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Public Health and the Aging Family

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ABSTRACT

The role of the family in the health of its members is critical from birth to death. This review focuses on the aging family, recognizing that the family is one of the earliest and longest lasting contexts influencing health. In particular, we emphasize the changing demographics of the family including the increased numbers of older family members and the decreased number of children. We consider how best to adapt to the changing family so that its critical role in maintaining individual and public health can be retained and enhanced. We begin by highlighting the importance of taking both a life span and life course perspective, recognizing that individuals develop and change over their lifetime. At the same time, they are members of groups and organizations, which shape their life course. We next consider the dramatically changing demographics of the population generally and within families specifically. We reflect on how these changes impact public health both positively and negatively, taking into account the potential of the family as a resource and a risk factor. We next consider five life course epidemiological models of health: the immediate effects model, the social trajectory model, the cumulative biological model, the sensitive period or latency model and the physiological effects of trajectory model. We explicitly consider the relevance of these models for the family and its aging members. Finally, we highlight what we consider the most important implications of these issues for the health and well-being of older adults and families in an aging society.

Key Words: Aging, family, lifespan, lifecourse, social relations, epidemiological models

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INTRODUCTION

The role of the family in the health of its members is critical from birth to death. While the family itself is changing, its role in the health of its members remains critical. Medical and other advances have alleviated

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many of the 'traditional' threats to public health through, for example, improved sanitary conditions, the availability of penicillin for infections, and better food preparation and storage. While this has improved health, as shown by increased longevity, this has also lead to an increase in those living with chronic illnesses.[1] There are also new threats to individual and public health such as viruses like the H1N1 influenza virus, bacterial infections that are resistant to antibiotics, environmental toxins, and obesity. These threats may require rethinking known strategies for maintaining and improving public health. This is consistent with and complements the Institute of Medicine's[2] claim that in the future major gains in health are likely to come, not from the medical or biological sciences, but rather from the social and behavior sciences. In this review we focus on the aging family, recognizing that the family is one of the earliest and longest lasting contexts influencing health. In particular, we emphasize the changing demographics of the family including the increased numbers of older family members and the decreased number of children. We consider how best to adapt to the changing family so that its critical role in maintaining individual and public health can be retained and enhanced.

We begin by highlighting the importance of taking both a life span and life course perspective, recognizing that individuals develop and change over their lifetime. At the same time, they are members of groups and organizations, which shape their life course. We next consider the dramatically changing demographics of the population generally and within families specifically. We reflect on how these changes impact public health both positively and negatively, taking into account the potential of the family as a resource and a risk factor. We next consider five life course epidemiological models of health and their relevance for aging family members. Finally, we highlight what we consider the most important implications of these issues for the health and well-being of older adults and families in an aging society.

LIFE SPAN AND LIFE COURSE PERSPECTIVES

To best understand the role of the family in the health of its members it is critical to recognize that the association between family and health as neither static nor isolated but rather as dynamic and cumulative. The life span and life course perspectives[3] are particularly useful as we contemplate the role of the family in the health of its members. The major tenets of each perspective are outlined below with particular attention to the role of its aging family members.

The life span perspective[4] focuses on the individual as he or she develops over time. Work within this perspective often highlights individual differences in functioning recognizing that these are likely to change over time with development, growth, maturation, gains, and losses. This is particularly important for older family members since they have had the longest accumulation of experiences. Life span developmental scientists emphasize three components of development: commonalities, interindividual differences, and intraindividual plasticity. Individual functioning is often the focus of life span developmental scientists who study, for example, changes in physical, cognitive, and social characteristics of the individual. Thus, the life span developmentalist is interested in those aspects of functioning that are relatively universal or common across all individuals.

Traditionally emphasis has been on the early stages of the life cycle, however, changes in the later portions of the life cycle have been increasingly recognized as important. Examples for those at the early stages of the life cycle, might include recognition that all individuals develop physically over time, e.g., get taller, gain weight, learn to walk, go through puberty, etc. But changes also occur at the latter stages of the life cycle. For example, individuals start to lose height, their hair turns gray, they frequently develop vision or hearing problems, etc. Also of particular interest are differences across individuals, e.g., individuals of all ages vary in height – some are short, others tall, some gain more, others less weight, some people's hair goes gray, others lose all their hair. Similarly, different people experience developmental milestones at different ages, e.g., experiencing puberty or menopause; becoming parents or grandparents on or off the typical timeframe. Clearly these differences can be relatively meaningless (e.g., one child learning to walk at 9 months while another learns to walk at 9.2 months) or meaningful (e.g., experiencing menopause at thirty rather than fifty or developing dementia at 55 versus 95 years of age). Also important are intraindividual differences, i.e., differences within the same individual across different areas of functioning. Here, an individual can exhibit normal or advanced functioning in one area but deficient functioning in another, e.g., an elder functioning at an advanced cognitive level but suffering from severe arthritis.

Life span differences are important for understanding similarities and differences in health. Individuals who have consistent and long term deficits in nutritional intake, for example, are likely to have different functional and health trajectories than individuals who have either short intermittent deficits or adequate nutritional intake over their lifetime. Their adaptivity, plasticity and resilience are also likely to be differentially influenced.[4]

The life course perspective focuses on the broader context within which people live, the different groups or organizations to which they belong as well as the influences those groups have on their life pathways and trajectories.[5,6] The life course perspective examines macrolevel influences on the individual. These influences can be framed within groups, cohorts, organizations, and societies. One important life course influence is the family since most individuals claim membership in some type of family, biological, legal or fictive. Other common macrolevel organizations include schools, employment contexts such as companies and corporations, religious organizations, and neighborhoods. Each engenders role demands and responsibilities. These macrolevel influences are also important to health since they often determine the risks and resources to which individuals are exposed. Each macrolevel influence (e.g., families, schools, employer, religious institutions, neighborhoods, governments) can provide nurturance and support but they can also expose the individual to physical and psychological threats resulting in the accumulation of disparities over time. People of different ages are often members of different cohorts and historical periods. The current cohort of older people experienced both world wars, the great depression, and the invention of radio, television, airplane travel, the internet and the cell phone. All of these experiences uniquely influence who they are, what they consider noteworthy, what they expect, and what they feel is expected of them. These influences provide the context within which people live and are often associated with the accumulation over time of equalities or inequalities in resources (financial, educational, and health).

Families influence the life span trajectories and life course experiences of the individual, and have important implications for health at both the individual and societal level. As the Institute of Medicine[2] claimed, just as there have been changes to the most important influences on health, so, too, have there been important differences in the demography of the family and the population in general. Since these changes have the potential to influence health as well, we turn next to a consideration of changing family demographics.

FAMILY DEMOGRAPHICS

Economic and social changes have lead to changes in the structure and composition of families. The traditional nuclear family consisting of one father, one mother and their biological children is no longer representative of families today. In 2000, only 24 percent of all United States households

consisted of a married couple and their children.[7] Families now include those related by biology, adoption, marriage, dependence, obligation, and affection.[8-10]

Changes in marital practices over the past 40 years have led to changes in the way families form. Individuals are waiting longer to get married, with 28 percent of females and 37 percent of males 30 to 34 years old remaining unmarried compared to 7 percent of females and 11 percent of males in 1970.[7] In the EU25 (the European Union consisting of the 25 member states as of 2004), both men and women are getting married for the first time on average five years later than their counterparts in 1975, at 30 years old and 28 years old respectively.[11] Couples are increasingly making the decision to cohabitate either before marriage, instead of marriage, or during their post-divorce relationships. The number of cohabitating couples in the US in 2003 was approximately 4.6 million[12] about four times the number in the 1970s.[13] Among those who decide to marry, one-third of those first marriages end in divorce after ten years.[14] In the EU25, one-third of marriages will also end in divorce.[11]

As a result of changes in marriage, there are more re-formed and blended families[15,16] and a number of children belonging to multiple family units. In 2000, two out of five children lived with a parent and the parent's unmarried partner during some of their childhood years.[17] These changes in marital practices have implications for future social resources.[18,19] Those who choose to cohabitate and not marry may have more difficulty in providing social support for their partner depending on the legal rights afforded to cohabitating partners. Individuals who divorce but do not remarry may lose the positive influence spousal support has on their health and may need to rely on other individuals in their support network such as children, friends, or other family. Those who remarry and blend their families also face challenges when family members experience a decline in health as family roles and responsibilities are often not defined.[20,21]

Single parent households have also become more common, in part due to changes in marital practices, attitudes towards marriage and family, as well as advances in reproductive technology. Marriage is no longer a necessary criterion for becoming a parent[22] especially for those who have the means to care and provide for a child independently. Some single parent households are a result of the unavailability of one parent. This unavailability can be for a variety of reasons such as illness, addiction, institutionalization, and/or unwillingness to be an involved parent.[23,24] Other single parents have chosen to have and raise a child by themselves. This occurs through unplanned pregnancies, adoption, or the use of reproductive technology.

The number of unmarried births in the US has risen from 18 percent in 1980 to 39 percent in 2006.[7] Single parenthood has implications for later social resources. Single parents may have fewer social resources and may be more reliant on their children and grandchildren for care as they age.

Individuals are not only delaying marriage until later in life, they are also delaying starting families. The overall level of fertility in the US has remained fairly stable since the 1970s, at approximately two children per woman[7]; while fertility rates in the EU25 have declined from 1.79 children per woman in 1980 to just below 1.5 children per woman in 2004.[11] Many of these women are choosing to postpone having children, most likely due to economic and social factors. Women in the US reported having their first child at 25 years of age on average in 2006 compared to 21 years old in 1970.[25] Women in the EU25 are also delaying having children with the average age of first birth increasing to 28 years old in 2004 from 24.9 years old in 1980.[11] Delaying childbirth may affect a child's ability to provide care later for their aging parents, physically, emotionally, and financially. For individuals who have children later in life, their child may not be in a position to provide care for their parent when in need. For example, children may be away at school, starting their own family or still struggling financially in the early stages of a career just as their parents begin to experience declines in health.

These changing family demographics have additional important implications for caregiving responsibilies. Older family members may be the most affected as they tend to be care providers or care receivers. Grandparents are increasingly raising or helping to raise grandchildren. Grandmothers raising grandchildren in the absence of any parent has been linked to lower self-rated health and negative changes in health behavior.[26] Additionally, Lower fertility rates mean there are fewer people to share caregiving responsibilities for children, siblings, parents, and grandparents. As family members face acute illnesses, disabilities or chronic illness older people will have fewer people to turn to and will more often be called upon to help with the needs of other family members.

Changes in family structure and composition also have implications for current and future health and well-being. Parents, siblings, spouses and children affect health directly and indirectly by influencing health behaviors such as diet, exercise, smoking, and drinking. Family members represent an important social resource for individuals of all ages as they are often relied on to provide both emotional and instrumental support. If immediate family members are unavailable, individuals are likely to turn to more distal family members for help. Older people are likely to be increasingly

called on to provide support to family members and at the same time, have fewer family members on whom they can rely when they are in need.

FAMILIES AS A RESOURCE OR RISK FACTOR

Families are generally considered to be a vital resource and integral part of an individual's social network across the lifespan. Family relationships, like all relationships, vary in positive and negative qualities as they make an individual feel loved and cared for as well as irritated and frustrated.[27,28] How family relationships influence health and well-being depends on numerous factors including the specific context of a particular interaction as well as the individual's perception of their relationships and support exchanges. Each specific familial relationship, for example, parent, child, spouse, and sibling, is likely to have a unique influence on an individual's health and well-being. The nature and dynamic of relationships may be different for each relationship and across time.

The parent-child relationship is one of the most central relationships in the lifetime of both the parent and child. This relationship is dynamic over the life course as role changes are associated with both consistency and change in the support exchanged between parent and child.[29] Parents are usually a source of aid, affect and affirmation that include basic needs, emotional, and practical support as well as informational support for their children throughout their lives.[30] The parent-child relationship is beneficial to the child's health and well-being if parents provide a safe and loving environment but it may also be a risk factor if parents are unsupportive or neglectful.[31] Children often influence their parents' health and well-being as well. Having children helps parents organize their lives and identify life goals. Parents and grandparents may also engage in healthier behaviors and decrease risky behaviors[32] so that they may provide a better environment and be good role models for their children and grandchildren. Children are most often the source of joy and pride for their parents[33] and may help offset feelings of loneliness by involving their aging parents in their lives.[29] At the same time, children can be the source of stress and irritation for their parents if they make too many demands and put a strain on their parents' resources.[33,34] This can have and negative influence on the parents' and grandparents' health.

Although the parent-child relationship, especially among young children, has received a great deal of attention, much less attention has been paid to the adult child-parent relationship. Rather, the majority of research on adult social relations has focused on the marital relationship. Spouses provide

daily emotional and instrumental support as well as promote healthy behaviors.[34] The normal daily interaction between spouses provides an ideal opportunity for individuals to encourage good health behaviors such as eating well and exercising but they can also encourage bad health behaviors such as a smoking, drinking and a sedentary lifestyle.[35] Recent research on older married couples has focused on how spouses can complement the strengths and offset the weaknesses of their partners.[36,37] This complementary compensation can allow older couples to maintain independence despite mild cognitive and physical impairments. It can also serve to help elders maintain their health by supporting healthy behaviors and healthy regimens. On the other hand, some marriages are characterized by conflict, which can be detrimental for health and well-being at any age. Although research has shown that some conflict, especially if also accompanied by positive relationship characteristics can actually lead to better health and mortality outcomes.[27] As members of the aging marital dyad become more seriously ill, spouses often assume the role of caretaker.[29] While an important resource for the frail elder, this may add stress and strain to the caretaking spouse but it also may decrease burden on other family members.

Compared to the parent child and spousal tie, sibling relationships are among the longest relationships people have in their lifetime.[38] During childhood, siblings serve as mentors or rivals or both.[39] Siblings may model positive behaviors such as staying in school or deviant behaviors such as joining gangs. Sibling rivalry may also be detrimental to the individual since it can lead to feelings of inadequacy and resentment. During the later part of the lifespan, siblings provide companionship, especially as other close relationships are lost often through death, divorce or ill-health.[40,41] These life-long relationships sometimes become re-energized and close again in late life, although they may also become stressful as siblings take on the role of caregiver because no one else is available or willing to take on that role.[29]

SOCIAL RELATIONS AND HEALTH

Research suggests two explanations for the link between social relations and health. These are most often described as the main effect and buffering hypotheses. The main effect hypothesis posits that social relations influence health and well-being under all conditions.[42] An example of the main effect hypotheses is the wife who always encourages her husband to exercise and eat well. The buffering hypothesis, on the other hand, is conditional and suggests that social relations are most influential predominantly during

times of stress. Thus, social relationships buffer, e.g., an individual's reaction to a stressful event[43] or their ability to cope with it.[44] Recent research has offered a more nuanced understanding of the buffering hypotheses, suggesting that the effectiveness and direction of social relations effects may vary depending on the health of the individual.[27,45] Social relationships, as well intended as they are, may also exacerbate stressful circumstances. Antonucci and Akiyama[46] proposed the reverse buffering hypothesis where ineffective support may exacerbate the stressful situation. An example would be the anxious but well-meaning adult daughter who closely monitors the actions and behaviors of her post-operative mother to the point where the parent feels smothered and infantilized by the overly solicitous daughter. This could lead to poor recovery as the parent becomes increasingly frustrated in her efforts to recover her independence.

It has been postulated that social relationships with close others such as parents, children, siblings and spouses influence health and well-being by increasing the individual's self-efficacy. Previous research suggests that self-efficacy may be a mechanism through which social support influences health as self-efficacy. Including health self-efficacy, has been linked to health promoting behaviors and positive health outcomes[47,48] as well as resiliency, stress perception, and life satisfaction.[48,49] This relationship has sometimes been termed anticipated support, i.e., the assumption that one's social network is a social safety net and will provide support when needed.[50] An individual may feel confident in choosing to have a surgery performed, such as a hip replacement, because of a supportive social network available to help during the rehabilitation process as needed. In this case, an earlier hip replacement improves physical functioning and is likely influential in the older person maintaining health and independence over the long term. A short term investment by a family member is likely to have a long term benefit to both the older person and their entire family since the older person will not only be improving and maintaining his/her health but also available to help other family members in need.

This relationship has been explored theoretically through the support-efficacy model.[47] The model proposes that the belief of the support provider in the individual's abilities and the consequent support they provide increases the individual's self-efficacy. However, both perspectives are dependent on how the individual attributes the support they are given. The individual's self-efficacy may be undermined if the support is unwanted, if s/he feels that too much support is being provided or that it is insincere.[47,50,51] Expectations about and reactions to support are very much influenced by the individual's convoy of social relations. This concept, described below, provides a useful

framework for understanding the antecedent and consequent circumstances associated with social relations. The family can be an especially affective convoy through which support is provided and received.

CONVOYS OF SOCIAL RELATIONS: FAMILY, FRIENDS AND OTHERS

To understand the circumstances, especially the life span and life course circumstances, which influence how social relations influence health and well being, Kahn and Antonucci[52] proposed the convoy model of social relations.[27,53] The term, adapted from the anthropologist David Plath,[54] is meant to convey the influence of self and circumstances on what people want, need, and expect in their social relations as well as to describe what their supportive exchanges are like, how they are evaluated and ultimately, how they influence health. Much as in the military sense, a convoy should help individuals safely navigate the challenges they face.

Convoys move through life with the individual to protect and defend, socialize and optimize their development. Convoys evolve from personal characteristics such as age, gender, race, religion and education, as these characteristics influence who the person is while encompassing their individual life span development. These characteristics influence the individual's support needs and expectations. Similarly, convoys also evolve from the situational characteristics within which the individual lives. These refer to the life course organizational characteristics described above, i.e., the group or groups to which the individual belongs and the role demands and expectations of those groups. These characteristics, both personal and situational, influence the individual's current health as well as their likely health trajectories. Here, we believe examining the life span individual characteristics of any infant, child or aging adult (and their other personal characteristics) in the context of a specific life course situational characteristic, the family, will provide important insights about how the family can, and often does, maximize the individual's health.

Families are important because they provide for the physical and psychological needs of their members. Under ideal circumstances, the family is an important resource for its members. Unfortunately, there are some circumstances when the family is not a protective but rather a risk factor. Under these circumstances, the family can make the individual more vulnerable to health risks. To ascertain the degree to which the family is a resource or risk factor, the convoy model suggests an examination of the structure of the individual's support network, the supports exchanged, and

an evaluation of the support provided. Distinct definitions are available for each concept.[27]

The support network refers to the actual objective characteristics of network members, for example, the size of the network, the gender, age and relation of each network member to the individual. Other structural characteristics include proximity and contact frequency. Each of these support characteristics can have an important influence on whether and how the convoy affects the health of its members.

In the assessment of support one must consider what was actually exchanged, given, and received. Common types of support include instrumental or tangible aid, emotional support including love and affection, as well as affirmational support, which describes affirming communications to the individual about their attitudes, values, and beliefs. The provision of support can have a direct effect on the health of its members. For example, instrumental support may help the individual maintain or regain their health by providing healthy meals or refilling needed prescriptions. Emotional support can make an individual feel loved and thus motivate health enhancing behaviors. Similarly, affirmational support can simply affirm the individual's values, e.g., of the importance of engaging in preventive or rehabilitative health behaviors. Finally, because individuals are psychological beings it is important to consider how the recipient feels about receiving the support. The same objective exchange may be evaluated differently. In one case support may be gratefully received whereas in other cases it may be seen as unnecessary and demeaning. These diverse support assessments are likely to result in very different health outcomes.

The family is a primary and substantial representation of an individual's convoy of social relations and provides a useful framework for understanding how and why families influence health. As individuals age and face increased health challenges their family is likely to influence their ability to successfully cope with the challenges they face at every stage on the health continuum from minor problems to life threatening illnesses. Next, we consider five life course epidemiology models and the empirical evidence documenting both short and long term influences on health and well-being.

LIFE COURSE EPIDEMIOLOGY MODELS

Family, particularly in the US, is the nuclear unit within which most children are raised and most adults live. It provides the immediate and longitudinally influential environment for its members from childhood through old age. Epidemiologists have identified five models that describe

life course health trajectories.[55] We detail these below since they provide a helpful framework for understanding how families influence the health of their members.

The *immediate effects model* describes the immediate etiological effect of health risks. Thus, the individual is exposed to a risk and the outcome is immediate. Interestingly, these risks can occur at any point in the life span, i.e., from childhood through adulthood and old age. The individual exposed to a dangerous or risky situation (e.g., a burning building) evidences immediate effects or vulnerability. However, once removed from the dangerous situation, (e.g., removed from the burning building) the risk is no longer present. For example, studies have found that family support is related to better self-management of chronic illnesses[56] such as diabetes.[57] Family contact also decreases individuals' vulnerability to loneliness.[58] What is interesting about this model is that the risk, while immediate, can occur across the life span, thus resulting in equal vulnerability for children and adults. Clearly the family's influence on this type of exposure is significant even as primary relationships with the family change with age or over time.

A second life course epidemiology model is described as the *social trajectory model*. In this case earlier exposure influences and increases the probability of later exposures; sometimes called a "sticky" trajectory. The social trajectory model refers to less direct associations than those identified in the immediate effect model discussed above in that early exposure does not necessarily lead to immediate harm but does so at a later date. Children who live in poor neighborhoods are more likely to go to inadequate schools reducing the likelihood of future college education. The impoverished family might provide poorer nutrition, fewer educational opportunities and less (if any) preventive or acute healthcare for its members. The effects of these will be evident later with poorer health, less income and fewer employment opportunities throughout adulthood. Early exposure does not directly predict the later outcomes but puts the individual at greater risk of developing a negative outcome. Research suggests that individual's exposure to unhealthy behaviors in the family, such as substance use, may influence later life health. Children are influenced by the norms, behaviors and values to which their families adhere. Children of alcoholics tend to have an increased risk of becoming alcoholics themselves or developing other risky, especially addictive behaviors.[59,60] These behaviors will increase the probability that they will develop related diseases as they age.

Epidemiologists have described critical periods in certain trajectories wherein positive trajectories can be established and negative trajectories can be ameliorated or reversed. Children's health behaviors are strongly influenced by their parents until early adulthood when children spend more time with

their peers.[61] Marriage and parenthood increase positive health behaviors and reduce negative risky behaviors. Other critical transitions include widowhood and divorce. Fortunately, interrupting exposure to negative (or positive) earlier influences can change the trajectory and ultimately health consequences.

A third model is known as the *cumulative biological model*. Unlike the social trajectory model which influences the social trajectory or path an individual is likely to take, the cumulative biological model emphasizes the accumulating biological risk over time. In this case, an earlier risk results in physiological damage or harm, which in turn increases the individual's vulnerability to illness at a later point in time. The exposure during each period accumulates and increases the potential of accumulating negative outcomes. For example, the effects of environmental toxins may accumulate over time thus resulting in increased physiological damage over time. Exposure to some environmental toxins has been associated with increased incidence of cancer and cognitive impairment with the relative risk directly associated with amount of exposure over time. The effect of this early and accumulating exposure will remain even if the individual is no longer exposed because the exposure has had an irreversible effect on the biological trajectory of the individual. Other examples include evidence that women experiencing menopause have changed biological characteristics, which are associated with susceptibility to cardiovascular disease, and childbirth resulting in biological changes that influence the mother's likelihood of developing cancer later in life.

A fourth model is known as the *sensitive period* or *latency model*. This refers to circumstances when exposure is particularly critical at a specific point in time or development, but not earlier or later. The effects of that exposure might not be evident until much later in life. Latency models do not assume a cumulative effect but usually cannot be reversed later in life. Examples include malnutrition during the intra-uterine period and the first three years of life, which affects physical development, and the effects are not entirely reversible. Malnutrition, fundamentally related to the family context of the developing child, is related to stunted growth, delayed motor development, lower IQ, behavior problems, decreased attention, and lower educational attainment.[62]

And finally the fifth model is known as the *physiological effects of trajectory* model. It refers not just to the existence of a trajectory, which is the case in the previous models, but to magnitude and direction of change. An illustrative case in point is the influence of socioeconomic status on health, e.g., cardiovascular disease. With regard to poverty, the degree of poverty is important as well as the pathway and direction of change, e.g.,

going from working poor to non-working very poor, as compared to the opposite or moving from childhood middle class to adolescent poverty. Clearly, the effects of these trajectories on the physiological health of the individual are likely to be quite different, even if relatively risky in each case. In a longitudinal study following Australians from their mother's first prenatal visit until the individual was 21 years old, repeated exposure to family poverty (family reported an income at or below the poverty level at multiple time points) was related to poor health on multiple levels. Individuals experiencing chronic family poverty during childhood and adolescence are more likely to exhibit significant physiological effects compared to individuals who did not experience family poverty or experienced transient family poverty.[63] The well-known association between socioeconomic status and health is an example as is the lower life expectancy of people in the low socioeconomic strata.

These five models are useful for identifying the different ways in which the family can affect the health of its members. Nevertheless, it should be noted that under real life circumstances, these models are rarely completely distinct. As Glymour, Ertel and Berkman[55] point out, the models while theoretically distinct often merge and/or exist simultaneously in real life trajectories.

IMPORTANT ISSUES AND FUTURE DIRECTIONS

The family plays a prominent role in the health of its members. Nevertheless, the family is changing and the circumstances within which families function are changing. On many dimensions the family is more vulnerable because of demographic and societal changes. Families are smaller with fewer children. Marriage is still common, in that most people do get married but the experience of marriage and childbearing is changing. Multiple marriages are increasingly common resulting in vastly differing family structures. And while childbirth rates are relatively stable in the US, the circumstances within which children are being born and raised are increasingly varied. At the same time difficult economic circumstances have lead to a reduction of public and private resources available to provide preventive and acute healthcare. Despite the numerous demographic changes, it is clear that the family will continue to play a significant role in the health of its members. And some changes can be experienced as strengths. For example, while multiple marriages may create weaker bonds between some parents and grandparents and their children and grandchildren, the presence of multiple family members creates the opportunity for poor, threatened or threatening

relationships to be replaced by new ones. Out of change and vulnerability, one can build strength and resilience.

The literature on the influence of social relations on health is illustrative and may provide guidance on how to intervene in ways to support the family. Significant scientific evidence documents the potent effect of social relations on health (e.g., cardiovascular disease, cancer, and mortality). Impressive new directions in the field suggest that social relations influence the manifestation of genetic predispositions at the genomic, molecular, and cellular levels.[64,65] Examples include the progression of Alzheimer's disease and the effectiveness of anesthesia and pain medication. The clinical and economic consequences of social relations have also been recognized. People with poor social support are more likely to seek medical care,[66] become functionally disabled[67] and be hospitalized unnecessarily[68]; all of which are associated with high human and financial costs.

The family is the primary social context of social relations and thus is a premier structure within which to provide low cost, natural occurring prevention and intervention programs. Practically speaking families are pervasive and have been shown to influence each of the life course epidemiology models described above as well as most aspects of health. Families can both encourage people to engage in preventative behaviors such as healthy diets and exercise but can also encourage maladaptive behaviors such as drinking, over eating, and smoking. The current financial crisis creates a unique situation, during which families can help or hinder the individual's ability to 'weather' a storm, prevent panic, and encourage appropriate activities/interventions.

It must be recognized, however, that the changing nature of the family, especially extended family relations, the increased life span of its members, and the variety of life course experiences, may increase the vulnerability of family members. As individual's turn to family members for support and family members strain to provide that support, there is concern that the strain will overburden its members. For example, families may feel that they want to provide care for their older members. In fact, data suggest that these feelings (to provide care to elders) are stronger among the young than the old.[69] This may have been a reasonable expectation when only one elder in a family lived to be 65 or 75 years of age but as most elders in a family increasingly live to be 85 or 95 years of age, the 'young' people who care for them are likely to be old themselves. There is danger that caring for the older generation for 20 or 30 years, will not only tax the middle generation's ability to care for their children but will also increase their health needs as they neglect their own health in deference to providing care to other family

members. Such 'free' family care will only cause increased care needs and costs of the younger generations.

For individuals to maximize their health and well-being, families need to encourage its members to take responsibility for proactively maintaining their own health, thus maximizing their health as they age. Future policy programs must carefully target the vulnerable members of the society and support those willing, but perhaps not completely able, to provide needed support to family members. Day care programs for those who need it, including both young and old, the disabled, and those with other limitations, for example, will have accumulating positive effects. They will allow care providers to maintain employment and thus income, thereby maximizing their own health and well-being and consequent ability to care for diverse family members.

The family is changing but in many ways the family remains strong. However, public policy must carefully consider policies that will complement, supplement, and protect both the older person and their families. As we learn more about how social, environmental, and behavioral factors influence health, optimizing health must be seen as a lifetime and life course issue with responsibility shared by individuals, their families and the society within which they live. At the same time, we must be careful not to blame the vulnerable members of our society and those disadvantaged by virtue of their social position or lifetime experiences. Health is a public responsibility. The family is one of our most precious naturally occurring and cost effective resources. Its role in protecting our elders must be supported and augmented. The health of our older citizens can best be protected and improved by both supporting and educating the family as the primary vehicle for maintaining the health and well-being of all members of our aging society.

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