still it remains rare to find studies that include more than two time points. Inclusion of a greater number of time points and variation in time lags is needed to help reveal dynamic and nonlinear processes.

Experience Sampling

A major trend over the past several decades in work-family research has been an increase in the use of daily diary studies as the examination of within-person experiences has become an essential component of work-family scholarship (Butler, Song, & Ilies, 2013). While several notable ESM work-family studies were published before 2000 (e.g., Williams & Alliger, 1994; Williams, Suls, Alliger, Learner, & Wan, 1991), the methodology did not become prevalent until the second half of the following decade following key publications by Butler, Grzywacz and colleagues (e.g., Bass, Butler, Grzywacz, & Linney, 2009; Butler, Grzywacz, Bass, & Linney, 2005) and by Ilies, Judge, and colleagues (e.g., Ilies et al., 2007; Judge, Ilies, & Scott, 2006).
Experience sampling (ESM) refers to the use of survey methods that sample participant behavior and experiences repeatedly. ESM is by nature longitudinal in design, but typically conducted over a short period of time. For example, a 5 to 10 day window is common. Studies may include one measurement each day or multiple measurements within each day. Such studies also vary in terms of the sampling frame used. For example, in interval-contingent studies, participants provide data during one or more time periods that are predetermined and fixed. To illustrate, participants may be asked to complete a survey upon waking and again before going to bed. In signal-contingent studies, participants respond when signaled by the researcher. For example, researchers may send a text message at random times during the day to capture the moment data. In event-contingent designed studies, participants are asked to record data when a specific event occurs. For example, participants could be asked to complete a survey if they experience a conflict with their supervisor. To date, work-family studies have been primarily based on interval-contingent studies.

A wide variety of work-family research issues have been addressed with ESM designed studies (see Butler et al., 2013 for a review). One prominent theme has been the examination of spillover between work and family domains. Spillover refers to how experiences in one domain (e.g., work) relate to experiences in the other domain (e.g., family). One example is from Martinez-Corts, Demerouti, Bakker, and Boz (2015) who conducted a study over five consecutive working days that revealed that on days in which employees were less optimistic or resilient, interpersonal conflicts that occurred at work were associated with greater strain-based negative mood after work (Lawson, Davis, McHale, Hammer, & Buxton, 2014).

The impact of information and communication technologies on work-family experiences has become an important area of inquiry (see Olson-Buchanan, Boswell, & Morgan, 2016 for a review) and lends itself well to ESM. Dettmers, Vahle-Hinz, Bamberg, Friedrich, and Keller (2016) compared days of on-call duty with days without on call duty. Specifically, employees provided daily data across a 4-day period during which they were required to be available during nonworking hours and 4 days during which they were not required to be available. They found that extended work availability was associated with impaired well-being and with fewer daily recovery experiences, demonstrating the detrimental implications for blurred work boundaries.

ESM studies are also ideally suited for examining work-family conflict captured episodically. Shockley and Allen (2013) investigated daily episodes of work-family conflict over a 10-day period. Rather than report average work-family conflict on a daily basis, participants reported if they experienced any work-family conflicts during the day. Those who responded yes were asked to provide additional data about the conflict situation and its resolution to determine if the conflict was WIF or FIW in direction. Work-family conflict episodes overall were linked with increases in heart rate; however, when viewing the results by direction, the result was significant for FIW, but not for WIF.

ESM research has greatly increased our understanding of within person variation in work-family experiences. Findings have helped demonstrate that on a daily basis what happens at work relates to what happens at home and vice versa. Moreover, the findings help illustrate that employee work experiences in one domain not only relate to intrapersonal experiences in the other domain, but also have implications for interpersonal relationships. As the ESM work-family literature continues to grow, use of event-contingent designs and episodic approaches could further expand our understanding of in-the-moment work-family experiences.

Intervention Studies

In recent years there has been increased attention given to the need for work-family intervention studies using rigorous experimental designs. Hammer, Demszy, Kossek, and Bray (2016) reviewed the literature on work-family interventions. The majority of the 16 studies reviewed were based on interventions that altered work arrangements such as flexible work schedules and telecommuting. Results of these studies suggest limited effectiveness with regard to improving work-family conflict, likely because of the blurring of work and home boundaries that comes with work portability.

Although not included in the Hammer et al. review, Karlson, Eck, Orbaek, and Osterberg (2009) examined the impact of different shift scheduling. Shift work can vary with regard to the direction of the rotation (forward vs. backward) and with regard to the frequency of consecutive shifts. Rotating shift schedules have been associated with adverse health effects and can interfere with employee family and social interactions. Karlson et al. compared the effects of a change of shift schedule from a fast forward-rotating schedule to a slowly backward-rotating one. Data were collected 6 months before implementing the new schedule and at a follow-up 15 months later. As hypothesized, the shorter shift blocks (three consecutive shifts as compared with the previous six consecutive shifts) resulted in clear improvements with regard to recovery ability, sleep, work-family conflict, and fatigue.

In recent years, Hammer and colleagues have developed interventions focused on training supervisors to be more family supportive. Hammer, Kossek, Anger, Bodner, and Zimmerman (2011) found that training supervisors to increase their family supportive supervisor behaviors (FSSB) demonstrated benefits for employee physical health, job satisfaction, and turnover intent among employees with high levels of FIW within a grocery store context. Odle-Dusseau, Hammer, Crain, and Bodner (2016) replicated and extended these results in a health care setting. Based on a quasi-experimental, pretest—posttest design, health care employees completed surveys at two time periods approximately 10 months apart. Employees whose supervisor received FSSB training reported changes in job performance, organizational commitment, engagement, job satisfaction, and turnover intent through changes in employee perceptions of their supervisors’ overall FSSBs. Additional research incorporating family supportive supervisor training along with schedule control, known as Support.Transform.Achieve. Results
(STAR), was found to enhance safety compliance and organizational citizenship behaviors. An interesting find was that none of these studies demonstrated that FSSB/STAR training helped to improve work-family conflict.

Relative to interventions designed to change aspects of workers’ situation, interventions designed to focus on individual cognitive and behavioral strategies have received limited attention. One exception is Michel, Bosch, and Rexroth (2014) who tested an online self-training intervention designed to teach employees how to use mindfulness. Compared with a control group, those who received mindfulness training reported more satisfaction with work-life balance and less strain-based work-to-life conflict.

In summary, intervention-based research is an area with great promise but remains at a nascent stage. While existing interventions have shown beneficial effects on important outcomes, interventions that improve work-family specific variables such as work-family conflict remain elusive. The design and evaluation of interventions based on principles associated with Total Worker Health that consider both the individual and the organization is one important avenue for future research efforts (Anger et al., 2015; Hammer et al., 2016). Attention also needs to be focused on the development of scalable interventions that can be deployed to large numbers of employees across different types of jobs and organizations.

Objective Health

There is a substantial body of research linking work-family conflict as well as work-family enrichment with employee psychological and physiological health (e.g., Greenhaus & Allen, 2011; McNall, Nicklin, & Masuda, 2010). However, the vast majority of existing research is based on self-reports (Grzywacz, 2016). In their methodological review, Lapiere and McMullan (2016) reported the frequency with which “hard” outcome measures were included in work-family studies. The types of outcomes they examined included absenteeism, productivity, and hours of sleep. However, while these types of variables are objective in nature, they are still often measured via self-report, a persistent methodological limitation within the work-family literature. As noted by Allen (2012) the reliance on self-report is of particular concern with regard to assumed relationships between work-family conflict and health-related outcomes in that such relationships may be overstated when both variables are based on self-report.

JOHP has published key studies that include objective measures of health based on data other than self-report. Sleep and cardiovascular health indicators have been health-related variables of particular interest. Crain et al. (2014) used actigraphy to assess objective sleep quality and quantity over a 1-week period. Actigraphy involves monitoring sleep through wristwatch-size devices that include an accelerometer (Crain et al., 2014). Results indicated that greater WIF was associated with less total sleep time. Berkman et al. (2015) investigated associations of work—family conflict and work and family conditions with objectively measured cardiometabolic risk (based on measured blood pressure, cholesterol, glycosylated hemoglobin, body mass index, and self-reported tobacco consumption) and sleep (based on actigraphy). WIF but not FIW was positively associated with cardiometabolic risk. Shorter sleep duration was associated with greater FIW. In contrast to Crain et al., there was a positive relationship between sleep and WIF.

Support from supervisors has also been explored in relation to work-family outcomes and objective health. Berkman et al. (2010) investigated if employees with managers who are supportive, open, and creative about work—family needs have lower cardiovascular disease (CVD) risk and longer sleep than their less supported counterparts. Interviewers collected survey and physiological outcome data from employees. Employees whose managers were less supportive slept less and were over twice as likely to have 2 or more CVD risk factors than were employees whose managers were most open and creative. Shockley and Allen (2013) investigated blood pressure and heart rate as measured with wrist monitors using a daily diary design. They found that episodes of work-family conflict were linked with subsequent increases in heart rate. In addition, the relationship between episodes of FIW and blood pressure was moderated by perceptions of family supportive supervision such that there was an increase in blood pressure for those who reported lower family supportive supervision relative to those who reported greater family supportive supervision.

Cortisol has long been considered an objective biological marker of psychological stress with higher cortisol levels associated with higher stress levels (e.g., Ebrecht, Hextall, Kirtley, Taylor, Dyson, & Weinman, 2004). Moreover, cortisol has been shown to be sensitive to work demands (e.g., Ganster, Fox, & Dwyer, 2001). However, there have been few work-family studies that incorporate cortisol assessments. One exception is Dettmers et al. (2016) who investigated daily extended work availability. Within-person analyses revealed significant effects of extended work availability on cortisol awakening response. Other research has shown that mothers with higher levels of parenting stress have higher morning cortisol levels on work days compared with non-work days (Hibel, Mercado, & Trumbell, 2012). This is likely because workday mornings can be a particularly stressful time for parents as they prepare children for school/childcare while also preparing for the upcoming workday. Most recently, Zilioli, Imami, and Slatcher (in press) examined both directions of positive and negative spillover in relation to cortisol. Negative family to-work spillover was associated with lower wake-up cortisol values and a less health diurnal cortisol slope. No significant findings emerged with regard to the other work-family variables.

The inclusion of objectively measured health indicators is key to building a critical mass of work-family scholarship that reveals the ways by which work-family experiences are associated with health. To date, only a select set of health behaviors (e.g., sleep) and health indicators (e.g., cortisol, CVD) have been examined. Research that investigates other health systems (e.g., metabolic) in relation to work-family experiences is needed. Another characteristic of the existing research is the focus on negative versus positive work-family experiences. As noted by Grzywacz (2016) in his review of work-family and health research, this is not surprising when considering the heavy reliance on stress models within the work-family literature. However, positive work-family experiences may have salutary effects on health. Accordingly, research is needed that investigates relationships between work-family enrichment and objective health outcomes as well.
Supervisor

Growing recognition of the key role that supervisors play in helping individuals manage work and family has been another research theme over the past several decades. One robust finding is that individuals who report that their supervisors are more family supportive also report less work-family conflict (e.g., Lapierre & Allen, 2006). In addition, family supportive supervision can help buffer the relationship between work-family conflict and health-related outcomes (Shockley & Allen, 2013). Hammer, Kossek, Zimmer, and Daniels (2007) further boosted family supportive supervision research through the development of the family supportive supervision behavior (FSSB) measure composed of four dimensions, emotional support, instrumental support, role model behaviors, and creative work-family management. Originally 14 items, Hammer, Kossek, Bodner, and Crain (2013) developed and validated a 4-item brief version of the FSSB (FSSB-4). Further, as noted previously, family supportive supervisor training has become a promising intervention (e.g., Hammer et al., 2011).

Another approach to examining the intersection of supervisor behavior and work-family has been the integration of leadership theory with work-family (see Major & Litano, 2016 for a review). For example, Major and Morganson (2011) applied LMX theory as a framework for understanding coping with work-family conflict. They suggested that high quality supervisor-employee relationships would expand the availability of employee coping strategies and enable employees to prevent conflict before it occurs. A recent meta-analysis shows that LMX does indeed negatively relate to WIF and to FIW (Litano, Major, Landers, Streets, & Bass, in press). Moreover, Litano et al. also showed that LMX positively relates to work-family enrichment and to family work enrichment.

Ample evidence shows that supervisors and the relationships they develop with their employees relates to employee work-family experiences, both positive and negative. These findings are not surprising given that social relationships are an essential aspect of organizational life. Connections formed with coworkers have a profound effect on employee health and well-being (e.g., Dutton & Ragins, 2007). As this body of literature grows, examination of supervisor-employee relational dynamics as they unfold across time are needed (Litano et al., in press). Moreover, incorporation of constructs such as relational energy may further our understanding of the circumstances by which supervisor help or hinder employee work-family balance.

Taking Stock of Advancements Since 1996

Having identified current themes in the work-family literature, in this section we examine the research needs identified by Westman and Piotrkowski (1999) and our assessment of the extent that work-family research has addressed these needs. In their introduction to the 1999 SI on work-family, Westman and Piotrkowski identified three critical areas in which they thought work-family research needed to make progress. Those areas were theory, methodology, and diversity. We reflect on the comments made by Westman and Piotrkowski in light of where the research stands on each of these topics currently.

Westman and Piotrkowski (1999) noted the need for comprehensive, integrative work-family theory. This is a theme that continues to be echoed among work-family scholars (Allen & Eby, 2016). In their review of theoretical approaches to the study of work and family Matthews et al. (2016) reported the results of a survey sent to 113 preeminent work-family scholars with regard to the status of theory within the field. Results indicated that while 89% of the scholars surveyed indicated that it was either very or extremely important that work—family scholars effectively incorporate theory into their research; only 31% believed that scholars were currently very or extremely effective doing so.

Westman and Piotrkowski (1999) also aptly noted that the development of theory requires well-defined constructs while stating, “Researchers currently use many different terms to refer to the same phenomenon, rarely giving precise definitions or relating their terminology to that of others” (p. 304). This remains an issue of concern within the work-family literature with respect to at least three popular topics of inquiry. The first is the constructs used to represent positive synergies between work and family. As previously mentioned, researchers have used a variety of constructs and definitions to denote positive interactions between work and family. Although there have been several efforts to bring order to this literature through distinguishing the meanings attached to and the operationalizations used to represent these various constructs (Masuda, McNall, Allen, & Nicklin, 2012; Wayne, 2009), precise definitions and measurement tools remain elusive. A second topic that suffers from construct proliferation is that of boundary management (Allen, Cho, & Meier, 2014). In recent years multiple constructs have emerged to test hypotheses associated with the ways by which individuals manage the boundary between work and nonwork. As noted by Allen et al. constructs within the boundary management literature such as work-family role blurring, integration/segmentation, and interruptions continue to proliferate with distinctions that are often muddy. The third topic that has suffered from construct confusion is work-family balance. A variety of constructs and measures have been developed and used in recent years labeled as work-family balance, resulting in a disjointed literature base (Wayne et al., in press).

Further advancement in terms of theory building and construct clarity are needed to advance the work-family literature over the next 20 years. Sensitivity to jingle-jangle fallacies is needed (e.g., Block, 1995). A jangle fallacy occurs when two things that are the same or nearly the same are labeled differently. An example of this is work-family interruptions and work-family conflict. A jingle fallacy is a situation in which two variables that are different are labeled similarly and are therefore incorrectly thought of as interchangeable. An example of this is research that refers to the lack of work-family conflict as work-family balance. Addressing these issues is important in that the lack of precision in terminology can inhibit the ability to build cumulative and comprehensive knowledge (Block, 1995).

Major methodological concerns noted by Westman and Piotrkowski (1999) included the reliance on cross-sectional designs and self-report data. In their review, Lapierre and McMullan (2016) show that there has been an increase in the use of multiwave designed studies published between 2004 and 2013 relative to research published between 1980 and 2003. This is one area in which we believe the research body has advanced, as researchers have moved toward more sophisticated research designs. As noted previously, it has become more common to see work-family studies based on longitudinal designs and daily diary methodologies.
Lapierre and McMullan also examined the number of studies based on multisource data and found that 28% of studies included more than one data source. It is uncertain how this percentage compares to research conducted in previous years or to other areas of research.

The third area of future research needs identified by Westman and Piotrkowski (1999) was diversity. Westman and Piotrkowski noted that most work-family research has been limited to white-collar, professional, and highly educated employees of large organizations. Twenty years later this gap in the research literature remains. In their recent review, Agars and French (2016) note that most of what we know about work-family issues is based on a relatively narrow slice of the working population. Agars and French extend the suggestions of Westman and Piotrkowski by providing recommendations for research on low-income, low-wage workers, immigrant workers, single parents, LGBT parents, and formerly incarcerated parents. In a similar vein, Lapierre and McMullan (2016) noted the need for more attention focused on sampling. In their review, they found that 77% of studies were based on nonprobability convenience sampling. To tap into populations other than standard white-collar workers, purposeful sampling strategies will be needed to further advance our understanding of work-family issues among a wide array of subgroups.

**Future Research**

As described in our review, a substantial body of research on the intersection of work and family has developed over the past two decades. JOHP has played a prominent role in this research. Moreover, the research shows evidence of maturation in that more sophisticated methodological designs are being employed to answer new and unique questions. In the following section we identify areas in which we believe further research is needed to help shape work-family inquiry for the next several decades. Specifically we discuss intervention studies, multilevel approaches, temporality and dynamic change, managerial perspectives, and diverse work settings.

**Intervention Studies**

Now that we have emerging evidence that interventions can positively impact the work and family interface (Hammer et al., 2016), a more nuanced understanding of what works for whom may begin to be developed. Gender and lifestyle appear to be two important factors that could be further explored in relation to interventions. Mothers of infants are more likely to leave their job as a result of WFC than are mothers of older children (Carlson, Grzywacz, Ferguson, Hunter, Clinch, & Arcury, 2011) and fathers of infants work longer hours than any other group of men in the labor force (Cooklin, Westrupp, Strazdins, Martin, Giallo, & Nicholson, 2016). A hetero-normative approach to parenting persists (Daverth, Cassell, & Hyde, 2016), with fathers reporting being marginalized or stigmatized by managers when requesting flexible work arrangements, and being embedded within organizational cultures in which their paternal status is invisible (Gatrell, Burnett, Cooper, & Sparrow, 2014). Identifying ways in which organizations can promote fathers’ engagement and uptake of family friendly employment conditions and understanding how working conditions may be associated differentially with WFC and WFE among mothers and fathers are important future research objectives (Cooklin et al., 2016; Westrupp, Strazdins, Martin, Giallo, & Nicholson, 2016).

**Multilevel Approaches**

Despite repeated calls in the work-family literature, multilevel studies remain rare. This is an important gap in that individual work-family experiences, like virtually all organizationally relevant phenomena, are naturally nested within a higher level context. Whereas a robust body of literature exists that examines dyads (employee and partner, employee and supervisor), analysis is typically focused on the individual within the dyad. In addition, studies that involve constructs such as organizational culture that reside at higher levels of the organization are most commonly studied at the individual level of analysis.

As working conditions are likely to vary substantially by industry, sector, size, and type of organization and workgroup, the development and testing of theoretical models of WFC that consider the relative contribution of each of these multiple contextual levels has been identified as a significant research imperative (Ngo, Foley, & Loi, 2009). Socioecological theory (Oishi, 2014) highlights the importance of the broader environment that exists around the work-family interface of individuals and their families. Optimal management of the work—family interface involves reducing WFC and enhancing WFE at multiple levels (combining the potential synergies of policy, organizational, team and individual/couple-level interventions). Improved understanding of these factors constitutes key scientific knowledge necessary to design effective interventions and system-level change strategies (Martin, Cooklin, & Dawkins, 2015).

**Temporality and Dynamic Change**

Research is needed that facilitates a better understanding of relationships between work and family and long-term physical and mental health of employees and their children (Kramer & Chung, 2015). The inclusion of life span approaches to work and family can help in this regard (Allen & Finkelstein, 2014). Westrupp et al. (2016) have begun to examine this issue, modeling cross-lagged structural equations over five biennial waves of data, in four overlapping samples of Australian mothers reentering work between child ages 0–1 to 8–9. They found evidence of a reciprocal relationship between psychological distress and work-family conflict, which was not confined to one period of parenting but continued as children grew older. Hence, WFC and its potential to erode mothers’ psychological health does not appear to diminish over the first 8 years of raising children while in the workforce. The results suggest a more extensive and dynamic influence of WFC on employed mothers’ well-being in comparison to the cause-and-consequence relationship posed by many theories.

Trajectories of WFC over time that pattern with health outcomes has become a “hot topic” as large longitudinal data sets develop and allow a form of “natural experiment” to be approximated. Significant heterogeneity in individual trajectories of WFC have been reported in Scandinavian (Kimunen, Geurts, & Mauno, 2004; Rantanen et al., 2012) and in Australia samples (Cooklin, Dinh, Strazdins, Westrupp, Leach, & Nicholson, 2016). In particular, investigation of the effects of WFC that is continuous, re-
duced, increased or not experienced on parents’ mental health has shown an interesting pattern of findings. Cooklin and her colleagues (2016) found that parents who “got trapped” in chronic WFC reported the poorest mental health, followed by those who reported an onset of WFC. When WFC was relieved, both mothers’ and fathers’ mental health improved significantly. Mothers and fathers who “never” experienced WFC showed the most optimal mental health scores, and experienced the fewest symptoms of psychological distress. Capitalization on long-term longitudinal data sets as well as the development of new studies with life span approaches will help inform the next generation of work-family research.

Our call for long-term studies extends to that which looks at the connection between parental work and child health. A growing body of research has shown linkages between parental work-family conflict and child outcomes (see Cho & Ciancetta, 2016 for a review). For example, Strazdins, O’Brien, Lucas, and Rodgers (2013) found that when mothers or fathers experienced WFC, elevations in young children’s emotional and behavioral symptoms were observed, with the risks compounding if both parents experienced conflict between work and family. The mechanism for some of these effects include associations between both work—family conflict and work-family enrichment and indicators of the quality of parenting (warmth, irritability, consistency etc.) and the couple relationship (e.g., conflict, satisfaction etc.) in samples of both mothers and fathers (Cooklin et al., 2015, 2016). In addition, recent research has shown that fathers’ work conditions relate to adolescent development (French, Butts, & Allen, in press). Research that captures parental work conditions and parenting demands across the life course is needed to yield further insight into impacts on child development and health.

Managerial Perspectives

As described previously, a robust body of literature has developed concerning the relationship between supervisor support and employee work-family conflict. The vast majority of this research focuses on the employee, often neglecting the context and constraints within which supervisors must operate (Brough & O’Driscoll, 2010; Greenhaus, Ziegert, & Allen, 2012). Although most developed nations have policy frameworks around flexible work arrangements and other initiatives that attempt to deal with constraints within which supervisors must operate (Brough & O’Driscoll, 2010; Greenhaus, Ziegert, & Allen, 2012). Although most developed nations have policy frameworks around flexible work arrangements and other initiatives that attempt to deal with employees needs to manage work and family roles, the “gulf” between written policy and implementation is a significant issue (Won, 2016). Industry resistance (Todd & Binns, 2013) and ineffective implementation of work-family policies remains a significant problem (Skinner & Pocock, 2014). Leaders, managers and supervisors, acting as “agents” in the employee-organization relationship, have been recognized as a key to improving policy implementation and reducing inequalities in policy use (Reeve, Broom, Strazdins, & Shipley, 2012). Hence, a research focus on the complexity of managers’ decision-making processes is needed (Daverth et al., 2016; Poelmans & Beham, 2008).

Theory and empirical evidence that helps us develop a better understanding of how managers navigate the work-family interface of employees, specifically factors that influence both formal and informal work-family policy implementation and provision of informal work-family specific supports (e.g., FSSBs) requires further development. Informal strategies may modify how, when, or where work gets done without affecting overall performance or permanently altering working conditions (Behson, 2002). Studies focused on antecedents of supervisors support for informal work-family accommodations would also be illuminating.

Diverse Work Settings

As we suggested earlier, greater attention is needed on employees from all segments of the working population. Changes in the nature of work and technological advancements have also resulted in a greater diversity of work settings and conditions. Most work-family research assumes workers are embedded within an organizational context. However, a growing number of workers are self-employed and there are an increasing number of employment options within the contracting and freelancing labor market (Nel, Maritz, & Thongprovati, 2010). Self-employment is one form of paid work that would appear to have high levels of flexibility and schedule control, but has received little research attention as a work setting in relation to the work-family interface. A lack of empirical evidence makes it difficult to determine whether self-employment is a viable option for balancing work and family roles as is popularly believed. Self-employment has been described as a “double-edged sword” (Prottas & Thompson, 2006). The risk of business failure through sensitivity to fluctuations in market forces, taxation and regulatory administrative demands, and financial stress coupled with long hours and few vacations are trade-offs for increased potential for income and autonomy, but most of these studies are undertaken with men (Jamal, 2009). Accordingly, there is a need for greater examination of work-family issues for those who are self-employed.

Conclusion

In the current article we briefly charted work-family research published over the past several decades and offered suggestions for research needed over the next several decades. Occupational health psychologists can continue to play an important role in producing research findings with the potential to improve the well-being of individuals, families, organizations, and economies.

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