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Advances in Families and Health Research in the 21st Century

We review research on families and health published between 2000 and 2009 and highlight key themes and findings from innovative, methodologically rigorous studies. Whereas research in prior decades focused primarily on whether family structure affects child and adult health, contemporary research examines the contextual and processual factors that shape for whom, for which outcomes, and under what conditions families affect mental and physical health. We discuss how family structure, transitions, and processes within families of origin affect children's health over the life course. We then examine the effects of marital status, transitions, and quality for adult health. We point out limitations in current research, discuss implications of recent findings for policy, and highlight theoretical and methodological directions for future research.

Health is the single most important indicator of the overall well-being of a society. The World Health Organization (2006) defines health

as “complete physical, mental, and social well-being and not merely the absence of disease or infirmity.” Early models of health emphasized biological influences, yet scholars now recognize that social factors are an equally important influence. Family is among the most powerful influences on health, as it provides economic, social, and psychological resources (and strains) that protect (and threaten) the health of its members. In this article, we synthesize research from the last decade that documents the complex ways that families affect physical and mental health over the life course. One of the most important developments of the past decade is that researchers have moved beyond the following question: Does family structure affect health? Rather, contemporary scholars explore the following question: Under what conditions, for which outcomes, for whom, and through which pathways do family structure, context, and process affect health?

We also highlight important and unresolved research challenges, including a reliance on conceptual and statistical models that privilege the White middle-class nuclear heterosexual family as the norm, a lack of attention to the precise pathways linking family structures and statuses to specific indicators of health (including both self-reported and biomarker indicators), underdevelopment of a “gold standard” for assessing child and adolescent health outcomes, and a continued focus on the individual rather than the dyad or family system as the unit of analysis. We conclude by suggesting important avenues

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for future research, and showcasing examples from innovative cross-disciplinary studies that are poised to advance theory and research in the coming decades.

Given the vast research on families and health published in the past decade, spanning the disciplines of sociology, psychology, epidemiology, medicine, nursing, gerontology, and social work, our review is necessarily circumscribed. We focus on the ways that family structures, transitions, and processes affect child and adult health. We do not discuss health consequences of parenthood (Umberson, Pudrovska, & Reczek, 2010) or work-family conflict (Bianchi & Milkie, 2010), as these topics are the foci of other articles in this issue.

FAMILIES AND CHILD HEALTH

Most studies of families and child/adolescent health in the last half century are based on the assumption that living with two biological parents is universally good for children's health. Empirical studies concur that this living arrangement is protective for children's health, yet researchers have moved beyond contrasting the two-biological-parent household with all other types of biological or legal parent-child ties and now seek to identify *specific aspects* of family structures, transitions, and processes that shape child health. We highlight three influential contributions to family and child health research in the past decade, summarize key findings, and identify directions for future research.

First, whereas earlier studies typically compared children in two-biological-parent families versus step- and single-parent families, contemporary studies investigate *differences within* each type of family structure. This development reflects the increasing complexity of family structures including high levels of remarriage among divorced parents and a growing recognition that "single" parents may have serious romantic partners whom they may eventually marry—thus blurring the boundaries between single- and two-parent families.

Second, recent studies specify the family *processes and dynamics* that affect child health. This inquiry is not new, yet foci have shifted to reflect contemporary demographic contexts. A promising new development is renewed attention to fathers; studies now contrast the ways that child health both affects and is affected by interactions with resident

biological, nonresident biological, and resident nonbiological (i.e., "social") fathers.

Third, scientists are investigating how time is implicated in the relationship between families and child health. Time encompasses historical time (e.g., cohort differences in the effect of parental divorce), personal time (e.g., child's age when parents divorced), and daily time use. Inquiries include the long-term effects of family structure on child health, how the timing of family transitions and duration of household arrangements affect child health, and how parents' daily time use affects child health. These advances were driven in part by the recent collection of longitudinal, cross-generation, daily diary, and genetic data.

Despite advances in the conceptualization and measurement of family structures, transitions, and processes over the past decade, the conceptualization and measurement of child health remains underdeveloped—especially among family researchers. "Externalizing" and "internalizing" behaviors, conceptualized as indicators of current mental health and future risk, are among the most widely used outcomes. Few family studies use *specific* child health outcomes, whether self- or parent-reported illnesses and symptoms, or physiological markers of health. This narrow focus partly reflects widespread reliance on sample surveys, which are limited for studying child health because the number of children with major health conditions is relatively low. Moreover, children may be incapable of accurately reporting their health, and research suggests that child, parent, and other informant (e.g., teacher) reports may be discrepant (De Los Reyes & Kazdin, 2005). Conversely, new health-based data sources, such as the National Survey of Children's Health, have detailed measures of children's health yet minimal information on family processes and characteristics. One promising avenue is the growing use of physiological (e.g., biomarker) data, which are less susceptible to response bias associated with self- and parent-reported health data.

We next review recent studies of families and child health that best exemplify these three advances. Our organization is consistent with the categories typically used by researchers: family structure, transitions, and processes and characteristics. *Family structure* refers to the composition of a child's residential and biological family—including whether parents and children are related by blood or marriage.

Family transitions include changes in one or both parents' relationship status and residential family changes. *Family processes and characteristics* encompass dynamics and attributes that exist within any type of family structure such as parental behavior and economic hardship.

Family Structure

The prevalence of two-biological-parent households declined over the last half century. In 1970, 85% of children under age 18 lived in two-parent families, 11% in single-mother families, 1% in single-father families, and 3% lived with neither parent. In 2004, by contrast, only 61% of children lived with married biological parents, 9% lived with two parents who were either unmarried or only one of whom was the child's biological parent, 23% lived with single mothers, 3% with single fathers, and 4% resided with neither parent—usually with grandparents or other relatives (Kreider, 2008).

The two-parent biological family is no longer ubiquitous in the United States, yet it arguably persists as the *cultural norm* of what families should be (Popenoe, 1993). This idealization may reflect the fact that most studies found that this arrangement is more protective for children's health than other family forms, such as step- or single-parent families. Effects were particularly strong for adolescent mental health (Barrett & Turner, 2005; Sweeney, 2007), drug use (Hoffman, 2002), and early sexual behavior (Upchurch, Aneshensel, Nudgal, & McNeely, 2001). Children residing with married biological or adoptive parents also have better access to health care compared to other children (Gorman & Braverman, 2008). Common explanations for this advantage include economic (e.g., lower household income of single versus married parents), cultural (e.g., stigmatization of "nontraditional" family forms), psychosocial (e.g., more parental attention with two parents), and evolutionary explanations (e.g., biological parents provide more emotional and financial support to biological vs. nonbiological children; Lansford, Ceballos, Abbey, & Stewart, 2001).

Between-group comparisons of family structure effects have been accompanied by innovative *within-group* comparisons. Halpern-Meekin and Tach (2008) developed a typology that separated biological children in two-parent families into "simple" and blended (i.e., including half-siblings) structures. With respect to depressive

symptoms and delinquency, biological children in blended families were more similar to stepchildren in blended families and stepchildren in stepfamilies than they were to children in simple biological two-parent families. The elevated depressive symptoms among adolescents in blended families were not explained by family environment, instability, or selection factors. This research demonstrated that classifying children solely on the basis of their legal or biological tie to their coresidential parent obscured other aspects of family structure, such as sibling relationships, that may have affected child and adolescent health.

Research on gay and lesbian parenting also revealed limitations of conceptualizing and measuring family structure solely in terms of legal and biological ties. Under a purely legal/biological classification scheme, many children in gay and lesbian families would be categorized as living with a single biological parent and thus hypothesized to have poorer health than children in two-parent families. Influential review essays, however, have shown that children living with same-sex parents have health outcomes similar to children living with heterosexual parents (Patterson, 2006; Stacey & Biblarz, 2001).

Finally, recent studies identified key processes that mediated the effects of family structure on child health. For example, Barrett and Turner (2005) found that socioeconomic status (SES), positive and negative interactions, and stress accounted for more frequent depressive symptoms reported by young adults in single-parent and stepfamilies, compared to mother-father families. Similarly, Artis (2007) found that elevated symptoms of loneliness and sadness among kindergarten children living in families other than married biological parent families were completely accounted for by economic resources, maternal depression, and parenting practices. In sum, researchers have moved beyond simply documenting the biological and legal child-parent ties that shape child health and now identify the processes and sources of variation within particular family structures that influence child health.

Family Transitions

Transitions that affect child health include parental divorce, separation, remarriage, and death. Most transitions research focuses on

divorce; recent studies found that parental divorce adversely affects mental health of young children (Strohschein, 2005), adolescents (Oldehinkel, Ormel, Veenstra, De Winter, & Verhulst, 2008), and future generations of offspring (Amato & Cheadle, 2005). The magnitude and duration of these effects varied by child gender (Oldehinkel et al., 2008), the number, types, and timing of transitions (Cavanagh & Huston, 2006), and parenting quality (Osborne & McLanahan, 2007).

In the past decade, analyses of longitudinal data documented that the adverse effects of parental marital transitions on child health are partly due to stressful factors that precede, accompany, or follow the transition. For example, Sun (2001) found that male and female adolescents with parents who subsequently divorced had more psychological and behavioral problems even prior to the divorce. Parents' predivorce characteristics (such as problem drinking) affect both divorce risk and children's health, thus accounting for part of the purported casual link (Furstenberg & Kiernan, 2001). A child's experience postdivorce also affects mental health symptoms; Sweeney (2007) found that children of divorced mothers who subsequently remarried experienced declines in depressive symptoms, yet this benefit did not extend to children of single mothers who later married.

Family Processes and Characteristics

The last decade witnessed a surge in research documenting the health effects of family processes, including parental childrearing practices and aggression, father involvement, and parental characteristics including SES and nonstandard employment schedules. A notable advance is the conceptualization and measurement of father's involvement, with attention to variation based on his legal, residential, or biological tie to the child. This advance is partly due to the collection of new data sources such as the Fragile Families and Child Well-Being Study, a longitudinal study of approximately 5,000 children born between 1998 and 2000 and their parents (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Ascertaining the causal ordering of the association between child health and family processes remains a challenge; however, emerging evidence suggests that child health also may affect father involvement (Hawkins, Amato, & King, 2007).

Parenting practices. Parenting practices are an important influence on child health. A cross-national meta-analysis revealed that parental rejection is associated with children's "psychological maladjustment" (Khaleque & Rohner, 2002), and qualitative studies linked parental criticism to child eating disorders (Haworth-Hoepfner, 2000). Coparenting conflict predicted adolescent antisocial behavior (Feinberg, Kan, & Hetherington, 2007). Evidence for racial differences in the effect of parental behavior is equivocal. Veneziano (2000) found that perceived acceptance by both mothers and fathers affected psychological adjustment among Black youths, yet perceived acceptance by fathers only affected psychological adjustment among White youths. By contrast, Amato and Fowler (2002) concluded that high-quality parenting decreased, and parental aggression increased, children's behavioral and socialization problems for both racial groups.

Parental aggression and violence. Mild parental aggression is nearly universal in the United States: 98% of parents of 5-year-olds used psychological aggression (e.g., yelling) to control children's behavior, and half of parents of teenagers used more extreme forms of psychological aggression (e.g., cursing; Straus & Field, 2003). Childhood psychological, physical, and sexual abuse predicts a range of health outcomes, yet effects vary on the basis of attributes of the child and family, including the health-related coping strategies. Springer (2009) found that smoking mediated the relationship between childhood physical violence and adult bronchitis and emphysema. Parental emotional support moderated the relationship between physical punishment and child behavioral problems; spanking predicted behavioral problems in the context of low maternal support (McLoyd & Smith, 2002) only.

Father involvement. Research in the last half-century compared the benefits for child health of living with a mother and biological father versus a mother and stepfather. Researchers, however, are now examining the role played by nonresident biological fathers and nonbiological resident "social fathers"—typically a nonmarried romantic partner of the mother. This shift reflects childbearing and childrearing patterns in the late 20th and early 21st centuries. In 2007, 40% of all births occurred outside of marriage

(Hamilton, Martin, & Ventura, 2009). Half of all children are expected to reside with a biological mother and social father at some point during childhood (Kennedy & Bumpass, 2008). Recent studies show that high quality involvement by *any type* of father predicts better health for children.

High quality social and emotional support by a nonresident biological father reduced adolescents' behavioral problems (Carlson, 2006) and internalizing and externalizing behaviors (V. King & Sobolewski, 2006). Contact and communication with a nonresident biological father decreased adolescent delinquency (Coley & Medeiros, 2007). Close ties with social fathers also enhanced child well-being: Direct and positive engagement by a mother's nonmarried coresident romantic partner was just as protective for children's health as engagement by a resident biological father (Bzostek, 2008). Some research suggests that children fare best when they maintained positive ties with *multiple* fathers. V. King (2006) found that adolescents with close ties to both a stepfather and nonresident biological father had better outcomes than teens who had close relationships with one father only. Relationships with stepfathers were more influential than relationships with nonresident biological fathers, given the stepfathers' coresident status and more frequent interaction (V. King).

Contemporary researchers also recognize that father involvement and child health are mutually influential. Some studies reported that nonresident fathers are more likely to interact with offspring who have lower levels of internalizing and externalizing behaviors (Hawkins et al., 2007). Other scholars, however, have found no evidence that adolescent delinquency predicts nonresident father involvement (Coley & Medeiros, 2007). This issue requires more detailed, longitudinal exploration in the coming decade.

Scholars also have begun to examine how a biological father's multipartner fertility affects the physical and mental health of his children (Bronte-Tinkew, Horowitz, & Scott, 2009). Three-year-old children residing with a biological father who also has children with women other than the residential biological mother had slightly higher levels of externalizing behaviors compared to children living with a biological father who did not have children with other women. This association was partially mediated

by paternal depression. A father's multipartner fertility also harmed his child's physical health indirectly, through reduced involvement in the child's daily life (Bronte-Tinkew et al.).

Parental socioeconomic status. Parental SES and family structure are highly correlated, yet each has distinctive consequences for child health. Economic resources are a dynamic aspect of family life; the duration, frequency, and timing of family economic hardship are more powerful predictors of child health than a single point in time or summary measure. Documenting the child health impacts of household income histories as well as the timing and duration of poverty spells are notable contributions of the past decade.

Long spells of economic hardship had more powerful negative health consequences than single or short-term spells, and the health effects of economic hardship during adolescence were particularly damaging and persisted even through adulthood (Sobolewski & Amato, 2005). The deleterious effects of family economic stress also persisted across subsequent generations: Poverty during a grandparent's childhood predicted more externalizing problems for grandchildren (Scaramella, Neppl, Ontai, & Conger, 2008). Poverty among the grandparents predicted younger childbearing among the parents, which was associated with harsh parenting and thus problematic grandchild behaviors.

Parents' nonstandard employment. Work-family demands are an established influence on both worker and offspring health. Recent studies have explored one particularly intrusive and increasingly common aspect of employment: nonstandard work. Parents' nonstandard schedules, such as irregular, evening, or weekend hours, predicted social and emotional difficulties for children ages 2 to 11, due in part to strained family relations and poorer parental well-being (Strazdins, Clements, Korda, Broom, & D'Souza, 2006).

Recent studies, however, suggest that children and parents adapt to nonstandard work schedules in the longer term. Hsueh and Yoshikawa (2007) found that the combination of variable work shifts and nonstandard hours predicted higher levels of teacher-reported externalizing behaviors among low-income families, yet this effect did not persist at the 5-year follow-up. Parents also adapted their childrearing practices:

When a mother worked at night, fathers became more involved in childrearing, which reduced children's internalizing, externalizing, and risk-taking behaviors (Barnett & Gareis, 2007).

FAMILY RELATIONSHIPS AND ADULT HEALTH: RECENT INNOVATIONS

Research on family relationships and adult health has its conceptual roots in Durkheim's (1897) *Suicide*. Close relationships provide emotional, social, economic, and instrumental supports that are protective for physical and emotional health. Although social relationships encompass ties to relatives, friends, and colleagues, most studies of adult health focus on the protective effects of *marriage*, on the assumption that this is the most salient relationship for most adults. Married persons are presumed to reap health-enhancing benefits whereas unmarried persons lack comparable advantages (Waite & Gallagher, 2000).

The assumption that marriage (or a long-term marriage-like relationship) is universally protective for all persons and all health outcomes has been challenged in the past decade, however. Four discoveries are particularly influential. First, the health benefits of being in a romantic partnership vary on the basis of *structural* aspects of one's union; legal marriage is more protective than cohabitation or a long-term same-sex union, and first marriage is more protective than remarriage. Scientists have yet to explicate *why* all unions are not equal in their consequences, however. Second, not all marriages are "good" marriages; health benefits are contingent on processes and interactions within that union. Mounting research based on survey, biomarker, qualitative, and experimental data reveals the specific processes that affect adult health, with most concurring that negative processes (e.g., conflict) are stronger predictors than positive interactions (e.g., feeling loved and cared for).

Third, researchers have made progress in disentangling whether the association between marital status and health reflects social causation (i.e., marriage provides health-enhancing resources) or selection (i.e., persons in the best health are most likely to marry and remain married). Longitudinal surveys collected over the past decade enable researchers to track individual-level health changes as one experiences marital transitions. Thus, researchers can

now effectively adjudicate between selection and causation explanations.

Fourth, scholars increasingly recognize that unmarried persons are a diverse group including those in long-term nonmarital unions as well as never married, divorced/separated, and widowed persons. Even within one marital status category, individuals differ with respect to their duration and pathway into that status. Despite increased attention to this diversity, however, married persons still serve as the benchmark against which all other relationship statuses are compared. As such, scholars have not adequately explored the ways that unmarried categories differ from one another. Further, scholars are only beginning to document sources of heterogeneity in health outcomes *within* each unmarried category, and most fail to consider the distinctive health-depleting stressors or health-enhancing resources that are unique to each unmarried status.

In the following sections, we review exemplars of contemporary research on the physical and mental health effects of marriage, remarriage, cohabitation, and same-sex unions, as well as studies documenting the health effects of transitions out of marriage and of lifelong singlehood. We summarize explanations for the so-called marriage benefit and discuss the extent to which this benefit is reaped in other types of long-term partnerships. We identify sources of heterogeneity in the consequences of each relationship status and transition, discuss individual and contextual factors that moderate the health effects of adult partnerships, and highlight unresolved questions and avenues for future research.

MARRIAGE AND ADULT HEALTH

Evidence for the Marriage Benefit?

Empirical studies show that married persons are healthier than their unmarried counterparts, and these effects persist after age, SES, and race are controlled. Studies in North America, Europe, and Asia found strong effects for all-cause mortality (Gardner & Oswald, 2004; N. J. Johnson, Backlund, Sorlie, & Love, 2000; Manzoli, Villari, Pirone, & Boccia, 2007), suicide (Qin, Agerbo, & Mortensen, 2003), and psychological distress (D. R. Johnson & Wu, 2002). Evidence was less consistent for specific physical health conditions, yet studies have found protective effects for general

measures, such as number of illnesses (Lorenz, Wickrama, Conger, & Elder, 2006), self-rated health (Williams & Umberson, 2004), and functional limitations (Hughes & Waite, 2009; Schoenborn, 2004).

The protective effects of marriage for self-rated health, chronic conditions, functional limitations, and mortality were comparable across all income and age groups (N. J. Johnson et al., 2000; Schoenborn, 2004). Marriage also conferred health benefits to men and women and Blacks and Whites, yet studies were inconclusive in documenting whether the *magnitude* of these effects varied by race and gender (N. J. Johnson et al.; Mouzon, 2009).

Some studies showed that marriage is equally protective for Blacks and Whites (N. J. Johnson et al., 2000; Schoenborn, 2004), yet others showed that marriage is less protective for Blacks because the psychological, economic, and instrumental benefits received in marriage vis à vis other social relationships (e.g., extended family, religious community) were less pronounced for Blacks (Mouzon, 2009). This remains an important avenue for future research. Some scholars have proposed that Blacks' low rates of marriage contribute to their elevated risk of mortality and morbidity (Kaplan & Kronick, 2006), yet this argument rests on the assumption that marriage benefits Blacks' and Whites' health similarly.

Research on gender differences also is inconclusive. Some studies found no differences in all-cause mortality risk (Manzoli et al., 2007), whereas others documented stronger protective physical health benefits for men, after economic factors were controlled (Gardner & Oswald, 2004; N. J. Johnson et al., 2000). The marriage benefit for mental health extends equally to men and women, although specific symptoms vary. Compared to their unmarried counterparts, married women reported fewer depressive symptoms, yet men reported less frequent alcohol use (Simon, 2002).

Studies showing either no or weak gender differences in the health effects of marriage challenge feminist scholar Jesse Bernard's (1972) influential claim that marriage is more protective to men, given enduring gender inequities within marriage. An important area of future study is whether the health benefits of marriage for men and women change over historical time, as the nature, desirability, selectivity, and relative rewards of marriage

shift. Studies are equivocal as to whether the marriage benefit in general and the gender gap in the marriage benefit increased or decreased over the past three decades (Liu & Umberson, 2008; Martikainen, Martelin, Nihtilä, Majamaa, & Koskinen, 2005).

Evidence for a Remarriage Benefit?

Nearly all studies of the marriage benefit failed to differentiate between persons in a first marriage versus a higher order marriage. A handful of studies showed that remarriage following divorce or widowhood benefited health, yet this effect was smaller than for first marriages, controlling for social selection factors. For multiple outcomes including mental health, self-rated physical health, and health behaviors, remarriage benefits were found to be (a) more modest than for first marriages (Barrett, 2000); (b) limited to specific subgroups, such as women of childbearing age (Williams & Umberson, 2004); and (c) short-lived, appearing only in the early stages of the remarriage transition (Blekesaune, 2008).

We do not know, however, *why* the health benefits of remarriage are weaker than those of first marriages. This is a major gap in knowledge, given that two thirds of women and three quarters of men eventually remarry after divorce (Schoen & Standish, 2001). Most studies of remarriage used data sets that were (implicitly) designed to study first marriage. As such, few large-scale surveys measured stressors unique to remarriage, such as negotiating complex relationships with ex-spouses and stepchildren, which may have accounted for health variation within the growing and heterogeneous category of remarried persons.

Explanations for the Marriage Benefit

Social selection and causation are the dominant explanations proposed for the marriage benefit. The *social selection* perspective holds that healthy people are more likely to marry and remain married, thus accounting for the statistical association between marital status and health. The *social causation* framework, by contrast, encompasses two distinct yet related explanations: the *resource* and "*crisis*" perspectives. The former argues that marriage provides enduring economic and psychosocial resources that enhance health (Waite & Gallagher, 2000). The

latter holds that married persons are healthier than persons who have transitioned out of marriage, because the stress of marital dissolution harms one's health (Strohschein, McDonough, Monette, & Shao, 2005). Recent research based on longitudinal data has led most scholars to conclude that the benefits of marriage reflect *both* selection and causation processes (Goldman, 2001). Three primary causal mechanisms for the marriage-health link include economic resources, social control, and psychosocial support and strain.

Economic resources. Married persons enjoy richer socioeconomic resources than their unmarried counterparts, and these resources are well-documented predictors of multiple health outcomes (Rogers, Hummer, & Nam, 2000). This association reflects selection processes, where healthier and wealthier persons are more likely to marry, and social causation, where marriage provides economic stability (Goldman, 2001).

In the past decade, researchers have documented that married persons (especially married women) were more likely than unmarried persons to be insured, to have private health insurance, and to retain coverage upon job loss, drawing on their spouse's benefits (Bernstein, Cohen, Brett, & Bush, 2008; Jovanovic, Lin, & Chang, 2004). Private health insurance coverage was associated with timely access to high-quality care (Hadley, 2003).

Social control. Spouses monitor each other's behaviors; thus, marriage is associated with a reduction in unhealthy practices, including substance use, smoking, and poor diet, and greater compliance with medication regimens (DiMatteo, 2004). Effects are stronger for men, because women are more vigilant monitors, and they engage in fewer unhealthy practices that require monitoring (Duncan, Wilkerson, & England, 2006). The health-monitoring effects of marriage are contingent on the nature of spousal interactions, however. Intervention studies showed that spouses who were taught to use fewer negative tactics (e.g., nagging) were more effective in promoting positive health behaviors (Campbell, 2003).

An important new discovery is that marriage may not necessarily promote good (or squelch bad) health behaviors, because spouses tend to share health behaviors (Meyler, Stimpson, &

Peek, 2007). For example, two married smokers may reinforce rather than curb each other's habits. Most studies of marital status and health, however, capture only one partner's health behaviors. As more data sources collect health behaviors from both partners and as dyadic data analysis techniques become more widely used (Kenny, Kashy, & Cook, 2006), future studies may better document how spouses help *or harm* each other's health.

Psychosocial support and strain. Married persons are presumed to have more socioemotional support than their unmarried peers, yet recent studies found that this benefit is contingent on the emotional climate of one's relationship (Kiecolt-Glaser & Newton, 2001). Survey-based studies showed that marital strain and negative spouse behaviors increased mortality and heart disease risk (De Vogli, Chandola, & Marmot, 2007; Tower, Kasl, & Derefsky, 2002), psychological distress (Hawkins & Booth, 2005), and poor self-rated physical health (Liu & Umberson, 2008). Effects are generally stronger for women than men (Williams & Umberson, 2004), and persist over the life course (Umberson, Williams, Powers, Liu, & Needham, 2006).

A pathbreaking development over the past decade has been the investigation of physiological pathways through which marital interactions "get under our skin," with particular attention to cardiovascular, endocrine, immune, metabolic, and sympathetic nervous systems (Ryff & Singer, 2001, p. 214). Experimental approaches typically induced either conflict or closeness among couples in laboratory settings and then gauged one or both spouses' physiological response. Studies of negative interactions consistently showed that conflict can impair immune response, slow wound healing, heighten susceptibility to infectious agents, and increase cardiovascular reactivity, all factors that compromise physical health in the long run (Robles & Kiecolt-Glaser, 2003). Experiments focusing on positive interactions showed that inducing physical contact and closeness under a stressful condition led to decreases in blood pressure and heart rate and increases in oxytocin, a hormone that weakens the impact of stress (Grewen, Girdler, Amico, & Light, 2005).

In sum, marital interactions directly influence immune, cardiovascular, and endocrine system responses. Most recent lab studies, however, used nonrepresentative samples, typically

of long-married couples, and did not test how characteristics of the individual and marriage moderate the link between marital interaction and physiological response. The availability of biomarker data and self-reported measures of marital quality, histories, and health in population surveys may enable further investigations in the coming decade.

MARRIAGE-LIKE RELATIONSHIPS AND ADULT HEALTH

One of the most important inquiries over the last decade is whether the marriage benefit extends to marriage-like relationships, including nonmarital cohabitation and same-sex unions. Most empirical studies concluded that cohabitation is less protective than marriage, even when selection factors were controlled (Brown, 2000; Marcussen, 2005; Wu & Hart, 2002). Limited evidence suggests that partnered gays and lesbians reported poorer psychological well-being though comparable physical health relative to their married counterparts (Wienke & Hill, 2009). These patterns varied, however, on the basis of characteristics of the relationship, such as stability, duration, and quality. We summarize patterns and suggest plausible explanations for the more modest health benefits of heterosexual cohabitation and same-sex relationships vis à vis heterosexual marital relationships.

Cohabitation

More than half of all recent marriages in the United States were preceded by cohabitation (Kennedy & Bumpass, 2008). Cohabitation provides marriage-like benefits, including emotional and physical intimacy, economic cooperation, and sharing of household chores (Manning & Smock, 2005). Cohabitors fared better than unpartnered persons yet worse than married persons in terms of depressive symptoms (Brown, 2000), suicide risk (Qin et al., 2003), all-cause mortality (Koskinen, Joutsenniemi, Martelin, & Martikainen, 2007), substance use (Kenney & McLanahan, 2006), and self-rated physical health (Wu, Penning, Pollard, & Hart, 2003). Transitions into cohabitation carried fewer mental health benefits than transitions into marriage (Brown), whereas exits had less harmful effects on depressive symptoms than did exits from marriage (Wu & Hart, 2002). The mental health

benefit of marriage was reduced if the marriage was preceded by cohabitation (Lamb, Lee, & DeMaris, 2003).

The health benefits of cohabitation vary on the basis of gender and life course stage. For example, young men (but not women) experienced similar reductions in marijuana use and binge drinking whether they entered cohabitation or marriage (Duncan et al., 2006). Older cohabiting men, by contrast, received fewer spousal caregiving benefits than their married peers (Marcussen, 2005), perhaps because older cohabiting women felt less obligation to provide this care (Brown, Bulanda, & Lee, 2005).

The weaker protective effects of cohabitation vis à vis marriage generally are explained by three factors: poorer relationship quality, greater instability, and social selection (Marcussen, 2005). Brown (2000) found that cohabitators were more likely than married persons to worry about relationship dissolution, and these concerns predicted poor health. Although some studies suggested cohabiting relationships are more violent than marriage (Cherlin, Burton, Hurt, & Purvin, 2004), this difference is due to social selection rather than causation (Kenney & McLanahan, 2006).

Most studies concur that the kinds of persons who cohabit (i.e., those who were “selected” into cohabitation rather than marriage) share characteristics that give rise to poorer health. These characteristics included being physically or sexually abused as a child (Cherlin et al., 2004), greater sexual infidelity (Treas & Giesen, 2000), less education, lower earnings potential (Xie, Raymo, Goyette, & Thornton, 2003), and poorer health behaviors (Koskinen et al., 2007). After selection factors were controlled, however, most studies still found that cohabitators fare better than unmarried persons yet worse than married persons.

An important line of future research is to explore further *for whom* and *for which outcomes* cohabitation is protective; a qualitative study by Manning and Smock (2005) showed that cohabitators are diverse and include those who intend to marry in the near term, hope to marry but lack the economic resources to do so, and view cohabitation as a desirable and permanent alternative to remarriage. Cross-national research suggested that cohabitation may be as “healthy” as marriage in contexts where it is culturally normative. In Finland, where cohabitation is widespread, married and cohabiting

persons did not differ in self-rated health (Joutsenniemi et al., 2006). As cohabitation becomes more normative in the United States, it is plausible that long-term cohabiting relationships may be just as protective as marriage.

Gay and Lesbian Relationships

Few studies have explored systematically the health benefits of same-sex unions, because of the small numbers of long-term partnered gays and lesbians in population-based surveys of health. One recent study, however, merged data from the General Social Survey, National Health and Social Life Survey, and the Chicago Health and Social Life Survey and compared partnered gays and lesbians with married, cohabiting, dating, and nonpartnered heterosexuals and nonpartnered gays and lesbians (Wienke & Hill, 2009). Partnered gays and lesbians were similar to married persons and straight unmarried cohabitators in terms of self-rated health. Similarly, qualitative studies showed that committed gay male partners monitored their partners' health behaviors in ways similar to married heterosexual partners (Lewis, Gladstone, Schmal, & Darbes, 2006).

In the next decade, researchers may have more opportunities to investigate whether legal civil unions in the United States provide the same health benefits as heterosexual marriage and whether civil unions are more protective than long-term same-sex relationships that are not state sanctioned. M. King and Bartlett (2006) proposed that "the social respectability conferred by state sanction of same-sex relationships combined with the financial benefits of such unions and the necessary commitment to a shared future may have positive health effects" (p. 189).

TRANSITIONS OUT OF MARRIAGE AND ADULT HEALTH

Classic studies of divorce and widowhood presumed that all dissolutions were stressful and deleterious to mental and physical health (Holmes & Rahe, 1967). Contemporary research, however, reveals that marital dissolution does not have uniformly harmful consequences. First, longitudinal studies revealed that at least some of the purportedly negative consequences of dissolution were due to social selection; unhealthy persons were more likely to

become divorced or widowed and less likely to subsequently remarry (Sbarra & Nietert, 2009). Second, the magnitude and duration of such effects varies on the basis of characteristics of the relationship, transition, and outcome considered. Researchers recognize that a marital transition comprises both a *stressful event* and the *chronic strains* that precede and follow the event, each of which may have affected health in distinctive ways. We now describe the ways that divorce/separation and widowhood are linked with physical and mental health, identify sources of variation in the health of formerly married persons, and point out the relative contributions of selection versus causation explanations.

Health Effects of Divorce and Separation

Studies using cross-sectional and administrative data show that currently divorced persons (men and women, Blacks and Whites, and all ages) have an elevated risk of all-cause, cardiovascular disease, cancer, and suicide mortality relative to married persons (N. J. Johnson et al., 2000; Manzoli et al., 2007). Studies based on multi-wave data, however, showed that much of this gap was due to selection, particularly the disadvantageous health and personality traits of those who divorced and did not remarry (Sbarra & Nietert, 2009).

Longitudinal studies revealed that divorce had short-term negative effects on mental health. Strohschein and colleagues (2005) used growth curve models to track divorced persons over a 6-year period. Both men and women had short-term increases in depressive symptoms, which declined and plateaued in the longer term (see also Blekesaune, 2008; Lorenz et al., 2006). Studies generally concurred that neither gender fares systematically "worse" postdivorce; rather, they reported different reactions, where women reported elevated depressive symptoms and men increased their alcohol use (Simon, 2002).

Prospective analyses of the physical health consequences of divorce yielded less clear-cut findings, however. Williams and Umberson (2004) found that continuously married and "stably divorced or widowed" persons were similar in self-rated health levels over an 8-year follow-up period. Lorenz and colleagues (2006), however, found that stably divorced women had poorer health than continuously married persons, yet this disadvantage emerged only

10 years postdissolution. The authors attributed the delayed effects to the cumulative, long-term strains of managing financial strains and juggling childrearing with paid work.

The long-term effects of divorce also vary on the basis of whether one remarries. As noted above, health typically improves on remarriage, although this effect is weaker and less enduring than the first marriage benefit. Remarried persons reported fewer depressive symptoms, less distress, and less alcohol use compared to formerly married persons who did not remarry (Blekesaune, 2008; D. R. Johnson & Wu, 2002). The primary explanations are increased economic resources for women, improved instrumental and emotional support for men, and positive selection into remarriage for both genders (Wade & Pevalin, 2004).

Heterogeneity in the divorce experience. Divorce is not a monolithic experience; as such, its consequences are contingent on the *nature of one's marriage* and the *context of the transition*. Recent research supports the thesis that role loss is not harmful for persons exiting unsatisfying roles. Analyses showed that persons who dissolved stressful marriages reported gains in self-rated health over an 8-year period (Williams & Umberson, 2004) and a 12-year period (Hawkins & Booth, 2005) relative to persons who remained in troubled marriages. Limited evidence suggests, however, that distress may persist even after a troubled marriage ends. Kalmijn and Monden (2006) found that persons who exited marriages marked by moderate levels of verbal and physical aggression showed an increase in depressive symptoms. They reasoned that marital strains, such as custody or child-support battles may persist even after the legal marital tie is dissolved.

In sum, divorce affects depressive symptoms in the short term, its effects are generally comparable for men and women, and its consequences are contingent on the nature of the marriage. Two important questions remain unresolved, however. First, we do not know how the stress of divorce affects physical health. Laboratory-based research offers promising new findings: Divorce-related stressors may affect blood pressure reactivity, which, if persistent, could impede health (Sbarra, Law, Lee, & Mason, 2009). Second, studies fail to consider that divorce occurs within a larger family context, and its consequences could vary on

the basis of other concurrent family roles and obligations such as caring for parents or children.

Health Effects of Widowhood

The death of one's spouse was associated with elevated risk of mortality (Manzoli et al., 2007), functional limitations (Schoenborn, 2004), and depressive symptoms (Lee & DeMaris, 2007) during the first 2 years postloss; effects were consistently larger for men than women. Common wisdom attributes the widowhood-mortality link to the survivor's "dying of a broken heart," yet empirical evidence points to spouses' shared environment; strains of caregiving; poor health behaviors postloss (especially for men), including erratic sleep, compromised diet, and poor compliance with medication regimens; and selection, where the healthiest widow(er)s were most likely to remarry (Elwert & Christakis, 2008).

In the past decade, researchers have moved away from comparing the health of bereaved persons with their married counterparts and instead focus on sources of heterogeneity among the bereaved, especially with respect to their psychological health. This shift in focus is driven, in part, by three forces. First, a minority (just 15%–30%) of bereaved spouses experience long-term clinically significant depressive symptoms; thus, practitioners are particularly interested in identifying bereaved persons at greatest risk (Hansson & Stroebe, 2006). Second, researchers have debunked the notion that bereaved persons go through a universal set of "stages" or symptoms (Zisook & Shear, 2009), thus encouraging researchers to focus on variations in symptom trajectories. Finally, data sources that focus specifically on the bereaved are available to researchers. One such study, the Changing Lives of Older Couples, was designed to study prospectively the distinctive experiences of widow(er)s. This resource enables researchers to pinpoint factors that contribute to variations in well-being among the bereaved in the 4 years postloss.

Heterogeneity among widow(er)s. The extent to which health declines following widowhood varies on the basis of the nature of the transition. In general, anticipated deaths tend to be less distressing than unanticipated ones, yet, for older adults, the former often are preceded by stressful spousal caregiving and neglect of one's

own symptoms, which may harm one's own health (Carr, Wortman, Nesse, & Kessler, 2001; Kiecolt-Glaser & Glaser, 2001).

The consequences of widowhood, like divorce, also vary on the basis of the nature of the late marriage. Older persons whose late marriages were marked by high levels of warmth and dependence and low levels of conflict experience elevated grief symptoms relative to persons in poor-quality marriages (Carr et al., 2000). Our current knowledge about the health effects of widowhood, however, is based on current cohorts of older adults only; thus, researchers know little about the health consequences for younger persons or more recent cohorts of bereaved elders. This is an important line of inquiry in the next decade.

THE UNPARTNERED: HEALTH OF NEVER MARRIED PERSONS

Never married persons have been virtually absent from research on families and adult health. This subgroup is small and difficult to define; most young and midlife persons identified as "never married" in cross-sectional surveys will marry eventually. Among persons ages 65+ in the United States, only 3%–4% of men and women have never married (Spraggins, 2005). This small number limits researchers' ability to conduct adequately powered analyses using data from nationally representative health surveys.

Researchers historically have classified never married persons in the large, heterogeneous category of "unmarried," which also includes divorced, separated, and widowed persons. As discussed above, the latter three groups experience short-term, posttransition decrements in health, and those who remain unmarried may be negatively selected on the grounds of poor health. As such, research on "unmarried" persons may overstate the health disadvantage of the never married.

Mortality is one of the few outcomes studied among the never married because mortality and marital status data are available on very large administrative data sets such as the National Longitudinal Mortality Study (N. J. Johnson et al., 2000) and vital registries (Manzoli et al., 2007). These data sources, however, include limited demographic measures, so investigators cannot adequately identify the pathways through which singlehood affects health. Analyses

showed that never married persons are at elevated risk of overall and some cause-specific (e.g., heart disease, suicide) mortality risks (N. J. Johnson et al.; Manzoli et al.; Qin et al., 2003), yet they did not explicate *why*.

A handful of survey-based studies provide preliminary insights into how singlehood affects health, although most are focused on later life because never married persons in younger samples may still ultimately marry. Older (age 65+) never married women enjoyed mental health (Pudrovska, Schieman, & Carr, 2006) and physical health (Cwikel, Gramotney, & Lee, 2006) equal to their married peers and superior to their formerly married counterparts. These patterns partly reflect selection, where older cohorts of never married women are more educated than their married and formerly married peers and have higher levels of economic stability than their divorced or widowed peers. Both studies concluded that never married women adjusted to their status over time; they chose relationships that offered socioemotional support (Pudrovska et al.) and relied on formal services such as meal preparation services to help manage age-related health declines (Cwikel et al.).

In sum, research suggests that never married women are not disadvantaged with respect to mental health, yet unmarried men and women have an elevated—and unexplained—mortality risk relative to their married peers. Psychologists' recent strides in conceptualizing and operationalizing "loneliness" (i.e., a discrepancy between one's desired and actual relationships) may help scholars to explicate the linkage between singlehood and physical health. Loneliness is linked to sleep problems, poor cardiovascular health, and elevated blood pressure, each of which carries long-term consequences for mortality risk (Cacioppo et al., 2002). Future studies of singlehood—as well as all other marital statuses—and health could benefit from the recognition that the presence or absence of a relationship may be less important for health than the desirability of that relationship.

CONCLUSION AND FUTURE DIRECTIONS

Summary of Key Contributions

Over the past decade, researchers have documented that the health implications of family statuses vary on the basis of structural, processual, and contextual aspects of the relationship,

the nature and timing of one's transition in or out of a family status, and other resources and relationships prior to, during, and after that transition. Recent studies also identified specific aspects of interpersonal interactions that affect child and adult health. This is an important line of inquiry, because relationship dynamics are potentially modifiable factors. Although public policy initiatives at the turn of the 21st century encouraged *marriage*, current programs have the more realistic goal of encouraging *healthy relationships*. Such programs include parent education, conflict resolution, communication, health behaviors, and financial literacy modules (Halford, Markman, & Stanley, 2008). Although these programs cannot ameliorate a root cause of unhealthy relationships—economic adversity—they may provide at least some benefits for child and adult health.

Finally, contemporary research has begun to explicate how family relationships get under our skin to affect health outcomes. Laboratory research has set the foundation by measuring the physiological responses of couples placed in either stressful or supportive settings (Robles & Kiecolt-Glaser, 2003). In the past decade, however, a number of large representative sample surveys of adolescents (Add Health) and adults (MIDUS) have supplemented their self-reported health data with extensive biomarker measures, including genetic and biological indicators, such as immune response measures. We are optimistic about the scientific discoveries that may develop in the next decade, as interdisciplinary teams of researchers continue to investigate the complex ways that demographic, socioeconomic, biological, psychosocial, and genetic factors link family structures and processes to health outcomes over the life course.

Directions for Future Research

In the coming decade, we expect that scientists will make even further advances in the study of families and health by using *cutting edge quantitative research methods* (dyadic- and family-level analyses and behavioral genetics approaches); by relying on *qualitative methods* to investigate in depth the distinctive ways that families affect health in underresearched subpopulations; and by developing concepts, measures, and models to link family roles and processes to *specific health outcomes*. We briefly highlight what we see as the most

promising avenues for researchers in the coming decade.

Dyadic and family-level analyses. One of the most ironic limitations of studies on “families” and health is that most focus on *one individual* within the larger family network. This limitation is due, in part, to traditional models of data collection where one person answers survey questions on his or her own union, parental status, relationship quality, and own self-rated health as well as the health of one's spouse or a randomly selected child. Although studies based on such data are immensely valuable in documenting associations and causal pathways, they fail to capture the complexities of family life, including the possibility that two romantic partners, siblings, or coparents experience their relationship (and the health consequences thereof) in starkly different ways.

Dyadic data analysis allows researchers to use data from multiple reporters, such as husbands' and wives' reports of marital quality, to estimate how much each person's outcome is associated with both own and partner characteristics. This approach enables researchers to explore how both spouses' reports of marital conflict are associated with each spouse's health behaviors (Sandberg, Harper, Miller, Robila, & Davey, 2009) and how parenting practices affect the internalizing and externalizing behaviors of multiple siblings within a single family (Yu & Gamble, 2008). We suspect that these pathbreaking studies and methods will set the stage for further family-level explorations in the coming decade.

Genetic data. Researchers have long attempted to understand the relative contributions of genetic versus social influences on health. In the last decade, however, scientific knowledge and available data have become sufficiently sophisticated to identify specific gene-environment interactions that affect health. One line of research builds on early sibling studies but uses new data sources (e.g., survey data on adopted, biological, and twin siblings) and modeling techniques (fixed- and random-effects models) to assess the distinct contributions of genetic and social factors on child health outcomes (Martin, 2008).

A highly promising development is the identification of specific genetic polymorphisms (i.e., genetic variations that produce different outcomes within the same species) that affect

health risks both directly and in conjunction with family process and structure indicators. For example, Guo, Roettger, and Cai (2008) found that specific polymorphisms predicted adolescent delinquency net of confounding variables; however, a significant effect was not detected among adolescents who shared daily meals with their parents. These provocative findings suggest that family processes may limit (or facilitate) the extent to which a genetic propensity for a particular condition is expressed. Future studies of genetics and environment may reveal those individuals at greatest genetic risk of health problems as well as the family and contextual processes that protect against or exacerbate these risks. Despite the potential of behavioral genetics research to uncover pathways linking families and health, we caution researchers to carefully assess the policy and practical implications of gene-environment studies of families and health.

Qualitative methods to study underresearched populations. Social and medical scientists have made important strides in documenting population-level relationships between family characteristics and child and adult health outcomes. We do not know, however, whether such population-level patterns hold in ethnic communities, among recent immigrants, and (as noted earlier) among gay and lesbian couples. Small-scale qualitative studies provide insights into the ways that the distinctive cultural views and practices of ethnic families affect health and health behaviors. For example, Confucian values including filial piety affect the ways adult children monitor the health of aging parents among Chinese Americans (e.g., Park & Chesla, 2007). Gendered cultural views such as “machismo” (i.e., men’s adherence to traditionally masculine, high-risk behaviors) and “marianismo” (i.e., women’s self-sacrifice for spouse and children) in Latino families affect both family relations and health practices (Cianelli, Ferrer, & McElmurry, 2008). We are optimistic that future research will blend qualitative and quantitative research to better illuminate the ways that cultural context shapes the relationship between family and health, broadly defined.

Focus on specific health outcomes and etiologies. In the coming decade, we encourage researchers to move beyond broad measures of physical health (e.g., all-cause mortality,

self-rated health) and child well-being (e.g., internalizing and externalizing behaviors) to instead focus on *specific outcomes*, such as risk of heart disease, specific forms of cancer, diabetes, child attention-deficit hyperactivity disorder, asthma, and other relatively high-prevalence conditions that can be studied at the population level. Qualitative and intervention studies targeting specific illness groups also could identify those aspects of family roles and relations that are associated with better symptom control and disease progression within each illness group.

Current research on cardiovascular disease provides an exemplar of how knowledge is accumulated across disciplines and research methods. Survey data reveal that married persons are less likely than their unmarried peers to die from heart attacks and have a greater likelihood of recovery after receiving a diagnosis of cardiovascular disease (N. J. Johnson et al., 2000). Laboratory and biomarker studies show that persistent high-quality emotional and instrumental support both reduce risk of a coronary event and facilitate recovery (Coyne et al., 2001; Kiecolt-Glaser & Newton, 2001). Small-scale studies conducted by nursing researchers have identified modifiable factors such as spouse and patient fears that are associated with poor recovery from a coronary event (e.g., Santavirta, Ketunen, & Solovieva, 2001); such findings may be translated into practice at hospitals and other care settings. This kind of cumulative, cross-disciplinary building of knowledge, through the use of multiple data sources and methods, sets an example for future studies of families and their influence on the etiology, onset, and progression of mental and physical health conditions.

NOTE

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