

Living Arrangements and Health Status in Later Life: A Review of Recent Literature

Judith C. Hays, R.N., Ph.D.

Abstract The living arrangements of older persons play a key role in their use of formal and informal care, as well as in their health and well-being. Nurses engaged in primary care, discharge planning, and home care are strategically positioned to contribute to an optimal fit between older persons and their home environment. This article describes the demographic significance of late-life living arrangements and proposes a model for organizing the complex web of factors associated with household composition and late-life migration. The article then summarizes qualitative and quantitative evidence in support of the proposed model. Key areas for nursing research and strategies for applying available research are identified.

Key words: aged, community living, home environment, theoretical model, migration.

INTRODUCTION

A hallmark of expert community health nursing practice is the assessment of the "goodness of fit" between patients' needs and the resources and requirements imposed by their home environment. Nurses are positioned strategically in primary care, discharge planning, and home care to contribute to an optimal fit between older persons and their living arrangements. Household composition is a key component of the assessment of fit

and a key resource for planning. The physical and social environment of the household can inhibit or promote the primary prevention of health problems and successful management of chronic and terminal illness in later life (Hinton, 1994; Rich, Beckham, Wittenberg, Leven, Freedland, & Carney, 1995; United States Department of Health and Human Services, 1991). The urgency of promoting these goals requires that nurses have the knowledge base for understanding how living arrangements differ across patient populations and how households affect and are affected by health status. This review describes the theoretical underpinnings of research on this topic, reviews the published evidence, and identifies promising research strategies and clinical assessment domains for community health nurses.

A groundswell of aged individuals will surge through the U.S. population in the first half of the 21st century. As the Baby Boom generation matures and enters late life, the absolute number of older persons will rise exponentially, and their proportion of the population will also increase relative to younger persons. People 85 years and older, of whom there were 3.5 million in 1972, will number between 19 and 27 million by the year 2050, depending on life expectancy and net immigration projections (Hobbs & Damon, 1996). As they age, Baby Boomers, who postponed childbearing longer and had fewer children than past cohorts, will have more (also aged) siblings than children, and their adult children will be younger than those of past cohorts (Fillenbaum & Wallman, 1984; Macunovich, Easterlin, Schaeffer, & Crimmins, 1995). Thus, the kinship needs of aging Baby Boomers may outstrip the limited resources of the smaller cohorts that follow them (Santi, 1988).

Although all individuals choose living arrangements to meet their physical and social needs with the resources available to them, older persons do so under challenging

Judith C. Hays is an Associate Research Professor, Geriatric Psychiatry and Gerontological Nursing, Duke University Medical Center, and is a Senior Fellow, Center for the Study of Aging and Human Development, Duke University, Durham, North Carolina.

Address correspondence to Judith C. Hays, Box 3003 Duke University Medical Center, Durham, NC 27710. E-mail: judith.hays@duke.edu

conditions, as their physical needs escalate and their socioeconomic resources decline (Jackson, Longino, Zimmerman, & Bradsher, 1991; Longino, Jackson, Zimmerman, & Bradsher, 1991.) Of 34.1-million U.S. older persons, 95.6% live in the community. Three out of four community-dwelling older persons live in single-family homes, 20% in multiunit structures, and 6% in manufactured housing (United States Department of Housing and Urban Development, 1999a). Three quarters of all older persons own their own homes (Pynoos & Golant, 1996), although this proportion is lower among the oldest old (85+ years), minority older persons, and older persons with an annual income under \$10,000 (United States Department of Housing and Urban Development, 1999b). Approximately 8% of the older population lives in housing specially constructed for them, including retirement communities and assisted-living quarters (Pynoos & Golant, 1996).

Overall, approximately half of the older population (54%) lives with a spouse, 31% live alone, 13% live with relatives other than a spouse, and 2% live with nonrelatives (Pynoos & Golant, 1996). Household composition, however, varies in population subgroups, that is, by cohort, gender, race, population density, and social class (compare review in Hays, Fillenbaum, Gold, Shanley, & Blazer, 1995). Older households are characterized by stability. However, within this group, the young-old and minority older persons are most likely to move and to change their household composition (Angel, Angel, & Himes, 1992; Hays et al., 1995; Kochhar & Scott, 1997; Richards, White, & Tsui, 1987; Wilmoth, 1998; Worobey & Angel, 1990b). The oldest old endure the most instability, if all types of transitions are counted (Wilmoth, 1998).

The need for formal health care services (particularly community-based care) for individuals 65 years and older will increase at a rapid rate (Weiner & Illston, 1996). By 1987, over one third of total health expenditures were spent on older persons, even though the aged comprised only 12% of the population; health care consumption by people aged 85 and older was 2.5 times that of people aged 65 to 69 (Waldo, Sonnefeld, McKusick, & Arnett, 1989). By 1992, 30% of Medicaid expenditures and 88% of Medicare expenditures were for the older persons, reaching \$240 billion by 1998 (Coughlin, Ku, & Holahan, 1994; United States Department of Health and Human Services, 1999). In that year alone, U.S. hospitals discharged 12-million Medicare patients, the vast majority of whom returned to community residences (United States Department of Health and Human Services, 1999). Nearly twice that number received informal care at home. In 22-million U.S. households, someone provides unpaid assistance to a relative older than age 50 (National

Alliance for Caregiving and AARP, 1997). In summary, the upcoming cohorts of older persons will place an unprecedented demand on the commonwealth for shelter and assistance.

A decade ago, Parmelee and Lawton (1990) decried the lagging research effort to understand how older persons adapted their residential environments to preserve autonomy and security. What was required, they argued, was a coherent theoretical perspective that would account for (1) person-level and system-level factors; (2) proactivity (that is, "self-directed, planful behavior," p. 470) on the part of older persons; (3) social as well as psychological dimensions; and (4) differential meaning and values across cultures, social backgrounds, and cohorts. New statistical methods, capable of characterizing phenomena that are dynamic, multifactorial, covarying, and nonrecursive, were also needed. In the decade since that clarion call, the scientific community has witnessed an explosion of theoretical and empirical work on the relationship between living arrangements and health status. Thus, a reanalysis of the state of the science is timely.

METHODS

We searched peer-reviewed journals listed in Medline, CINAHL, PsychInfo, Sociological Abstracts, Healthstar, and ISI Web of Science. All searches were restricted to English-language journal articles that included abstracts and were published between 1990 and 2001, that is, since Parmelee and Lawton's (1990) review. First, we searched for articles on living arrangements using the following key words or their cognates: ([living or residential] arrangement or co-residence) or (household [size or structure or composition or change or transition]) or ([household or residential or geographic] and [stability or mobility or move or migrant or relocation]). Next, we searched for articles with explicit reference to health outcomes of interest using the following key words: (illness or recovery or health or mortality or morbidity or quality of life or outcome) or ({functional or cognitive or psychiatric} and {disability or impairment}) or dementia or activities of daily living) or (social [support or interaction or network] or [informal or formal] care or life events).

Articles that overlapped these two groups were restricted to those that included aging-related key words: elders or aging or old age or late life or geriatric or gerontology. To these articles were added the results of a fourth search on place attachment. In all, 1154 abstracts survived the search strategy and were examined. The author read the full texts of relevant articles, noting the theoretical perspective and the findings. Both theory-development and theory-testing studies are reviewed later here.

RESULTS

Theory Development on Late-Life Living Arrangements

The interpretive sociologies rooted in Marx and his successors have generated an important body of research that focuses on the individual's agency and construction of meaning with respect to living arrangements (Marshall, 1999). Grounded theory work has focused on the meaning of residential relocations and international migration (Armer, 1996; Forbes, Hoffart, & Redford, 1997; Kane, Reinardy, Penrod, & Huck, 1999; Reed, Payton, & Bond, 1998; Schneider & Sar, 1998; Young, 1998) and on older persons' preferences for future living arrangements (Kim & Rhee, 1999; Kojima, Sagaza, Otake, Hayashi, Tanada, & Sakagami, 1999; Kontos, 1998; Mack, Salmoni, Viverais-Dressler, Porter, & Garg, 1997; Porter, 1998; Wackerbarth, 1999). Recent qualitative studies have also mined the rich ore of place attachment theory (Altman & Low, 1992; Rowles, 1983). Hay (1998) explored a sense of place among New Zealanders (Hay, 1998), and colleagues have studied attachment to local Israeli communities (Mesch & Manor, 1998), to all-Black towns in Oklahoma (McAuley, 1998), and to continuing care retirement communities (Sugihara & Evans, 2000). Cookman (1996) and Cutchin (2001) further specified the domains of place attachment.

The three theory families that have enjoyed the most extensive empirical testing with respect to living arrangements are migration theory, environmental press, and health behaviors.¹ Modern migration theory emerged from the discipline of demography in the mid-1960s, when Lee (1966), following work by Ravenstein (1889), proposed that attracting and repelling forces act to determine one's current residence and any potential migration destination. These forces and their interactions with personal factors and obstacles to change are the key determinants of late-life mobility patterns. More than a decade later, Wiseman (1980) and Litwak and Longino (1987) proposed that the late-life course involved a prototypical three-migration trajectory: (1) a postretirement out-migration in search

of an amenity-rich lifestyle, (2) a return migration associated with increased frailty or impaired health status, and (3) institutionalization for long-term care. Researchers have continued to debate the component parts of migration decisions (Cuba & Longino, 1991; Haas & Serow, 1993).

A second, chronologically parallel discourse has focused on how older persons evaluated and adjusted the "goodness of fit" between themselves and their environment to maximize their overall competence (Coward, Netzer, & Mullens, 1996b; Lawton, 1982; Speare, 1974). Competence in fitting environmental resources to basic health needs, such as managing personal activities of daily living, is necessary before older persons can focus on higher order needs, such as the need for affiliation and social support, privacy, and aesthetically pleasing surroundings. Key constructs were organized into stress-threshold and residential-satisfaction models of mobility that proposed how positive and negative environmental forces interacted with individual competence to affect changes in living arrangements.

A third group of studies focused on how living arrangements affected health resource utilization. Based on the classic health behavior model (Andersen, 1968; Wolinsky, 1990), these studies described the antecedent needs, resources, and predisposing factors that predicted use of formal services, including home-based care and transfers to nursing homes.

In order to organize the summary of empirical research on living arrangements and health, the author used a model of older person migration adapted from Wiseman (1980) and Haas and Serow (1993). The model focuses on potential movers, their motivation, characteristics, and behavioral outcomes. As presented in Figure 1, the model suggests that life events or changing circumstances in late life trigger a re-evaluation of whether one's living arrangements are satisfactory. These triggers may be either "push factors," that is, events that loosen the ties to the current residence and compel one to consider leaving or changing it, or "pull factors," that is, events that operate from the potential destination to draw the older person toward a change. For example, a fall on steep stairs is a push factor that could trigger consideration of moving to a single-story dwelling. On the other hand, falling housing prices might be a pull factor that would make moving to a condominium more financially attractive than when prices were higher.

Also operating to facilitate or to inhibit changes in living arrangements are contextual factors. Contextual factors are more stable than triggering events and may be either personal (endogenous) or environmental (exogenous) in nature. As a result of the evaluation process, an older person may consider household changes in situ or

¹Other theories that have received attention with respect to late-life living arrangements include theories of motivation (De Jong et al., 1995) and reasoned action and planned behaviors (Lu, 1998; Mutchler, 1992; Soldo et al., 1990; Spitze et al., 1992), social learning and cognitive theories (Goldscheider & Lawton, 1998), exchange theory (Call et al., 1999), role theory (Rogers, 1996; Choi, 1995), family theory (Freedman, 1996), theories of primary group structure and function (Tennstedt et al., 1993), structural constraints theory (Greenwell & Bengtson, 1997), crisis theory (Oleson & Shadick, 1993), and economic theories (Clark & Knapp, 1996; Kan, 1999; Waehrer & Crystal, 1995).

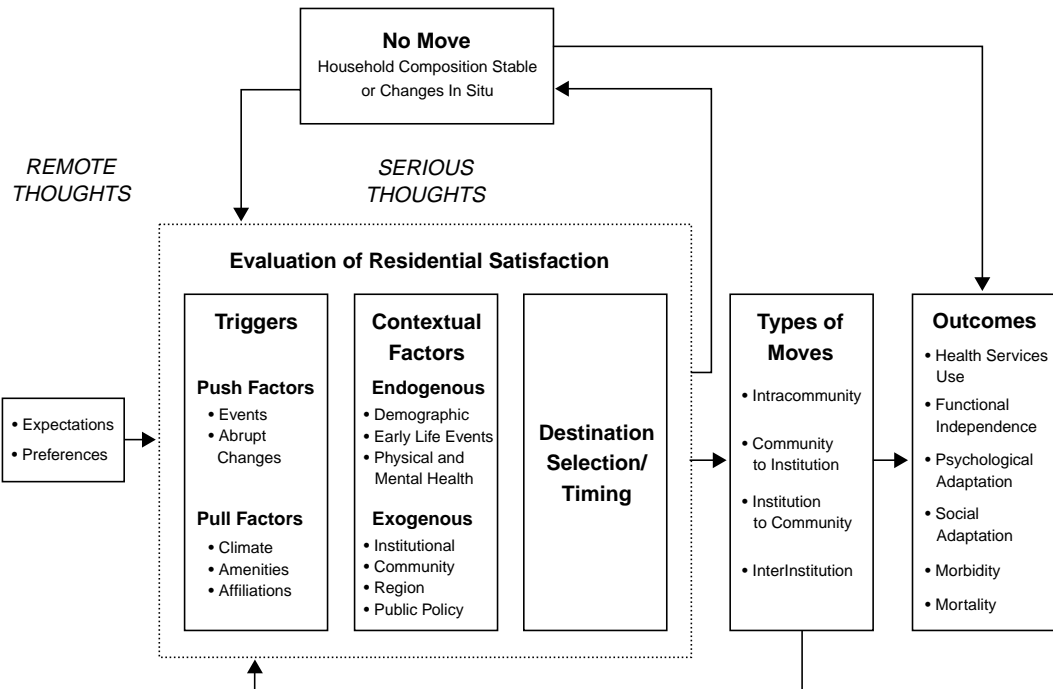


Figure 1. A theoretical model of the antecedents and sequelae of living arrangements in late life (adapted from Wiseman (1980) and Haas and Serow (1993)).

moving. Considerations of change and planning for change do not necessarily result in actual change.

The proposed model is predicated on a number of assumptions. First, remote thoughts about a possible future change may occur long prior to any serious consideration of changing, and the chronology of decisional components (e.g., whether or when to change and where or with whom to live) is variable. Second, evaluation of residential suitability is continuous, and multiple changes are possible. Third, any outcome may or may not be voluntary. Fourth, change and stability each have important health-related sequelae.

In the next section, we consider the evidence for each part of this model, with a particular focus on household living arrangements. Much of the evidence on remote thoughts, triggers, and contextual factors for household change is related to the health status of the older subjects, and these are highlighted later here. One last consideration remains before assessing the empirical evidence, and that is to consider the usual metric for living arrangements.

Measuring Living Arrangements

Cross-Sectional Studies

Cross-sectional studies provide a snapshot of living arrangements at a particular moment, comparable to the information available to a nurse at any initial

assessment. In cross-sectional analyses, several metrics for household composition have been used, including living alone versus not living alone (Davis, Moritz, Neuhaus, & Barclay, 1996; Desai, Lentzner, & Weeks, 2001; Ebly, Hogan, & Rockwood, 1999), the total number of household members (Kochhar & Scott, 1997), and a typology of intergenerational co-residents (Blank & Torrecilha, 1998; Choi, 1996b, 1999; Mutchler, 1990; Schmertmann, Boyd, Serow, & White, 2000; Waite & Hughes, 1999). Cross-sectional studies have also measured the distance between older persons' households and those of adult offspring (Greenwell & Bengtson, 1997) and the use of formal versus informal in-home support (Katz, Kabeto, & Langa, 2000; Wallace, Levy-Storms, Kington, & Andersen, 1998).

Longitudinal Studies

Changes in household composition in situ are relatively rare (Hayes & Al-Hamad, 1997; Jackson et al., 1991; Lichtenberg, MacNeill, & Mast, 2000; Mutchler & Burr, 1991; Pendry, Barrett, & Victor, 1999). Exceptions include several studies of incident intergenerational co-residence (Al-Hamad, Flowerdew, & Hayes, 1997; Mickus, Stommel, & Given, 1997; Roan & Raley, 1996; Speare, Avery, & Lawton, 1991; Worobey & Angel, 1990a), and life years of co-residence (Schoeni, 1998). Although the unit of observation in studies of changing living arrangements is usually the older individual, some

studies observe households making changes as a unit (Clark & Knapp, 1996; De Jong, Warland, & Root, 1998; Lin, 1997; Lu, 1998; Robison & Moen, 2000).

A key risk factor for institutionalization is the antecedent household composition. An extremely large amount of literature focuses on household composition as a predictor of migration from community-based living arrangements into long-term care institutional settings (Breeze, Sloggett, & Fletcher, 1999; Burholt, 1999; Coward et al., 1996b; Dwyer, Barton, & Vogel, 1994; Egleston, Rudberg, & Brody, 1999; Espejo, Goudie, & Turpin, 1999; Freedman, 1996; Kelly, Knox, & Gekoski, 1998; McAuley & Usita, 1998; Roy, FitzGibbon, & Haug, 1996; Steinbach, 1992; Wolinsky, Callahan, Fitzgerald, & Johnson, 1992). In this study, we focus primarily on intracommunity household changes and only secondarily on exits from the community into institutionally based living arrangements.

Empirical Evidence on Late-Life Living Arrangements

Remote Thoughts

Research shows that the early life course strongly influences decision making about late-life living arrangements. Childhood co-residence with grandparents (Goldscheider & Lawton, 1998) and midlife familial interaction (Singh, Williams, & Singh, 1998) are strongly related to a willingness to undertake intergenerational co-residence. Midlife experience of providing informal care to family members or formal health care to nonrelatives affects one's preferences about living arrangements (Hays, Gold, Flint, & Winer, 1999). In general, early and midlife social history shapes attachment to and sense of place, which are critical factors in decision making about late-life living arrangements and adjustment to residential change (Findlay & Li, 1999; McAuley, 1998; Reed et al., 1998).

Older persons also anticipate late-life cycle events and formulate remote plans for adapting their living arrangements to those events. Many studies have examined anticipation of retirement and subsequent migration (a classic one being Cuba & Longino, 1991). Expectations of moving certainly increase the likelihood of moving (De Jong et al., 1998). However, at least with respect to mobility plans, expectations are often sabotaged by unanticipated events (Kan, 1999).

Triggers

Push and pull factors have powerful effects on living arrangements, and these vary across the life course. The most potent push factors include the death of a spouse and abrupt changes in income or employment, usually retirement. Health-related events, such as recent hospitalization, short-term nursing home admissions, or a sharp increase in outpatient visits, influence housing choices

(Al-Hamad et al., 1997; Chevan, 1995; Choi, 1996c; Colsher & Wallace, 1990; Cuba & Longino, 1991; Davis et al., 1996; De Jong, Wilmoth, Angel, & Cornwell, 1995; Forbes et al., 1997; Kan, 1999; Mickus et al., 1997; Mutchler, 1992; Mutchler & Burr, 1991; Roan & Raley, 1996; Robison & Moen, 2000; Silverstein, 1995; Spitze, Logan, & Robinson, 1992; Wolinsky et al., 1992). Recent changes in functional status also serve to destabilize households (Al-Hamad et al., 1997; Anderson, James, Miller, Worley, & Longino, 1998; Angel et al., 1992; Bradsher, Longino, Jackson, & Zimmerman, 1992; Choi, 1996c; De Jong et al., 1995; Jackson et al., 1991; Longino et al., 1991; Miller, Longino, Anderson, James, & Worley, 1999; Silverstein, 1995; Speare et al., 1991; Spitze et al., 1992; Worobey & Angel, 1990a).

There is less evidence to conclude that other health changes destabilize households. For example, little is known of the impact on living arrangements of specific incident disease or changes in mental health or cognitive status (Bannister, Ballard, Lana, Fairbairn, & Wilcock, 1998; Miller et al., 1999; Pendry et al., 1999). A small amount of literature suggests that sequential triggering events can have multiplicative effects (Bradsher et al., 1992; Breeze et al., 1999) and that a single triggering event such as a hospitalization can have persistent effects on living arrangements over time (Kane et al., 1999).

Pull factors have received less attention than push factors, with respect to household composition. As health needs arise and adult children become involved in providing more support, an older person may be pulled nearer to or into co-residence with that child (Mickus et al., 1997). Close ties to a previous homestead (that is, multiple visits "back home," especially when siblings or children live there) pull transplanted retirees toward return migration (Stoller & Longino, 2001). Institutional pull factors, such as attractive characteristics of continuing care retirement communities, pull older persons to relocate the household to a specific facility (Hays, Galanos, Palmer, McQuoid, & Flint, in press).

Contextual Factors

Contextual factors are those background circumstances that predispose older persons to stabilize or change their living arrangements. We organize our summary of personal contextual factors using a life course perspective: demographic factors, including gender, race, and cohort; early life events and achievements and mid- and late-life circumstances. Afterward, we address contextual factors in the larger environment.

Demographic factors, especially gender, race, and cohort, are powerful influences on late-life living arrangements. Not surprisingly, older men are most likely to live with a spouse, whereas older women live alone or with

nonspouse others. Clearly, these effects are confounded by the longer life span and higher prevalence of functional limitations among women (Katz et al. 2000; Pynoos & Golant, 1996; United States Department of Health and Human Services, 1999). New evidence continues to suggest that age and gender differences shape the effects of triggering events or other contextual factors on living arrangements (Katz et al. 2000; Robison & Moen, 2000; Schmertmann et al., 2000).

African American older persons are more likely to live in extended family households, use fewer formal home care or nursing home services, experience more overall residential instability, and respond differently to trigger events than White older persons, regardless of their marital status, income, or functional ability (Angel & Hogan, 1991; Angel et al., 1992; Cagney & Agree, 1999; Chevan, 1995; Choi, 1995, 1999; Davis et al., 1996; Hays et al., 1995; Mutchler, 1990; Pynoos & Golant, 1996; Richards et al., 1987; Roan & Raley, 1996; Singh et al., 1998; Speare & Avery, 1993; Soldo, Wolf, & Agree, 1990; Suzman, Willis, & Manton, 1992; Wallace et al., 1998; Wolf, 1984; Wolinsky et al., 1992; Worobey & Angel, 1990b). These differences are particularly marked among women (Coward, Lee, Netzer, Cutler, & Danigelis, 1996a). Among U.S. minority groups, African American older persons are more likely than Hispanic older persons to head households with grandchildren and less likely to live as dependents in others' households, unless in poor health (Choi, 1999). Within the Asian American community, significant differences in living arrangements are associated with birthplace and acculturation (Burr & Mutchler, 1993). Some authors impute racial differences to cross-generation altruism and norms about co-residential living not found in the majority culture (Logan & Spitze, 1995; Mutran, 1985; Ruggles, 1994). Nonsignificant findings of interracial and intraethnic differences have been reported as well (Blank & Torrecilha, 1998; Coward et al., 1996a; Kritz, Gurak, & Chen, 2000; Tennstedt, Crawford, & Mckinlay, 1993).

Cohort studies of household size during the 20th century show that older persons are increasingly likely to live alone, at least in developed countries (Glaser & Grundy, 1998; Glaser, Murphy, & Grundy, 1997; Kim & Rhee, 2000; Koh & Bell, 1987; Schoeni, 1998; Weinick, 1995). This change may reflect a primary shift in cultural values, that is, less value placed on communality and generational interdependence and more value placed on privacy and independence, according to Kramarow (1995).

Early life course events and achievements have long-term consequences on late-life living arrangements and mobility. The number of living siblings, parity, and offspring gender affect household composition and

migration (Al-Hamad et al., 1997; Angel et al., 1992; Cagney & Agree, 1999; Choi, 1996a; Davis et al., 1996; De Jong et al., 1995; Espejo et al., 1999; Mickus et al., 1997; Mutchler, 1990; Schoeni, 1998; Silverstein, 1995; Sommers & Rowell, 1992; Speare et al., 1991; Spitze et al., 1992). Other historical factors, such as lower educational achievement, shorter residential tenure, and not being a home owner are related to more intergenerational co-residence (Bradsher et al., 1992; Chevan, 1995; Choi, 1996c; De Jong et al., 1995; Lu, 1998; Mui & Burnette, 1994; Sommers & Rowell, 1992; Speare et al., 1991; Speare & Avery, 1993; Spitze et al., 1992).

Financial resources appear to have a varying impact on household stability (Chevan, 1995; Lu, 1998) and co-residential living (Mutchler, 1990, 1992; Mui & Burnette, 1994; Speare & Avery, 1993). Urban-rural differences in living arrangements are also complex and suggest interactions with race, marital status, and functional ability (Coward, Cutler, & Schmidt, 1989; Freedman, 1996; Hays et al., 1995; Logan & Spitze, 1995; Peek, Coward, Lee, & Zsembik, 1997a; Peek, Henretta, Coward, Duncan, & Dougherty, 1997b; Worobey & Angel, 1990b).

Chronic health conditions in late life serve as contextual factors that have shown inconsistent relationships to stability of late-life living arrangements. Some studies suggest that chronic conditions facilitate intergenerational co-residence (Al-Hamad et al., 1997; Mui & Burnette, 1994), although other studies find little evidence for this (Davis et al., 1996; Ebly et al., 1999; Illiffe et al., 1992). In one study of living arrangements posthospitalization, comorbid chronic conditions, impaired activities of daily living, and cognitive impairment mediated against older persons' returning to homes in which they resided alone (Lichtenberg et al., 2000). However, cognitive impairment has not been shown to be uniformly antithetical to living alone across studies (Illiffe et al., 1992; Mui & Burnette, 1994; Speare et al., 1991). Furthermore, older persons with chronic conditions are not necessarily only care receivers in larger households. There is some evidence that chronically ill older persons manage not only their own illnesses, but also those of other household residents (Glaser et al., 1997; Hays & Clipp, 2000).

The older person's mental health and subjective world have been linked reciprocally to living arrangements. Mui and Burnette (1994) reported better subjective ratings of overall health among older persons living alone, compared with those living with others; however, they also reported higher rates of depressed mood, loneliness, poor morale, and low subjective social support among those living alone. Less likely to resume living alone posthospitalization were older persons who reported high levels of depression during hospitalization (Lichtenberg et al., 2000).

Up to this point, we have been focusing on how personal factors impact living arrangements. The impact of ecologic factors has been of considerable concern to public health nurses since Florence Nightingale. Unfortunately, the influence of the community environment on decisions about living arrangements is less often studied than the influence of personal factors. We found no studies of the impact of neighborhood characteristics (e.g., noise, crime, traffic, or litter) or of public policy shifts on changes in late life household composition.

Health and Psychosocial Outcomes of Living Arrangements

As health care delivery systems export primary, secondary, and tertiary prevention to community settings, living arrangements will increasingly have an impact on patient outcomes, whether those patients are recovering from an acute illness episode, seeking to avoid or manage chronic illness, or dying (Maddox, Steinhauser, & Bolda, 1996; United States Department of Health and Human Services, 1991). Most of the empirical research on outcomes of living arrangements is cross-sectional, making conclusions about cause and effect difficult (Coward, Peek, Henretta, Duncan, Dougherty, & Gilbert, 1997). These research findings are described later here.

Formal Health Services

Formal health services are generally paid and include professional nursing care, as well as personal care and housekeeping services. In general, there is a higher use of home-based health care and supportive services such as meals on wheels among older persons living alone than among older persons living with others (Bowling, Farquhar, & Browne, 1991; Frederiks, te Wierik, van Rossum, Visser, Volovics, & Sturmans, 1992; Iliffe et al., 1992; Miller et al., 1996; Tennstedt, Chang, & Delgado, 1998; Wister, 1992). Outpatient psychiatric crisis intervention services were also used more often by rural older persons living alone than those living with others (Neese, Abraham, & Buckwalter, 1999). Nevertheless, there are dissenting voices. Mui and Burnette (1994) reported less use of home-based health care (but more outpatient visits and hospital days) among older persons living alone, and Tennstedt et al. (1993) reported no difference between the two groups.

We found only one recent study of type of housing and formal home-based care. Older persons in housing for the elderly were 3.5 times more likely to use formal care services than were older persons living in other types of community housing (Houde, 1998).

In most studies, living alone, especially with functional limitations, increased the risk of institutionalization

(Anderson et al., 1998; Breeze et al., 1999; Ebly et al., 1999; Egleston et al., 1999; Mor & Hiris, 1983; Speare et al., 1991; Steinbach, 1992; Wolinsky et al., 1992). However, the evidence of increased risk for those living alone was not consistent (Dwyer et al., 1994; Pritchard et al., 1998).

Informal Care

Informal care is generally unpaid and is provided by family or in some cases friends or neighbors. Three recent studies concluded that household composition was more salient than marital status to the amount of informal support received by older persons (Chappell, 1991; Peek, Coward, & Peek, 2000; Tennstedt et al., 1993). Other authors dispute these findings, arguing that both gender and marital status are critical predictors of receiving informal care, more so than household composition. For example, in a study of disabled community-dwelling older persons, Katz et al. (2000) found that women received fewer hours of informal care than men, regardless of whether they lived alone, with a spouse, or with nonspouse others. Espejo et al. (1999) found that being married rather than household composition was the key to whether posthospitalization discharge was back to the community.

Whether the relationship between coresident caregiver and care receiver makes a difference in the amount or burden of care was examined in two recent articles. Comparing the amount of care provided by biological children and children-in-law, Peters-Davis, Moss, and Pruchno (1999) found no difference. However, comparing close family, such as spouses and children, to caregivers who are extended family members or nonfamily, Call, Finch, Huck, and Kane (1999) found less closely related caregivers experienced significantly more subjective burden.

Personal Health and Well-Being

A number of studies have examined the risk to health and well-being among older persons in specific living arrangements, but the results are complex. Living alone has been associated with significant unmet needs for personal assistance, including being unable to eat when hungry, in one study of noninstitutionalized older persons (Desai et al., 2001). However, in a similar sample, medication compliance was no different among those who lived alone versus with others (Coons, Sheahan, Martin, Hendricks, Robbins, & Johnson, 1994). Other work stresses that the benefits of moving closer to or into the same residence with others included improved medical quality of life, mood, and social support for the older person (Dean, Kolody, Wood, & Matt, 1992; De Jong, Gierveld, & Van Tilburg, 1999; Smith, 1998; Yohannes, Roomi, Waters, & Connolly, 1998).

In longitudinal studies, living alone has shown mixed effects. For example, women who live alone appear to be protected against functional declines (Anderson et al., 1998; Sarwari, Fredman, Langenberg, & Magaziner, 1998) and to enjoy better mental health and vitality over time than women living with a husband, thanks largely to more social engagement (Michael, Berkman, Colditz, & Kawachi, 2001). However, women living alone are also at increasing risk of poverty (Hardy & Hazelrigg, 1993; Waehrer & Crystal, 1995).

Living with nonspouse others conferred excess mortality risk according to a number of studies where demographic, health, and social support factors were controlled (Angel et al., 1992; Davis, Mortiz, Neuhaus, Barclay, & Gee, 1997; Rogers, 1996; Roy et al., 1996; Turner-Musa, Leidner, Simmens, Reiss, Kimmel, & Holder, 1999; Wolinsky et al., 1992). In these studies, mortality risk may be underadjusted for the older persons' poor health, however, particularly cognitive impairment.

Three recent studies examined the stress response to relocation. In one study, the interleukin-6 stress-related hormone levels were not significantly elevated among older women who were anticipating a voluntary relocation compared with older control subjects (Lutgendorf, Garand, Buckwalter, Reimer, Hong, & Lubaroff, 1999a). However, natural killer cell activity was decreased among those who were anticipating a move and also felt less sense of coherence and more depressed mood (Lutgendorf, Vitaliano, Tripp-Reimer, Harvey, & Lubaroff, 1999b). Relocation posed less of a challenge to coping behaviors or to one's overall well-being than did long-term caregiving for a chronically ill family member (Kling, Seltzer, & Ryff, 1997).

CONCLUSIONS

Implications for Research

Public health and home care nurses have a significant strategic advantage with respect to theory development and hypothesis testing. The advantage derives from their training and practice in viewing neighborhoods, households, and families as their units of care, as well as in developing and evaluating care plans over months and years. Consequently, they may be particularly well suited to address the research agenda described later here.

Trajectories of Household Changes

The considerable literature describing the antecedents and sequelae of changes in living arrangements has focused on single, short-term changes in living arrangements, leaving students of late life with only crude notions of the diversity of change and stability over time, and no

baseline against which to describe cohort differences among the already more mobile Baby Boom generation. Mobility and household instability may fray social networks and informal support systems, disrupt continuity of formal health services, and present new challenges (as well as new benefits) to maintaining physical and mental health. To understand how these factors change over time, one needs detailed repeated measures of household composition and a wide range of time-varying covariates. An alternative to the daunting task of modeling such repeated measures statistically would be to develop a typology of household changes over time. For example, households with an older person might remain the same size (stable), increase, decrease, or fluctuate over given period. Developing such a typology has proven useful in studies of personal lifetime histories of employment, of religiousness, and of illness trajectories (Clipp, Pavalko, & Elder, 1992; Elder, Shanahan, & Clipp, 1994; George, Hays, & Meador, 1999). Although typologies can be crude and unsatisfactory in quantitative analyses, they could be used to augment our understanding of traditional longitudinal models that represent group patterns but ignore individual variability and heterogeneity.

Place Attachment

Humans become attached to places through narrative and symbol (Altman & Low, 1992; Low & Altman, 1992) for a review of the place attachment literature in geography and other disciplines). In other words, the particular life story of an individual—in combination with the accumulated symbols related to that story—creates linkages that tie an individual to a place. In late life, a stable relationship to a place enhances continuity, a strong self-image, independence, and feelings of competence (Rubinstein & Parmelee, 1992). These attributes are critical components of a robust quality of life, what Lawton (1983) called “the good life,” and to successful aging (Rowe & Kahn, 1998). Place attachment also provides comfort and security by anchoring older persons inside their physical, autobiographical, and social worlds (Rowles, 1983). However, the role of place attachment in older persons' decision making about how to fit their living arrangements to their health needs plays a largely unspecified role.

Other Stressful Life Events

Retirement and the death of a spouse (and, to a lesser extent, hospitalization) have received considerable attention as triggers of the decision to change living arrangements. Other life events have received very little attention. These include incident chronic disease; extended subclinical illness or injury; serious illness, injury, or death of one or more children, close family members, or friends; legal problems; natural disaster; or financial problems of the

immediate or extended family. To the degree that summary measures of stressful life events are robust predictors of residential change, their constituent events should be examined. Are health-related events more disruptive to household stability than those unrelated to health status? Are some health-related events more disruptive than others? Are the cumulative or interactive effects of health-related and other types of events acting as the destabilizing force?

Chronic conditions and kin evaluations are contextual factors that may play key facilitating roles with respect to late-life residential instability but have not received adequate attention (Lawton, Weisman, Sloane, & Calkins, 1997). A few studies, using primarily summary measures of chronic medical conditions, suggest that they interact with household composition to predict residential instability, depression, and mortality (Al-Hamad et al., 1997; Davis et al., 1996; Dean et al., 1992; Iliffe et al., 1992; Lichtenberg et al., 2000; Pendry et al., 1999; Speare et al., 1991). Specific chronic conditions may preclude living alone (Mui et al., 1994). We know of no research on the impact of such prevalent chronic conditions as chronic sleep problems, visual or hearing deficits, chronic depressive symptoms, or comorbidity on living arrangements.

Kin evaluations of older persons' living arrangements have been featured in qualitative studies of reasons for moving (Young, 1998). More research in this area would be useful for determining whether kin evaluations of older persons' living arrangements are normative predictors of the decision to relocate or of successful adaptation to migration. With respect to health status, are some chronic conditions more likely than others to engender negative evaluations of an older person's living arrangements by either local or distant kin?

Ethnic and Racial Differences

The intriguing findings about subgroup differences in choice of co-residents and response to triggers beg for follow-up studies (Coward et al., 1996a; Hays et al., 1995; Speare & Avery, 1993). Given the proclivity of minority older persons to co-reside with others (Hays et al., 1995), it would be useful to describe the ages and relationships of co-residents in minority households, the extent and direction of informal care involved in intergenerational co-residence, and the differential precipitants of changes in living arrangements among minority older persons.

Social Support and Health Behaviors Outcomes

The social and behavioral consequences of changes in living arrangements, with the exception of instrumental support received, require additional attention. How are other dimensions of social support (e.g., social interactions, instrumental support given, or the availability of a

confidant) affected by household composition and changes in it? The impact of living arrangements and migration on health behaviors such as exercise and nutritional intake, and on sensory stimulation, are also unknown.

Implications for Nursing Practice

It is the overall goal of this review to contribute to knowledge-driven research utilization by community health nurses. Compared with decision-driven research use, which identifies a clinical problem, musters the available research, and develops and tests a new protocol, knowledge-driven research use serves a more general purpose (Caplan, 1979). As nurses expose themselves to new or updated research related to their clinical practice, they may see old problems in a new light. They may identify an untested hypothesis based on new findings from the literature. They may find their current standards of care supported and redouble efforts to practice and teach according to them. Weiss (1980) referred to this beneficial process as "knowledge creep" (Table 1).

There are at least three reasons why professional nurses should expand their general knowledge base about research on living arrangements and health. First, there is ample evidence that illness events and rapid declines in health trigger the destabilization of living arrangements. Such events and declines are precisely the circumstances under which nurses working in hospital, outpatient, and home care settings engage older patients. Hypothetically, triggering mechanisms are more amenable to intervention than are contextual factors. Therefore, depending on the type of caseload for which they have expertise, nurses should assess explicitly the degree of acute "misfit" between their patients' recovery needs and their living arrangements. An assessment of factors related to living arrangements enables strategic planning for secondary prevention of specific health problems related to the need for additional resources in the home setting.

Second, the evidence about living arrangements and health suggests that older persons bring to residential decision making a bundle of past experiences and remote thoughts about where and with whom they foresee living, under various circumstances. Such distal preferences and opinions are not necessarily considered as part of standard clinical assessments or planning. The nurse may make quite plausible but inaccurate assumptions about patient preferences and knowledge about one's options. These may serve to undermine the success individualized care plans. In a striking example of patients' lack of relevant information (Hays et al., 1999), seriously ill cancer patients who wanted to die at home did not know what services the local hospice organization provided. Proactive nursing assessment of

TABLE 1. *Strategies for Evaluating and Using Research on Living Arrangements in Nurse Practice Settings*

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1. Identify subgroups of patients who are subject to household instability or other changes in living arrangements.
 2. Identify subgroups of patients who are subject to disrupted place attachments.
 3. Identify the most prevalent stressful life events in patient subgroups and their impact on living arrangements.
 4. Assess patient's subjective evaluation of fit between health needs and the home environment.
 5. Assess patient's preferences and expectations for future living arrangements.
 6. Assess correspondence between patient and kin evaluation of fit between patients' needs and current living arrangements.
 7. Assess extent and progress of patient problem solving to increase fit.
 8. Assess household and community support for and challenges to wellness behaviors.
 9. Analyze the social and physical resources in the home and community that support independence and quality of life for individual patients, as well as needed resources when independence is compromised.
 10. Analyze the potential for negative health outcomes of a poor fit between the patient's health needs and the social and physical resources in the home and community. Can potential crises be identified and strategically avoided?
 11. Analyze the most critical feature(s) of a patient's household composition or living arrangements with respect to the patient's health needs. For example, is it critical that the patient not live alone, that the patient co-resides with several others, that co-residents demonstrate specific cognitive or functional abilities, or that the driving distance to the nearest close kin be within a certain parameter?
 12. Where resources are inadequate to specific health needs, develop plans of care for additional informational, emotional and programmatic resources regarding home improvements and healthy communities.
 13. Incorporate race and ethnic differences in preferences for household composition into plans of care.
 14. Initiate and support community action plans for increased resources to improve home-based health resources for the community.
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patients' preferences about living arrangements, under specific health circumstances, may highlight surprisingly straightforward needs for patient teaching, as well as needs for more complex problem solving. When hopes go unrealized, the failure to achieve one's preferred living arrangements may, for some patients, create a level of regret, or even grief, that seriously impairs their emotional quality of life. Nurses may be able to contribute to easing such painful disappointment by creative planning and intervention that compensate somewhat for undesirable living arrangements.

Finally, the degree to which late-life living arrangements contribute to or impede primary prevention may be underappreciated. Household composition should be routinely assessed and its contribution maximized when implementing plans for exercise, good nutrition, stress reduction, and accident prevention among nurses concerned with public health hygiene.

To the end of knowledge-driven research utilization, we provide a series of strategic questions to enable nurses across different practice settings to identify how living arrangements may be a risk factor or a protective factor for their patients (Table 1). Based on the research described previously here, nurses must evaluate their own caseloads for evidence of increased risk. The preponderance of research is observational. Intervention studies of strategies or programs to reduce risk are largely unavailable. It is hoped that by raising awareness among nurses of the complexity of assessing, conceptualizing, and studying living arrangements and health, they will be

empowered to contribute to ongoing efforts to develop the knowledge base, including strategies to maximize the quality of elders' living environments.

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