

INFORMATION TO USERS

This reproduction was made from a copy of a manuscript sent to us for publication and microfilming. While the most advanced technology has been used to photograph and reproduce this manuscript, the quality of the reproduction is heavily dependent upon the quality of the material submitted. Pages in any manuscript may have indistinct print. In all cases the best available copy has been filmed.

The following explanation of techniques is provided to help clarify notations which may appear on this reproduction.

1. Manuscripts may not always be complete. When it is not possible to obtain missing pages, a note appears to indicate this.
2. When copyrighted materials are removed from the manuscript, a note appears to indicate this.
3. Oversize materials (maps, drawings, and charts) are photographed by sectioning the original, beginning at the upper left hand corner and continuing from left to right in equal sections with small overlaps. Each oversize page is also filmed as one exposure and is available, for an additional charge, as a standard 35mm slide or in black and white paper format.*
4. Most photographs reproduce acceptably on positive microfilm or microfiche but lack clarity on xerographic copies made from the microfilm. For an additional charge, all photographs are available in black and white standard 35mm slide format.*

***For more information about black and white slides or enlarged paper reproductions, please contact the Dissertations Customer Services Department.**

U·M·I Dissertation
Information Service

University Microfilms International
A Bell & Howell Information Company
300 N. Zeeb Road, Ann Arbor, Michigan 48106

8701334

Suggs, Patricia Anne Kaylor

THE APPLICATION OF A THEORETICAL MODEL OF INTERGENERATIONAL
HELPING TO THE OLDER ADULT-SIBLING DYAD

The University of North Carolina at Greensboro

PH.D. 1985

**University
Microfilms
International** 300 N. Zeeb Road, Ann Arbor, MI 48106

THE APPLICATION OF A THEORETICAL MODEL OF
INTERGENERATIONAL HELPING TO THE
OLDER ADULT-SIBLING DYAD

by

Patricia Kaylor Suggs

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1985

Approved by

Vain R. Kivett
Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following
committee of the Faculty of the Graduate School at the
University of North Carolina at Greensboro.

Dissertation
Adviser Vina R. Kivett

Committee Members _____

Virginia J. Stapp
Rebecca M. Smith
John Chester Dyer
Hilda Twitty Bradley

October 24, 1985
Date of Acceptance by Committee

October 24, 1985
Date of Final Oral Examination

SUGGS, PATRICIA K. The Application of a Theoretical Model of Intergenerational Helping to the Older Adult-Sibling Dyad. (1985).

Directed by: Dr. Vira R. Kivett. pp. 90.

Intragenerational helping behavior, specifically that between older adults and their siblings, has received little attention in the literature. The purpose of the present study was twofold: (a) to determine if an intergenerational model of helping between parents and children, developed by Bengtson, Olander, and Haddad (1976), would explain intragenerational helping between older adults and their siblings, and (b) to empirically construct a model representative of mutual help patterns between older adults and their siblings.

The respondents in the present study ($N=247$) were part of a larger sample of older adults in Rowan County ($N=321$). Respondents were selected by a compact cluster sampling technique and were stratified on the rural/urban dimension. Trained interviewers verbally administered a structured interview schedule to all subjects.

The testing of the propositions as stated by Bengtson et al. and the expanded model utilized multiple regression analyses. As a result of simultaneity between two of the variables in the expanded model (association and helping), the model was adjusted using two-stage least squares.

The analysis of the propositions showed that factors which influence parent/child helping differ from those factors which influence helping between older adults and their siblings. One exception was residential propinquity, however, the direction of its influence was different for siblings. A greater amount of variance could be explained in intragenerational helping by the three variables which were added to Bengtson's et al model: association, number of children, and marital status of the older adult.

Data from the present study suggest that the theoretical framework for intergenerational mutual help is inadequate in describing intragenerational mutual help. A separate theoretical framework, therefore, is needed to explain intragenerational helping, specifically between siblings, with special attention to the social contact between them.

ACKNOWLEDGEMENTS

This dissertation represents the end of a long and fulfilling process that involved many persons to whom I am indebted. I would like to express my special gratitude to my major advisor, Dr. Vira R. Kivett, for her invaluable guidance and support shown to me during the course of my graduate study. I offer my deep appreciation to the members of my research committee for their individual and collective support: Dr. Chris Busch, Dr. Rebecca Smith, Dr. Gaila Twitty-Bradley, and Virginia Stephens.

I am grateful for and appreciative of the statistical counsel I received from Dr. Sally McNulty, Dr. Deborah Godwin, and Judy Lipinski. I am grateful for the technical assistance (APA rules) given by Judy Fulbright. Thanks also are extended to Mary Beane for her excellent typing of this dissertation.

I am appreciative of the support of the North Carolina Agricultural Research Service and the University of North Carolina at Greensboro who made this study possible.

My family has been a real source of strength and support throughout my doctoral program. I want to thank my father, Charles E. Kaylor, and my mother, Desdie L. Kaylor. I want to especially thank my husband, Douglas Suggs, and my son, Jared, for their understanding and encouragement. Without their love and support I never could have accomplished such a task.

TABLE OF CONTENTS

	Page
APPROVAL PAGE.	ii
ACKNOWLEDGMENTS.	iii
LIST OF TABLES	vi
LIST OF FIGURES.	vii
 CHAPTER	
I. INTRODUCTION.	1
Research Questions	3
Theoretical Framework.	4
Hypotheses	5
Assumptions.	6
Limitations.	6
Definitions.	7
II. REVIEW OF LITERATURE.	10
Family Support	10
Parent and Child Mutual Help Patterns.	14
Factors Contributing to Parent and Child Mutual Help Patterns	18
Older Adult and Sibling Mutual Help Patterns	22
Factors Contributing to Older Adult and Sibling Mutual Help Patterns	25
Summary.	29
III. METHODS AND PROCEDURES.	31
Sample Selection	31
Urban Sample	31
Rural Sample	32
Research Design and Interviewing Procedures	32
Data Analysis.	33
Parent and Child Analysis.	33
Older Adult and Sibling Analyses	34
Alternative Model.	35
Research Measures.	39
Dependent Variable	39
Independent Variables.	42

	Page
IV. RESULTS	46
Descriptive Findings	46
Inferential Findings	55
Bengtson and Associates' Model for Parents and Children	55
Bengtson and Associates' Model for Older Adults and Their Siblings.	59
Alternative Model for Older Adults and Their Siblings	60
V. SUMMARY, DISCUSSION AND CONCLUSIONS	69
Summary.	69
Discussion	72
Adult/Child, Adult/Sibling Differences . .	72
Proximity.	72
Dependency needs	75
Explaining Mutual Help Between Siblings in Later Life	76
Association.	76
Number of Children	78
Marital Status	79
Theoretical Implications	80
Conclusions.	81
Recommendations for Future Research.	82

LIST OF TABLES

Table	Page
1. Demographic Characteristics of Respondents . . .	47
2. Demographic Characteristics of Children and Siblings.	49
3. A Comparison of Activities Done by Respondents with their Children and Siblings of Most Contact One or More Times in the Past Year. . .	52
4. A Comparison of Help Given to and Received from Children and Siblings of Most Contact One or More Times in the Past Year.	53
5. A Comparison of the Regression Results of Bengtson, Olander, and Haddad's Propositions. .	56
6. Significant Contributors to Mutual Help Among Older Adults and their Siblings: The Expanded Model.	62
7. Significant Contributors to Activities Done Together Among Older Adults and their Siblings.	63
8. Contributors to Mutual Help Among Older Adults and their Siblings as Determined by a Two-stage Least Squares	66
9. A Comparison of the Expanded Model and Two-stage Least Squares Analysis of Contributors to Mutual Help Among Older Adults and their Siblings	67

LIST OF FIGURES

	Page
Figure	
1. An intergenerational model of family solidarity as proposed by Bengtson, Olander and Haddad (1976)	37
2. A graphic presentation of the alternative model for older adult and sibling mutual help.	64

CHAPTER I

INTRODUCTION

Family relationships in later life are an important concern to social gerontologists and family scholars (Brubaker, 1983). A significant body of research demonstrates that families are effective resources for the elderly and are responsive to their critical needs (Bengtson, Olander, & Haddad 1976; Kivett & Atkinson, 1984; Shanas, 1979; Sussman, 1983). Research is being directed toward specific relationships, for example, parents and adult children, husband-wife, sibling, and grandparents and grandchildren. This research shows that most families do not abandon the elderly but provide substantial support (Brody, Poulshock, & Masciocchi, 1978; Sussman, 1983; Weber & Blenkner, 1975). The amount of involvement and role the family plays may vary, however, depending on economic resources, family structure, quality of relationships and competing demands on family time and energy. Sussman (1983) and Brody, Poulshock, and Masciocchi (1978) found that elderly family members are recipients of considerable assistance if strong, integrative relationships exist with their family members. The presence of the family and its availability as a source are salient factors in delaying, if

not preventing institutionalization of the chronically ill older person.

According to Shanas (1973), adult children are the major social and psychological support of the elderly. Cherlin (1983) claims there may be an emergence of new family roles for the elderly and their children. Children may be needed as intermediaries between older parents and bureaucracies that serve the elderly. If more people remain childless or have only one or two children, however, children will become less available for companionship, psychological support, and other forms of help in old age. With increased longevity among current and future elderly, there could be greater availability of siblings resulting in additional family support. Brothers and sisters have been found to be important social and psychological supports, particularly for people with no children or who have never married (Cicirelli, 1980). The strength of the sibling relationship could be expected to become greater, therefore, with greater exchange of help between siblings as fewer children are available (Cicirelli, 1980).

There are few models of family solidarity beyond the child level which show the factors which contribute to mutual helping patterns between older adults and other family members. Bengtson et al. (1976) proposed a model of intergenerational solidarity illustrating the role of helping behaviors in family solidarity and the factors which

influence these behaviors. Government cut-backs in funding, resulting in a decrease of formal supports to the elderly, place family support in a critical role in the older adult's life. Knowledge of the contributing factors to helping behaviors between family members can enhance the efforts of service providers and policymakers in their attempts to strengthen informal support systems of the elderly. The purpose of the present study was to compare the mutual help patterns of older adults and siblings with those of older adults and children, using the model of intergenerational helping as proposed by Bengtson et al. (1976). A major purpose was to determine if the same factors contributing to parent and child help patterns also applied to older adult and sibling patterns. Based upon the results of the application of Bengtson's et al. model to that of the older adult and sibling relationship, an alternative model for older adults and their siblings incorporating additional variables suggested by the literature was applied. An effort was made to explain maximum variance in the mutual helping behavior between older adults and their siblings of most contact.

Research Questions

Two primary questions form the basis for this study.

1. Will the factors: residential propinquity, filial responsibility, dependency needs, and sex linkage, which, as proposed by Bengtson et al. (1976) contribute to the mutual help patterns of older adults and their adult children, also

contribute to help given and help received between older adults and their siblings of most contact?

2. Based upon the results of the application of Bengtson's et al. model to that of the adult-sibling relationship, will an alternative model, incorporating the significant variables from the analysis and the following additional variables suggested from the literature: marital status of the respondent; number of children of the respondent; and association (activities done together) increase the amount of variance explained in an intragenerational model of mutual helping behaviors between older adults and their siblings of most contact?

Theoretical Framework

Mutual helping behavior has been found to be an important correlate of family solidarity. According to Bengtson's et al. (1976) theory of intergenerational solidarity, helping behavior is a significant contributor to affectional solidarity. Bengtson's et al. theory forms the theoretical framework for the present study. Nye and Rushing's (1969) research supports the assumption of Bengtson et al. that family solidarity, both intergenerational and intragenerational, can be measured in terms of affection, association, and consensus. Affectional solidarity refers to the nature of positive sentiment among family members involving the perceptions of being close to another member of the family. Associational solidarity

refers to the interactional patterns between members of the family. According to Homans (1950), a positive social bond exists when family members engage in activities such as recreation and visitation. Consensus solidarity refers to the extent of agreement or similarity in personal and social values, opinions, and beliefs between family members.

Mutual helping behavior contributes to family solidarity. Factors which tend to stimulate helping behaviors include dependency needs, residential propinquity, type of sex linkage, and filial responsibility (Bengtson et al., 1976).

Hypotheses

The hypotheses of this study constituted two sets. Hypotheses one through four concerned older adults and their children; and hypotheses five through eight concerned older adults and their siblings.

Parents and Children

H₁: Helping behavior among older adults and their children of most contact is positively associated with residential propinquity.

H₂: The effect of residential propinquity upon helping behavior is influenced by the type of sex linkage.

H₃: The effect of residential propinquity upon helping behavior is increased by the amount of filial responsibility.

H₄: Intergenerational helping behavior is increased by the dependency needs of the elderly.

Older Adults and Siblings

H₅: Helping behavior among older adults and their siblings of most contact is positively associated with residential propinquity.

H₆: The effect of residential propinquity upon helping behavior is influenced by the type of sex linkage.

H₇: The effect of residential propinquity upon helping behavior is increased by the amount of familial responsibility.

H₈: Intragenerational helping behavior is increased by the dependency needs of the elderly.

Assumptions

Three major assumptions underlie the present study.

1. The intergenerational solidarity model as proposed by Bengtson et al. (1976) will also explain a significant amount of variance in helping behaviors which occur intra-generationally with siblings.

2. Mutual helping patterns can be measured by self reports of older adults based upon recalls of help given and received during the past year.

Limitations

Two overall limitations to the study are acknowledged. The first limitation deals with the dependent variable, mutual helping behaviors. Mutual helping behaviors were

measured using only one member of the dyad - the older adult. Help given by the child or sibling and the help given by the older adult are all based on the older adult's perceptions. A more reliable measure of mutual helping behaviors would be obtained with responses from the child and/or sibling of focus.

The second limitation deals with scale construction. The composition of the mutual help scale masks extent of mutuality or reciprocity within dyads. In other words it is difficult to know if one is a high giver or a high receiver of assistance.

Definitions

The following discussion describes the major variables in the study.

Mutual Helping Behaviors - This measure consisted of a composite of help given and received by the child or sibling of most contact during the past year in 11 areas of help. Helping behaviors included: help with transportation, minor household repairs, housekeeping, shopping, yardwork, car care, assistance when ill, important decisions, legal aid, financial aid, and other help specified by the respondents.

Residential Propinquity - This was a functional measure of the nearness of the residence of the kin in focus (kin of most contact) to that of the older adult.

Filial or Familial Responsibility - This measure represented the level of expectations which older adults had regarding

duties and obligations of the children and siblings in focus in situations of poor health, poor finances, and isolation.

Dependency Needs - This was a measure of self-perceived health status of the respondents based upon a scale ranging from one (serious health problems) to nine (perfect health).

Type of Sex Linkage - Sex linkage was operationalized as the extent of femaleness of the older adult-kin dyads determined by sex dyads. The dyads for parent/child were: father/son, father/daughter, mother/son, and mother/daughter. The dyads for older adult/sibling were: brother/brother, brother/sister, sister/brother, and sister/sister.

Family Solidarity - Family solidarity was a measure of the amount of cohesion or integration found within a family group as observed through the extent of association, affection, and consensus of values (Bengtson et al., 1976).

Intergenerational Family Solidarity - This measure represented family solidarity as it related to extent of association, affection, and consensus between lineal kin (sons, daughters, grandchildren).

Intragenerational Family Solidarity - This represented family solidarity as it related to extent of association, affection, and consensus between nonlineal kin (in this case siblings).

Marital Status - This variable was operationalized as the marital status of the individual at the time of interview (single, married, separated/divorced, or widowed).

Number of Children - This was a measure of the total number of living children who were natural, adopted, foster, or step children.

Association - Association was a composite measure of face-to-face contact between siblings.

Communication by Mail or Telephone - This was a measure to determine the frequency with which siblings telephoned or wrote to one another.

CHAPTER II

REVIEW OF LITERATURE

A review of the literature pertaining to the mutual helping behaviors among older adults and their kin, specifically, children and siblings, is presented in Chapter II. The first section includes a discussion of family support in general. The second section includes a discussion of the mutual helping behaviors that occur between older adults and their children. The third section includes a discussion of the mutual helping behaviors that occur between older adults and their siblings.

Family Support

Research to date has documented that in every area of life, family and kinship networks are functioning as basic support systems (Litwak, 1960). Among the poor and working classes, family units could not survive without economic, social, and emotional support provided by kin and family members. Litwak challenged the hypothesis by Parsons (1949) that extended family relations are essentially antithetical to democratic, industrial societies. Litwak contended that the extended family has important functions in providing aid across class lines, allowing the nuclear unit to retain

extended kinship contacts despite differences in class position.

In order to establish the meaning and significance of the kin network for older members, a description of the functionality of the kin network in terms of specific structural properties is essential (Kerckhoff, 1965). In analyzing the system one must consider family structure as a whole and its place in a particular setting, for example, rural or urban; and in the overall social structure, for example, social, economic, and political themes (Sussman, 1983). Situational and circumstantial factors under which interaction occurs are also critical in understanding the family's role, for example, financial status, stage of family cycle, illness, previous network activities, personality traits, ideologies, and value postures (Bengtson et al., 1976; Sussman, 1983). Overall, the test of relevance of the kin system is whether or not the network provides the following: intimate human interaction and empathetic reciprocal response on the emotional level, conditions critical to survival, sustenance of mental and physical health, and a more meaningful existence.

The notion of independent living is a myth, for everyone, especially the aged, is dependent upon others for continued survival. Historically, families in both rural and urban areas have exchanged support of all kinds and continue to do so (Haraven, 1978). Research shows that

persons generally turn first to family members for aid. Lebowitz (1978) demonstrated in his research that most people who successfully resolve problems do so by first drawing on some type of aid from informal sources, for example, families, friends, and neighbors, followed as needed with additional aid from formal agencies and organizations. According to Sussman (1976) and Shanas (1979), those with no informal network show a drop in personal well-being, increased problems of adjustment to widowhood, lower mental health, and an increased likelihood of institutionalization.

There have been contrasting views on the role of the family network versus that of more formal organizations. According to Sussman (1976), development of society-wide welfare, Social Security, educational, and health care support provide young and old with basic economic support and services which in the past were provided by family or kinship groups. The historical cement between generations of family members has been economic interdependence - parental control of potential heirs was insured by ultimate threat of disinheritance. Today the elderly have diminished power resources (Treas, 1977). Like Sussman (1965) and Treas (1977), Hagestad (1981) claimed that the family is no longer the corporate economic unit. Instead of economic cooperation, emotional bonds now form the basis of family solidarity and cohesion. Empirical evidence demonstrates

however, that despite the assumption that a number of functions previously assigned to families have been taken over by other institutions, viable extended kinship systems do exist and are highly integrated within the network of social relationships and mutual assistance (Shanas, 1979). Furthermore, research on intergenerational relationships among adults suggests exchanges across generations still involve tangible and intangible resources. That is to say, family members share goods and services (Adams, 1968; Troll & Bengtson, 1979), as well as serve one another as reliable emotional support and in confidant relationships (Shanas, 1979; Treas, 1977). However, new varied family forms (some created by societal conditions, others formed in quest for more meaningful relationships) require reciprocal exchanges rather than one-sided dependencies, parity over superordinate-subordinate relationships, and effective utilization of individual and organizational resources (Sussman, 1983).

Generational relations have changed, not necessarily weakened, family ties (Treas, 1977). Fewer children result in fewer dependents to call on for assistance. Children establish careers and are in a position to resist parental economic threats. These demographic shifts also result in fewer brothers and sisters with whom to share the burden of physical, financial, and emotional support of aging parents. Forces of societal change, for example, more attention to the increasing population of elderly persons with a

resulting increase in homes for the aged and a larger variety of available services, insure that the family will not be the end-all-and-be-all of care for the aged. However, according to Brody (1981), in spite of demographic changes, families continue to go about caring for elderly members.

In summary, while there have been many demographic and economic changes over the past few decades, the family is still a critical source of support, both emotionally and physically, for its older members. Historically, family members have exchanged services and support of all kinds, and continue to do so in the present. There is added impetus for this type of interaction as families are needed to supplement formal programs and services.

Parent and Child Mutual Help Patterns

Intergenerational linkages have proven to be the most salient component of the kin network (Adams, 1968; Aldous & Hill, 1965; Cicirelli, 1983b; Feldman, 1964). Anthropologists have argued in support of the norm of reciprocity. The giving of a gift or favor obligates the recipient to return something of equal value, thus generating social ties among individuals and groups (Gouldner, 1960; Levi-Strauss, 1964). Parental investment in a child's survival does create, at some level, a sense of obligation on the part of the child when grown to care for an ailing parent (Hess & Waring, 1978). Simos (1970) claimed that guilt and anxiety

over one's performance as dutiful offspring operate as a form of social control. Reactions of others, for example, siblings, social workers, medical personnel, neighbors, and friends reinforce norms of filial piety. Exchange of visits and gifts across generations: two and three way transfer of gifts, advice, help in emergencies, and goods and services, serve to connect and reaffirm the viability of a lineage (Sussman, 1976; Riley, Foner, Moore, Hess, & Roth, 1968; Hill, Foote, Aldous, Carlson, & MacDonald, 1970). Evidence suggests that maintenance and sustenance of parent/child bonds will be increasingly based upon the willingness of both parties to engage in supportive behaviors. These bonds, in turn, will hinge on the quality of the relationship in the past (Hess & Waring, 1978).

Although intergenerational helping has been found to be the primary means of informal supports (Bengtson et al., 1976; Cicirelli, 1983b; Gelfand, Olsen, & Block, 1978; Shanas, 1979), support is strained when the needs for assistance persist over time (Johnson & Catalano, 1983). Children with competing commitments and spouses with their own health risks in combination with increased social isolation from caregiving can serve to make long-term care of an older person vulnerable (Johnson & Catalano, 1983). In addition, the balance between giving and receiving can be so asymmetrical within intergenerational networks that other strains are introduced. Parents who give more than they

receive are in a patron-like status. Grandparents who give less than they receive are in a dependent status. Married children, who give and receive more than parents and grandparents, are in a reciprocal relationship (Hill et al., 1970). Strains, in other words, are introduced by non-reciprocity, particularly as they relate to receiving without giving.

The proportion of elderly 80 years or older has increased with a corresponding increase in the demands put upon family members to provide support services. Researchers disagree as to whether or not adult children's relationships with parents may deteriorate as these parental dependencies increase. Adams (1968) found, in his study of Greensboro residents, that the relationship between mother and child suffered when the mother was widowed. Stress of helping a parent may become great and could have negative consequences for those providing care (Horowitz, 1978; Rosenmayr, 1978). This strain, according to Simos (1970), may lead to a decrease in helping behaviors. An opposing viewpoint is held by Troll, Miller, and Atchley (1979), who claim that positive and negative feelings can coexist in the same relationship and interpersonal conflicts may not necessarily lessen helping behavior. However, with the trend being a significant increase in elderly persons in families and an expanding number of four generation families, the older person's vulnerability will continue to

increase as well as the strain of intergenerational helping (Gelfand et al., 1978).

Demands from the elderly for major financial aid for economic problems relating to extensive physical illness may also increase the strain on intergenerational relationships and decrease the ability of the younger individuals to cope with their own aging. The first generation family has already experienced major economic changes: reduced discretionary income, increased reliance on fixed income and savings. Second generation families (55 years or older) will begin to experience and cope with these economic changes as they approach retirement. This period for them, therefore, will involve reorganization of life styles and major attempts to marshall resources for future non-work years. Formal supports such as Medicare and Medicaid, and Social Security have helped somewhat. Governmental support, however, remains far from adequate (Gelfand et al., 1978).

Generations will face developmental issues as they age. The elderly, or first generation families, will engage in a reassessment and reintegration of their lives. Second generation families will begin dealing with role changes and losses as well as a restructuring of time and a new self-perception. These issues may prevent them from being ready to provide the social support necessary to enable the first generation to maintain contact with surviving friends and relationships or to engage in constructive activities

(Gelfand et al., 1978). Developmental changes could result in corresponding changes in the concept of mutual support among family generations. Thus, we see two generations coping with their own aging issues.

Despite strains which may reduce support behaviors among family members, the kin network still has its influence. Three norms help to maintain this influence. Help given or received may be governed first by the norm of reciprocity which places constraints and obligations on both the giver and the receiver (Gouldner, 1960). The second governing factor may be the norm of responsibility of children for their parents. The third factor may stem from the norm of obligation and desire of more advantaged families to aid those persons in less fortunate circumstances (Hill et al., 1970). In other words these norms appear to be sufficient to motivate an optimum level of kin keeping activities designed to maintain viable modified extended family networks.

Factors Contributing to Parent and Child Mutual Help Patterns

An important component of Bengtson's et al. (1976) theory of intergenerational solidarity is that of mutual help patterns between family members. According to Bengtson et al. the amount of helping behavior that occurs within the family is a primary indicator of affectional solidarity. Because adult children are essentially a limited support

system for elderly parents, the factors which elicit and sustain their helping behaviors are important to understand (Cicirelli, 1980). Helping behavior is a function of dependency needs, residential propinquity, filial responsibility, and type of sex linkage (Bengtson et al., 1976).

Residential propinquity has been found to be central to patterns of generational relationships (Bengtson et al., 1976; Kivett, 1985; Kivett & Atkinson, 1984). Bengtson et al. claim that interchanges are more likely to occur when persons live near one another. Similarly, Kivett and Atkinson's (1984) study of rural transitional older adults showed that residential propinquity was a more stable predictor of older parent-child interaction than dependency needs of parents or sex linkage. Studies generally show close parent-child proximity. In a study by Shanas (1979), 84% of older persons who had children lived less than an hour away from at least one of their children. According to Troll (1971), in more than 25 studies of residential proximity, older persons preferred to live near a child as opposed to far away. Some adult children migrate to be closer to ill or disabled parents (Sussman & Burchinal, 1962).

Dependency needs have been found to contribute to helping patterns. Rosow (1967) found that parents' dependencies, rather than feelings of closeness, determined frequency of interaction. Kivett (1985), in a study of the

relationship between consanguinity and help, found that health of older adults was a significant factor in determining the amount of helping behavior between generations. Similarly, Stoller (1983), in a study of 753 noninstitutionalized persons 65 years and older, found amount of help provided varied in response to older parents' level of need. The amount of help received was higher among older adults with poorer health.

Sense of filial responsibility has been found to be an important contributor to helping behavior patterns. Filial obligation has been referred to as an "irredeemable obligation" (Blau, 1973), family loyalty (Adams, 1968), and filial maturity (Blenkner, 1965). Much of the helping behavior that exists between family members is a result of this feeling of obligation. Whether or not older adults are satisfied with frequency of interaction and mutual aid patterns with adult children seems to depend on what they expect or see as their children's filial responsibility (Seelbach, 1978). Seelbach (1978) found that the more vulnerable older persons were (that is, sick or dependent), the more aid they expected and received from adult children. Furthermore, number of children would appear to be unrelated to the amount of assistance expectation. Kivett and Atkinson (1984), for example, observed that older parents expected children to assume an appreciable level of responsibility in meeting important health, economic, and

emotional needs regardless of how many offspring there were to share in this assistance.

Another important contributor to mutual help patterns is type of sex linkage. Lopata (1973) found that daughters provided more emotional and psychological support to older widows than sons; whereas, sons provided more financial support. The labor force participation of women has raised concern about the ability and willingness of adult daughters to continue to provide the majority of home care for their parents (Lang & Brody, 1983; Stoller, 1983). Stoller's study revealed that the competitive demands on helpers' time influenced the hours of assistance provided by caregivers, with daughters providing more hours of help than sons. Somewhat in contrast to this observation, Suggs and Kivett (1984) found that, at least among working class older adults, daughters' employment had no effect upon amount of help given to parents.

In summary, there is a functional relationship between family solidarity and mutual help patterns. According to Bengtson et al. (1976), mutual helping behavior contributes to affectional solidarity, or the closeness felt between family members. Four variables have been found to be of primary importance to helping behavior: residential propinquity, filial responsibility, dependency needs, and type of sex linkage (Bengtson et al., 1976).

Older Adult and Sibling Mutual Help Patterns

Examination of familial support has focused on adult children as primary sources of assistance (Cicirelli, 1983a; Hill et al., 1970; Scott, 1983; Streib & Thompson, 1960). Little research has been done on other levels of kin. The lack of literature on sibling relations may be due to the assumption that siblings have greater influence on one another during their early years of development (Cicirelli, 1980; Scott, 1983). Cumming and Schneider (1961), in a study of 220 adults, aged 50 to 80, however, found that shifts in overall kin solidarity occurred throughout time with sibling solidarity remaining stronger than other kin solidarity. Furthermore, sibling solidarity seemed stronger than nuclear family solidarity, which could have been a characteristic of the stage of family development. Sibling relationships tended to be very important relational ties in adulthood years, particularly in the last 20 or 30 years of life. These findings, however, have been challenged. Rosenberg and Anspach (1973) contended that sibling solidarity seemed more prevalent only when the conjugal bond is disrupted, that is, when an older adult is widowed, separated, or divorced. Sibling solidarity may be one way that the kinship system becomes operative as a source of socio-emotional support when the conjugal relationship is no longer intact.

Distinctive features of sibling relationships, for example, availability and duration of the relationship may have implications for the role of siblings in support networks of the elderly (Cicirelli, 1980). With regard to availability, most older adults have at least one living sibling. In his study of persons in a small midwestern city, Cicirelli (1979) found that, although the number of living siblings declines with age, 78% of the older residents reported having at least one living sibling. This availability of siblings becomes even more important when children are not available, suggesting that the sibling relationship complements the older adult's relationship with children and grandchildren (Scott, 1983). Siblings can have the longest duration of any kin relationship and may be the most egalitarian of any relationship in the family (Scott, 1983). Allan (1977), in a study of 41 older adults, found that siblings felt a desire and obligation to be involved to a degree with one another. The majority of siblings interacted directly, while those that did not interact directly had contact with their siblings through telephoning and writing. As a result of these distinctive features, siblings as well as children may be turned to and relied upon during times of crisis, which in turn, has important implications for support (Allan, 1977).

Sibling interaction and assistance tend to increase with age. Given the greater incidence of chronic disease,

greater length of recovery from illness, and greater likelihood of dependencies created through disability or widowhood in later life, siblings may exchange more help in later life than in earlier periods (Scott, 1983). These attributes of helping and support become more relevant in adulthood and old age (Cicirelli, 1980). Adams (1968) found that a greater percentage of older siblings exchanged assistance (39%) than younger siblings (12%) in his study of Greensboro residents. Scott's (1983) study of 199 adults 65 years to 90 years of age showed that when siblings were as available as other kin, a greater percentage of them were involved in helping behaviors. Assistance when ill, help in making decisions, and transportation were the types of help most frequently exchanged between siblings.

There are differing views on the amount of assistance and support among siblings depending on the measures utilized. Investigators who assert sibling relationships decline with age base their arguments primarily on residential proximity and frequency of contact. Rosenberg and Anspach (1973) argued the case for decline most strongly, reasoning that for sibling relationships to be viable, they should live near one another. Findings in opposition to Rosenberg and Anspach's conclusions are based on the criterion of feelings of closeness and affection rather than proximity and contact (Allan, 1977; Atchley, 1977; Cicirelli, 1979; Cumming & Schneider, 1961). Allan (1977)

examined the qualitative nature of sibling relationships in later life and found even when contact was limited, involvement continued. Siblings kept in touch with each other's location, activities, and circumstances. When direct interaction was not possible, information was gained indirectly through family networks. Another study (Ross & Milgram, 1982) examined the frequency of contact in conjunction with feelings of closeness. Ross and Milgram's exploratory study of closeness in adult sibling relationships indicated that regular and frequent contacts with siblings become more important in old age as a means of self-validation and support.

Factors Contributing to Older Adult and Sibling Mutual Help Patterns

There are no clear theories concerning sibling assistance in adulthood. For example, little is known about circumstances that take place when one sibling faces a crisis situation, how others learn of the crisis, how they respond, and what their feelings are during that crisis (Cicirelli, 1983b). However, Bengtson's et al. (1976) theory of family solidarity is based on the assumption that family solidarity, both intergenerational (vertical) and intragenerational (horizontal) can be measured in terms of affection, association, and consensus. The contributing factors to mutual helping patterns between siblings may, therefore, be similar to those between parents and children.

As with the parent/child relationship, health, or dependency needs, is an important correlate of help from siblings (Cicirelli, 1983; Scott, 1983). The more dependent the older adult becomes, along with fewer sources of support, siblings give more aid.

There have been conflicting views concerning the importance of marital status to helping behaviors among siblings. Some data indicate that widowed, single persons and older adults without children have greater contact and express greater closeness with siblings than married older adults with children (Rosenberg & Anspach, 1973; Shanas, 1973). In her earlier work, Lopata (1973) found that widows viewed siblings as real sources of aid, services, finances, or comfort if they needed it. In contrast, in a later study (1978) Lopata observed that siblings, as well as other relatives not directly in the parent-child line, were not important contributors to the support system of Chicago area widows. Siblings were mentioned as providers of services in only ten percent of the cases. Siblings were more apt to provide decision-making help, sick care, household repairs, legal aid, and transportation than other services. A study by Cantor (1979) of New York widows from a minority ethnic group also showed siblings to be of little support.

Proximity to siblings has been found to be an important factor in the mutual helping patterns between siblings. According to Lee and Ihinger-Tallman (1980), proximity is a

more important factor in interaction with siblings than with children. Lack of proximity limits the degree and type of support siblings can offer (Cicirelli, 1980).

Type of sex linkage of siblings has been observed to be related to the strength and quality of sibling relationships. Adams (1968) found stronger affectional ties between sisters than between brothers or cross-sex siblings. Others have also found that sex composition of the sibling dyad influences the degree of attachment in later life (Cumming & Schneider, 1961; Shanas, 1973), with sister-sister dyads being especially attached (Allan, 1977). According to Cicirelli (1979), older siblings, whether male or female, are influenced to a greater extent by sisters than by brothers.

There is limited research in the area of familial responsibility and sibling relationships. As a result, much that is known is purely conjecture. If filial responsibility is an important factor in the area of parent-child helping behaviors (Seelbach, 1978), and the sibling relationship is the intragenerational equivalent to the parent-child relationship, then it would seem logical that familial responsibility would also influence sibling mutual helping behaviors.

Presence of other family resources, for example, children, has been found to influence the mutual helping patterns between siblings (Kivett, 1985; Scott, 1983).

Kivett (1985), in her study of older rural transitional adults, found that number of children affected the amount of help the older adult received from lesser kin (kin below the child, child-in-law levels). The greater the number of children the less help received.

Association, or the number of activities done together, has been found to have both a dependent and independent function in helping. A number of investigators have found association to function as a dependent measure (Adams, 1968; Bengtson et al., 1976; Scott, 1983). Variables predictive of association are residential propinquity (Bott, 1957; Reiss, 1962; Scott, 1983), filial responsibility (Adams, 1968; Blenkner, 1965), sex linkage (Sweetser, 1963), communication by mail or telephone (Aldous & Hill, 1965; Litwak, 1960), health (Bild & Havighurst, 1976), and marital status (Shanas, Townsend, Wedderburn, Friis, Milhoj, & Stehouwer, 1968). These studies show association among kin is greatest when relatives live closer together, have feelings of responsibility or loyalty to one another, are female, keep in contact either face-to-face or by mail or telephone, are in good health, and are single. Association, as an independent variable, may contribute to the helping behavior patterns between siblings. Allan (1977) suggested the importance of association to helping behaviors through his observation that, although siblings engaged in few

activities with one another, association contributed to their solidarity.

In summary, although there is a paucity of research on sibling relationships in later life, Bengtson et al. (1976) suggest that several variables important to the mutual help patterns of older adults and children may also have application to the adult-sibling relationship. These include: residential propinquity, sex linkage, familial responsibility, and dependency needs. The literature indicates that three variables not in Bengtson's et al. model are also important to mutual help patterns between older siblings. These variables include marital status, number of children of the older adult, and association (activities with the older adult).

Summary

The family has an important role to play in the support of older adults. There is a great deal of literature to support this position. With government cut-backs, support must come from informal sources. Because children, the primary helping resource to older adults, may be limited or unavailable, the question arises as to the role of siblings as resources in old age.

The literature on mutual helping behavior patterns of older adults concentrates almost solely on the parent and child relationship. A theory of mutual help that would appear to lend to extrapolation is that of intergenerational

solidarity as proposed by Bengtson et al. (1976). The same factors are discussed relative to the parent-child and older adult-sibling mutual helping behaviors (residential propinquity, dependency needs, sex linkage, filial responsibility), although there are few data to substantiate factors contributing to the adult-sibling relationship. Other literature suggests three additional variables that may be important to sibling relationships. They include: marital status and number of children of the older adult, and association (activities done together).

Additional research is needed in the area of intragenerational helping behaviors, particularly as it relates to sibling relationships in later life. Information is needed as to how intragenerational helping differs from intergenerational helping, and how intragenerational helping can enhance informal support systems in later life.

CHAPTER III

METHODS AND PROCEDURES

Sample Selection

The sample for this study was obtained from an existing data base (North Carolina Agricultural Research Project 13644, 1979). Rowan County, located near the center of the Piedmont crescent of North Carolina was the locus for the study. The county is situated in the Piedmont plain of the state, an area generally urban in nature but with a few distinctively rural outlying segments. Respondents were selected by a compact cluster sampling technique (all eligible persons, within a selected area and agreeing to participate, were interviewed). The sample was stratified on the rural/urban dimension. For purposes of the present study, only those older adults with one or more children and one or more siblings were included ($N=247$).

Urban sample

The urban sample was selected from the only two towns (population of more than 2500) in Rowan County; Salisbury and Spencer, North Carolina. The towns were sampled at a rate in proportion to the percentage of persons 65 years and older within the town limits (sampling ratio=.03108). City block statistics were used as a basis for the selection of the urban sample. Enumeration districts were divided into

clusters based upon a formula using a ratio of the desired number of clusters to the total households in the city occupied by persons 65 years or older. All housing units containing five or more adults 65 years or older (group quarters) were removed from the population. Sampling zones were systematically selected, based upon the prior established sampling ratio.

Rural sample

A listing was obtained from census data of the number of persons 65 years or older living within each enumeration district within each of the county's 14 townships. Enumeration districts were divided into clusters based upon a formula using a ratio of the desired number of clusters to the total number of households in the county occupied by persons 65 years or older (sampling ratio=.02376). Aerial photos were used to determine the location and density of housing units in the rural areas. Procedures were then followed for the selection of sampling zones in the urban area. All households falling within the selected areas containing adults 65 years or older and agreeing to participate were sampled.

Research Design and Interviewing Procedures

Data were collected beginning in the fall of 1979 and ending in the spring of 1980. Trained interviewers verbally administered a structured interview schedule to all subjects. The response rate was 82%. In cases where two,

three, or more individuals were in one household, each was interviewed individually. Up to two call backs were made to each residence in the event that a potential subject was not at home or temporarily unavailable for an interview. The interview took approximately two hours to complete.

Data Analysis

Descriptive statistics were used to describe the sample on several demographic characteristics. The data were analyzed through the use of multiple regression analyses through SPSSX (SPSS Inc., 1983) and instrumental variable estimation through SAS (Barr, Goodnight, Sall, Blair, & Chilko, 1976). Instrumental variable estimation is used when dealing with estimation problems in the context of simultaneous equation models (Pindyck & Rubinfeld, 1981). A description of the technique is presented later in this section. Separate analyses were done for each of the two sets of hypotheses (parents and children, older adults and siblings), and the older adult and sibling alternative model.

The hypotheses and methods of analyses are described below. Adjusted R^2 s were utilized for variance explained in the regression analyses and a significance level of .05 was accepted for all analyses.

Parent and Child Analyses:

The first set of hypotheses was related to the family solidarity model as posited by Bengtson et al. (1976).

Hypotheses one through four were tested using regression analysis: regressing helping behaviors on residential propinquity; regressing helping behaviors on residential propinquity and sex linkage, respectively; regressing helping behaviors on residential propinquity and filial responsibility, respectively; and regressing helping behaviors on dependency needs. The hypotheses were as follows:

H₁: Helping behavior among older adults and their children is positively associated with residential propinquity.

H₂: The effect of residential propinquity upon helping behavior is influenced by the type of sex linkage.

H₃: The effect of residential propinquity upon helping behavior is influenced by the amount of filial responsibility.

H₄: Intergenerational helping behavior is increased by the dependency needs of the elderly.

Older Adult and Sibling Analyses:

Hypotheses five through eight, involving older adults and their siblings, were also tested using regression analysis: regressing helping behaviors on residential propinquity; regressing helping behaviors on residential propinquity and sex linkage, respectively; regressing helping behaviors on residential propinquity and familial responsibility, respectively; and regressing helping behaviors on dependency needs. The hypotheses were as follows:

H₅: Helping behavior among older adults and their siblings of most contact is positively associated with residential propinquity.

H₆: The effect of residential propinquity upon helping behavior is influenced by the type of sex linkage.

H₇: The effect of residential propinquity upon helping behavior is increased by the amount of familial responsibility.

H₈: Intragenerational helping behavior is increased by the dependency needs of the elderly.

Alternative Model for Older Adults
and their Siblings

Following the analyses of Bengtson et al. (1976), the model was expanded in a three step process: a) multiple regression utilizing Bengtson's et al. variables; b) multiple regression utilizing Bengtson's et al. variables and additional variables found in the literature; and, based upon the results of the second step, c) two-stage least squares.

The first step involved a multiple regression analysis utilizing the variables in Bengtson's et al. model (helping as the dependent variable and familial responsibility, sex linkage, residential propinquity, and health as the independent variables). The second step expanded the model and utilized a multiple regression analysis with the variables included in Bengtson's et al. model and three additional

variables as determined from the literature (marital status, number of children of the older adult, and association). The third step utilized instrumental variable estimation (two-stage least squares), based upon evidence of simultaneity between association and helping.

Two stage least squares is used when conceptual simultaneity occurs between two variables. In other words, there is some theoretical or mathematical relationship between endogenous variables that is nonrecursive (not unidirectional). The source of simultaneity in the present study was a theoretical specification of a nonrecursive model which did not suggest some temporal ordering in causality in a unidirectional manner among the dependent variables. In Bengtson's et al. model of intergenerational solidarity, helping behavior was a predictor of association (see Figure 1). The present study utilized association as a predictor of helping behavior based upon support of the literature, and the results of the expanded model. This reciprocal relationship led to a correlation among the error terms across equations, violating one of the most important assumptions of single equation methods. According to Namboodiri, Carter, and Blalock (1975: 514), "The general idea behind two-stage least squares is purifying the endogenous variables that appear in the equation to be estimated in such a way that they become uncorrelated with the disturbance term in that equation." The correlation

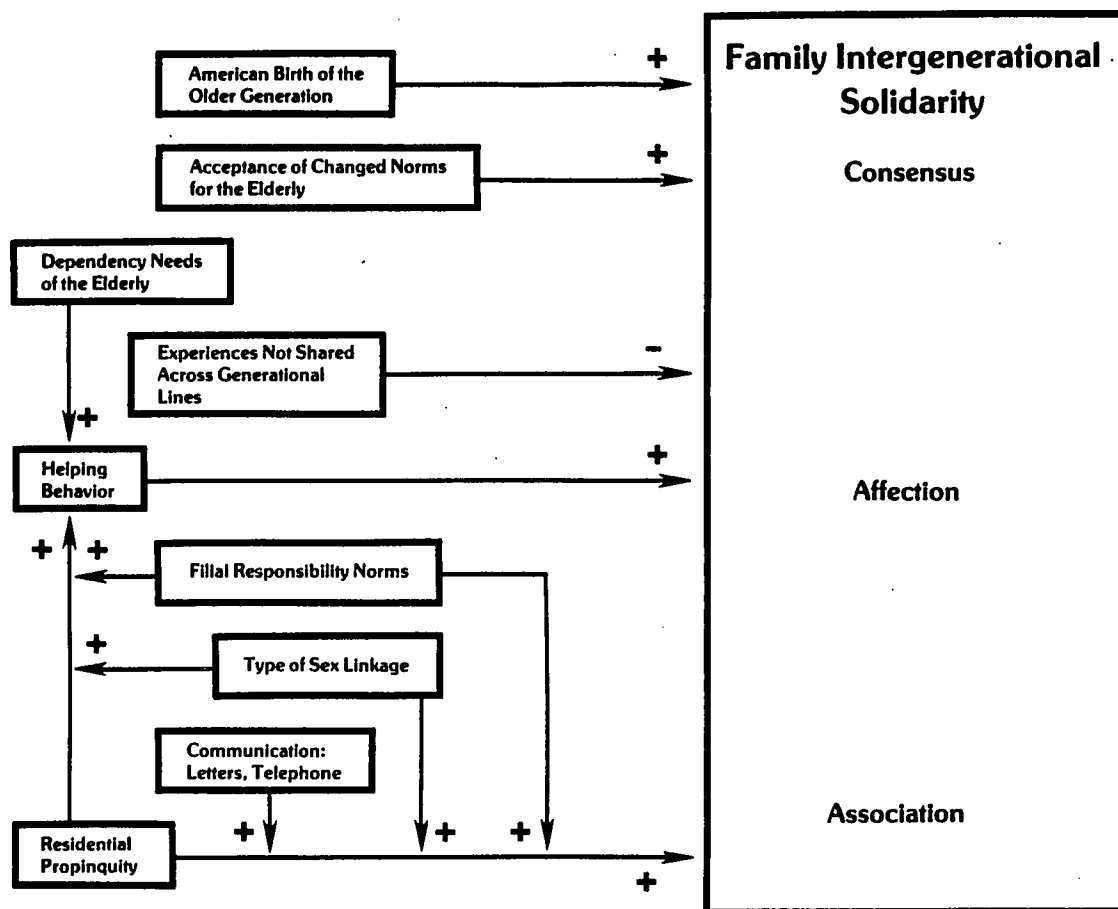


Figure 1. An intergenerational model of family solidarity as portrayed by Bengtson, Olander, and Haddad (1976).

Source: J.F. Gubrium (ED.), Time, Roles and Self, and Old Age. New York: Human Sciences Press.

across error terms would make the simultaneous equation method advantageous and essential in this case (Pindyck & Rubinfeld, 1981).

The present analysis was conducted with the plan that if association was found to be a significant contributor to helping behaviors, the predictors of association would be determined before proceeding to the two-stage least squares procedure. The following variables were entered into a multiple regression analysis: familial responsibility, communication by mail or telephone, sex linkage, residential propinquity, marital status and dependency needs of the older adult. As a result of no clear ordering of the variables in the literature, no temporal ordering of the variables was utilized.

Two stages comprise the instrumental variable estimation procedure. The first stage allows for the construction of a variable (predicted association) which would be linearly related to the predetermined model variables and purged of any correlation with the error term in the final equation. "The predicted Y values from the first stage are instrumental variables or instruments that remove the source of simultaneity bias from the two-stage least squares estimates and can be used to produce unbiased coefficients of the relationship in the model" (Godwin, 1984: 11). The assumptions underlying the instrument are as follows: a) the correlation between Z (association) and error terms in

the equation approach zero as the sample size gets larger; and b) the correlation between Z (association) and X (independent variables) is nonzero as the sample size becomes larger (Godwin, 1984).

In the first stage, the dependent variable, association, was regressed on all of the predetermined variables in the equation (those variables found to be significant contributors to association and helping behavior). This stage is known as the estimation of the reduced-form coefficient. The second stage utilized the estimated value of the instrumental variable, predicted association, as an independent variable along with the other independent variables, and helping behaviors as the dependent variable, to obtain two-stage least squares estimates for the ultimate equation. The two stages were completed in one analysis.

Research Measures

The research instrument was a 141 item questionnaire which included both forced choice and open ended questions. The instrument covered seven major areas: General Information, Work and Retirement, Income, Health, Family, Activities and Roles, and Subjective Well-being. Only those items pertinent to the purposes of this study will be described here.

Dependent Variable

Mutual helping behaviors, the dependent measure, was measured by the frequency with which older adults received

and gave assistance in 11 categories of help with kin in focus, in this case, children and siblings (Bengtson et al., 1976; Thompson & Walker, 1984). Categories included help with transportation, minor household repairs, housekeeping, shopping, yardwork, car care, illness, important decisions, legal aid, financial aid, and other help specified by the respondents. Responses to each item were coded one to nine according to one of nine levels of frequency of help given or received within the past year: never, less than once a year, about once a year, several times a year, about once a month, several times a month, about once a week, several times a week, or daily.

The dependent measure was factor analyzed for both parents and children and older adults and their siblings using the principal component factor analysis technique with varimax rotation. The analysis for parents and children resulted in seven factors, reducing the number of items from 22 to 20. Factor loadings under .50 were not accepted. Factor scores ranged from .51 to .89. Reliability for the scale was .82, as determined by Cronbach's alpha. Factor one represented obligatory aid received by the older adult from his/her child including transportation, help when ill, and help in decision-making. The second factor reflected obligatory as well as voluntary aid given by the parent to the child, for example, transportation, financial, and

household repairs. Factor three dealt with physical aid received from the child including yardwork and car care. The fourth factor involved personal areas, for example, housekeeping and shopping assistance given to the child. Factor five was in the legal and financial area of help given by the child to the parent. The sixth factor represented physical aid given to the child, for example, car care and yardwork. Factor seven consisted of other aid both given by and received by the older adults from their children.

As with parents and children, the factor analysis for older adults and their siblings resulted in seven factors, decreasing the number of items from 22 to 20. Only those variables with a loading of at least .50 were included. Factor scores ranged from .57 to .89. Reliability for the scale was .85 as determined by Cronbach's alpha. The first factor represented help given and received in personal areas such as finances, legal assistance, and housekeeping. Factor two was concerned primarily with help received by older adults as observed through errands and help in decision-making. Factor three represented help given by the older adult to his/her sibling in making decisions and running errands. Factor four dealt with physical assistance received by the older adult, for example, yardwork and household repairs. The fifth factor was in the legal and financial area of help given by the older adult. Factor six

had to do with physical assistance given by the older adult, for example, yardwork, car care, and household repairs. Factor seven included only one variable, car care received by the older adult.

Independent Variables

The independent variables for the study consisted of eight measures.

Residential propinquity indicated the nearness of the residence of the relative in focus to that of the older respondent (Bengtson et al., 1976; Cicirelli, 1983b; Kivett, 1985). Respondents were asked, "How long does it take (name of relative of most contact) to get from his/her residence to yours? - same household, 10 minutes or less, 11 to 30 minutes, 31 to 60 minutes, over 60 minutes, one day or more?" The item was scored one through six, respectively.

Filial/familial responsibility was a measure of feelings of personal obligation towards older adults (Houser & Berkman, 1984). Respondents were asked the extent to which they agreed that kin in focus should: take care of older relatives when they are sick; assist older kin with financial aid; visit older family members weekly; and write older family members weekly where there was not residential propinquity. Responses were set up on a five point scale and ranged from strongly agree to strongly disagree.

Dependency needs of the elderly was measured through the perceived health status of the respondents. Respondents

were shown a picture of a ladder with nine rungs numbered one to nine. They were told, "Here is a picture of a ladder. Suppose we say that the top of the ladder represents perfect health and the bottom represents the most serious illness. Where on the ladder would you say your health is at the present time?" Maddox (1964) found the self-perceived measure of health to be a highly reliable index. He found that subjects had a predominantly realistic orientation toward health status. Approximately 68% of his longitudinal panel expressed subjective evaluations congruent with objective medical evaluations.

Type of sex linkage was operationalized as the "extent of femaleness" of the older adult-kin dyad with (1) representing father/son, brother/brother (2) representing father/daughter, brother/sister (3) representing mother/son, sister/brother and (4) representing mother/daughter, sister/sister. This item was dummied with mother/daughter, sister/sister as the referent.

Marital status was a measure of the status of the respondent at the time of the interview; single, married, separated/divorced, or widowed. This was a dummy variable with single status (single, separated/divorced, widowed) as the referent.

Number of children was the number of living children the respondent had who were natural, adopted, foster, or step children; scored one through four, respectively.

Association measured the frequency with which older adults and their siblings interacted in 13 activities: commercial, home, and outdoor recreation; visitation; vacations; family reunions; emergencies; working together; babysitting; holidays; church; shopping; and other (as listed by the respondents). Each response was coded one to nine according to nine levels of frequency ranging from never to daily. This measure was factor analyzed using the principal component factor analysis technique with varimax rotation. Only those items with a loading of at least .50 were included. Scores ranged from .50 to .93. This analysis resulted in six factors, reducing the number of items from 26 to 24. The reliability for the scale was .61 as determined by Cronbach's alpha. The first factor represented mutual recreational activities, for example, commercial, outdoor, and home. The second factor reflected obligatory activities and included visiting and emergencies. The third factor reflected miscellaneous activities for example, working together and other activities as suggested by the respondents. The fourth factor represented voluntary activities such as vacationing and shopping together. Factor five represented family activities which included family reunions and church. The sixth factor included only one variable, babysitting.

Communication by mail or telephone measured the frequency with which siblings wrote or telephoned one another.

Respondents were asked: "How often in the past year has your sibling telephoned and/or written you?" Responses ranged from never to daily (coded one to nine respectively).

CHAPTER IV

RESULTS

Descriptive Findings

As shown in Table 1, approximately 62% of the sample were female and 62% of the sample were married. Approximately 94% of the sample was white, and 5% black. The mean age of the respondents was 74 years and their mean educational level was 10 years. From a scale of 1 to 9, approximately 77% of the respondents reported average to good health (5 to 9). Most older adults were operatives (26%) with 22% being housewives and 15%, craftsmen. Other data showed the respondents indicated that they had enough income to always meet needs in 41% of the cases, enough income to usually meet needs in 41% of the cases, and seldom or never enough income to meet needs in 18% of the cases.

Demographic characteristics of children and siblings were compared in Table 2. The mean age for children was 44 years and for siblings, 69 years. Educational levels for children and siblings were 13 years and 10 years, respectively. Similar percentages of children and siblings were males and females: males, 49 and 47; and females, 51 and 53, respectively. The majority of children were professionals, housewives, and operatives; whereas for siblings the major occupations included operatives, housewives,

Table 1

Demographic Characteristics of Respondents^a

Characteristics	%
Sex	
Male	38.1
Female	61.9
Race	
White	94.3
Black	5.3
Other	.4
Marital status	
Married	61.9
Single (separated/widowed/divorced)	38.1
Occupation	
Operative	25.5
Housewife	21.5
Craftsman	15.0
Professional	8.1
Other	29.9

(table continues)

Characteristics	%
Income	
Always enough	41.3
Usually enough	40.9
Seldom enough	8.9
Never enough	8.9
	Mean years
Age	73.9
Education	9.5

^aN=247.

Table 2

Demographic Characteristics of Children and Siblings^a

Characteristics	<u>Children</u>	<u>Siblings</u>
	%	%
Sex		
Male	49.0	47.0
Female	51.0	53.0
Occupation		
Professional	18.8	9.9
Housewife	13.1	19.3
Operative	12.2	20.2
Craftsman	11.4	11.9
Clerical	11.0	5.8
Other	33.5	32.9
Residential propinquity		
Same house	4.9	1.2
10 minutes	13.2	29.8
11-30 minutes	12.3	29.8
31-60 minutes	17.6	15.1
60 minutes-day	43.0	17.6
One day or more	9.0	6.5

(table continues)

Characteristics	<u>Children</u>	<u>Siblings</u>
	%	%
Sex linkage		
Father/son	19.6	
Father/daughter	18.4	
Mother/son	29.8	
Mother/daughter	32.2	
Brother/brother		21.3
Brother/sister		17.2
Sister/brother		25.8
Sister/sister		35.7
	<u>Children</u>	<u>Siblings</u>
	Mean years	Mean years
Age	44.2	69.3
Education	12.8	9.9

^aN=247.

and craftsmen. Approximately 30% of the older adults were within one-half hour of their children while 61% lived within this proximity of siblings of most contact. With regard to sex pairs among parents and children, 48% were cross-sex pairs, 20% were father/son, and 32% were mother/daughter. The sex linkages for older adults and their siblings were: 43% were cross-sex pairs, 21% were brother/brother, and 36% were sister/sister (see Table 2).

The activities in which older adults and their children and siblings were engaged are shown in Table 3. Parents and children engaged in the following activities at least once or more a year: happy occasions (85%); visitation (82%); church (53%); family reunions (46%); shopping (44%); home recreation (42%); emergencies (34%); vacations (23%); outdoor recreation (21%); and commercial recreation (19%). Activities in which respondents and siblings participated in most often included visitation (69%); happy occasions (54%); family reunions (41%); emergencies (23%); home recreation (22%); and church (18%).

The types of help given and received between respondents and their children and siblings at least once or more a year are shown in Table 4. Help given most often by the older adults to their children included: transportation (24%); decision-making (20%); help in illness (17%); shopping (15%); and household repairs (10%). Help given to siblings included: transportation (13%); help in illness

Table 3

A Comparison of Activities Done by Respondents with Their
Children and Siblings of Most Contact One or More Times in
the Past Year^a

Activity	<u>Children</u>	<u>Siblings</u>
	%	%
Happy Occasions	85.2	53.9
Visitation	81.6	69.0
Church	52.9	18.2
Family reunion	46.3	41.4
Shopping	43.5	13.1
Home recreation	41.8	21.6
Emergency	33.6	23.4
Vacation	23.3	10.7
Outdoor recreation	20.9	10.3
Commercial recreation	18.5	4.9
Babysitting	10.7	0.0
Working together	4.2	2.5

^aN=247.

Table 4

A Comparison of Help Given to and Received from Children and Siblings of Most Contact One or More Times in the Past Year^a

Helping Behavior	<u>Children</u>	<u>Siblings</u>
	%	%
<hr/>		
Given		
Transportation	23.5	13.0
Decision-making	20.2	6.5
Help in illness	16.5	9.3
Shopping	14.8	6.9
Household repairs	10.3	1.6
Housekeeping	7.4	2.8
Financial aid	7.4	2.4
Yardwork	7.4	2.0
Car care	5.4	2.0
Other	1.2	1.0
Legal aid	.8	.8
Received		
Transportation	59.9	20.1
Help in illness	43.2	10.5
Decision-making	41.6	7.7
Shopping	39.1	4.5
Household repairs	34.3	7.2

(table continues)

Helping Behavior	<u>Children</u>	<u>Siblings</u>
	%	%
Housekeeping	29.0	2.0
Yardwork	27.6	1.6
Car care	17.8	1.2
Legal aid	9.5	.8
Financial aid	7.9	1.6
Other	0.0	0.0

^aN=247.

(9%); shopping (7%); and decision-making (7%). Help received most often from children included: transportation (60%); help in illness (43%); decision-making (42%); shopping (39%); household repairs (34%); housekeeping (29%); and yardwork (28%). Help received most often from siblings included transportation (20%); illness (11%); decision-making (8%), and household repairs (7%).

Inferential Findings

A comparison of the results for Bengtson et al. (1976) propositions for older adults and their siblings and parents and children is shown in Table 5. Results from the analyses of the first set of hypotheses showed all four to be supported.

Bengtson and Associates' Model for Parents and Children

H_1 : Helping behavior among older adults and their children of most contact is positively associated with residential propinquity.

This proposition was supported. Approximately 12% of the variance in helping behaviors was explained by residential propinquity [$R^2=.12$, $F(1,229)=31.07$, $p<.0001$]. The Beta weight for residential propinquity was .35, $t=5.57$, $p<.0001$. The nearer the residences between respondents and children, the greater amount of helping behaviors exchanged.

H_2 : The effect of residential propinquity upon helping behavior is influenced by the type of sex linkage.

Table 5

A Comparison of the Regression Results of Bengtson, Olander,
and Haddad's Propositions

Propositions	<u>Children^a</u>			<u>Siblings^b</u>		
	<u>R²</u>	<u>B</u>	<u>t-value</u>	<u>R²</u>	<u>B</u>	<u>t-value</u>
Helping behavior						
via residential						
propinquity	.12	.35	5.57****	.08	-.28	-4.50****
Helping behavior						
via residential						
propinquity						
through sex						
linkage	.17					
Father/son		-.27	-3.95****			
Father/daughter		-.13	-1.93*			
Mother/son		-.21	-3.01**			
Brother/brother				.08	-.08	-1.09
Brother/sister					-.09	-1.32
Sister/brother					.02	.22

(table continues)

Propositions	<u>Children</u> ^a			<u>Siblings</u> ^b		
	<u>R</u> ²	<u>B</u>	<u>t</u> -value	<u>R</u> ²	<u>B</u>	<u>t</u> -value
Helping behavior						
via residential						
propinquity						
through filial/						
familial						
responsibilities	.13	.13	2.11*	.08	.06	.92
Helping behavior						
dependency needs	.02	-.15	-2.29*	.00	-.08	-1.22

^aN=230.

^bN=236.

*p<.05

**p<.01

***p<.001

****p<.0001

This proposition was supported with an \underline{R}^2 of .17 ($\underline{F}(4,225)=12.55$, $\underline{p}<.0001$) and with an \underline{R}^2 change of .06 (significant F change, $\underline{p}<.0007$). The Beta weights were as follows: father/son ($\underline{B}=-.27$, $\underline{t}=-3.95$, $\underline{p}<.0001$); father/daughter (when the father was the respondent) ($\underline{B}=-.13$, $\underline{t}=-1.93$, $\underline{p}<.05$); and mother/son (when the mother was the respondent) ($\underline{B}=-.21$, $\underline{t}=-3.01$, $\underline{p}<.003$). Living close to one another became more important to mutual help between parents and children when the sex linkage was mother/daughter.

H₃: The effect of residential propinquity upon helping behavior is increased by the amount of filial responsibility.

This proposition was supported with an \underline{R}^2 of .13, $\underline{F}(2,227)=10.72$, $\underline{p}<.0001$ and an \underline{R}^2 change of .02 (significant F change, $\underline{p}<.04$). The Beta weight for filial responsibility was .13, $\underline{t}=2.11$, $\underline{p}<.04$. Living close to one another became more important to mutual help between parents and children when there were feelings of filial responsibility.

H₄: Intergenerational helping behavior is increased by dependency needs of the elderly.

This proposition was supported. Two percent of the variance in helping behaviors was explained by dependency needs of the respondents [$\underline{R}^2=.02$, $\underline{F}(1,231)=5.29$, $\underline{p}<.02$]. The Beta weight for dependency needs was $-.15$, $\underline{t}=-2.29$,

$p < .02$. The poorer the respondents' health the greater the amount of helping behaviors given to and received from children.

Bengtson and Associates' Model for Older Adults and their Siblings

The analysis for the same propositions for older adults and their siblings showed that none of the hypotheses was supported.

H₅: Helping behavior among older adults and their siblings of most contact is positively associated with residential propinquity.

This proposition was not supported. Although the \underline{R}^2 was significant: $\underline{R}^2 = .08$ [$F(1,235) = 20.28$, $p < .0001$], the Beta weight for residential propinquity was in the negative direction: $\underline{B} = -.28$, $\underline{t} = -4.50$, $p < .0001$. The results showed that the further away older adults and siblings lived from each other the more help exchanged between them.

H₆: The effect of residential propinquity upon helping behavior is influenced by the type of sex linkage.

This proposition was not supported. The \underline{R}^2 was .08, $F(4,231) = 5.95$, $p < .0001$, with an \underline{R}^2 change of .01 (significant F change, $p < .36$). The Beta weights for the sex link pairs were as follows: brother/brother ($\underline{B} = -.08$, $\underline{t} = -1.09$, $p < .27$); brother/sister ($\underline{B} = -.09$, $\underline{t} = -1.32$, $p < .19$); sister/brother ($\underline{B} = .02$, $\underline{t} = .22$, $p < .83$). Sex linkage did not influence the effect of residential propinquity on helping behaviors.

H₇: The effect of residential propinquity upon helping behavior is increased by the amount of familial responsibility.

This proposition was not supported. The \underline{R}^2 was .08, $\underline{F}(2,232)=10.59$, $p<.0001$, with an \underline{R}^2 change of .003 with a significant F change of $p<.36$. The Beta weight for familial responsibility was .06, $t=.92$, $p<.36$. Familial responsibility did not increase the effect of residential propinquity on helping behaviors.

H₈: Intragenerational helping behavior is increased by the dependency needs of the elderly.

This proposition was not supported. The \underline{R}^2 was .002 [$\underline{F}(1,236)=1.49$, $p<.22$]. The Beta weight for dependency needs was $-.08$, $t=-1.22$, $p<.22$. The state of older adults' health did not significantly increase help exchanged.

Alternative Model for Older Adults and their Siblings

Due to the inability of the stated propositions to adequately explain the helping relationship among older adults and their siblings, the model was expanded. First, a multiple regression analysis utilizing Bengtson's et al. (1976) posited variables was tested. The results showed that when all variables were entered into the equation, residential propinquity was the only significant contributor to helping behavior, explaining 8% of the variance [$\underline{R}^2=.08$, $\underline{F}(4,227)=4.16$, $p<.001$]. In order to increase the amount of

explained variance in helping behaviors, the model was expanded to include additional variables determined in the literature to be significant contributors to sibling helping patterns (Figure 1). When three additional variables, marital status, number of children of the older adult, and association were entered into the equation, the analysis showed a significantly greater amount of explained variance in helping behaviors: $R^2=.30$, $F(9,206)=11.35$, $p<.0001$. Variables explaining a significant amount of variance in helping behaviors were association, marital status, and number of children of the older adult (see Table 6). Greater helping occurred among single older siblings, with few or no children, who engaged in activities with one another.

As a result of association being a significant contributor to helping behaviors among siblings and the subsequent implications for nonrecursive models, two-stage least squares was utilized. The multiple regression analysis to determine predictors of association showed that 22% of the variance could be explained by four variables: residential propinquity, communication by mail or telephone, familial responsibility, and dependency needs of the older adult [$R^2=.22$, $F(8,208)=8.57$, $p<.0001$] (see Table 7 and Figure 2). Greater association occurred with close proximity, frequent communication, good health, and feelings of familial responsibility.

Table 6

Significant Contributors to Mutual Help Among Older
Adults and Their Siblings: The Expanded Model^a

Variables	<u>B</u>	<u>t</u> -value
Association	.51	7.92***
Number of children		
of older adult	-.18	-3.13**
Marital status of		
older adult	-.13	-1.97*
Residential propinquity	-.07	-1.04
Dependency needs	-.05	-.91
Familial responsibility	.02	.43
Sex linkage		
Brother/brother	.00	.05
Brother/sister	.02	.23
Sister/brother	.01	.08

$$\underline{R}^2 = .30, F(9, 206) = 11.35***$$

^aN=215.

*p < .05

**p < .01

***p < .0001

Table 7

Significant Contributors to Activities Done Together Among
Older Adults and Their Siblings^a

Variables	<u>B</u>	<u>t</u> -value
Residential propinquity	-.40	-6.56***
Communication by mail		
or telephone	.18	2.88**
Dependency needs	.14	2.33*
Familial responsibility	.12	1.91*
Sex linkage		
brother/brother	.00	.04
brother/sister	-.02	-.27
Sister/brother	.05	.66
Marital status	.00	.02
$\underline{R}^2 = .22, \underline{F}(8, 208) = 8.57***$		

^aN=216.

*p < .05

**p < .01

***p < .001

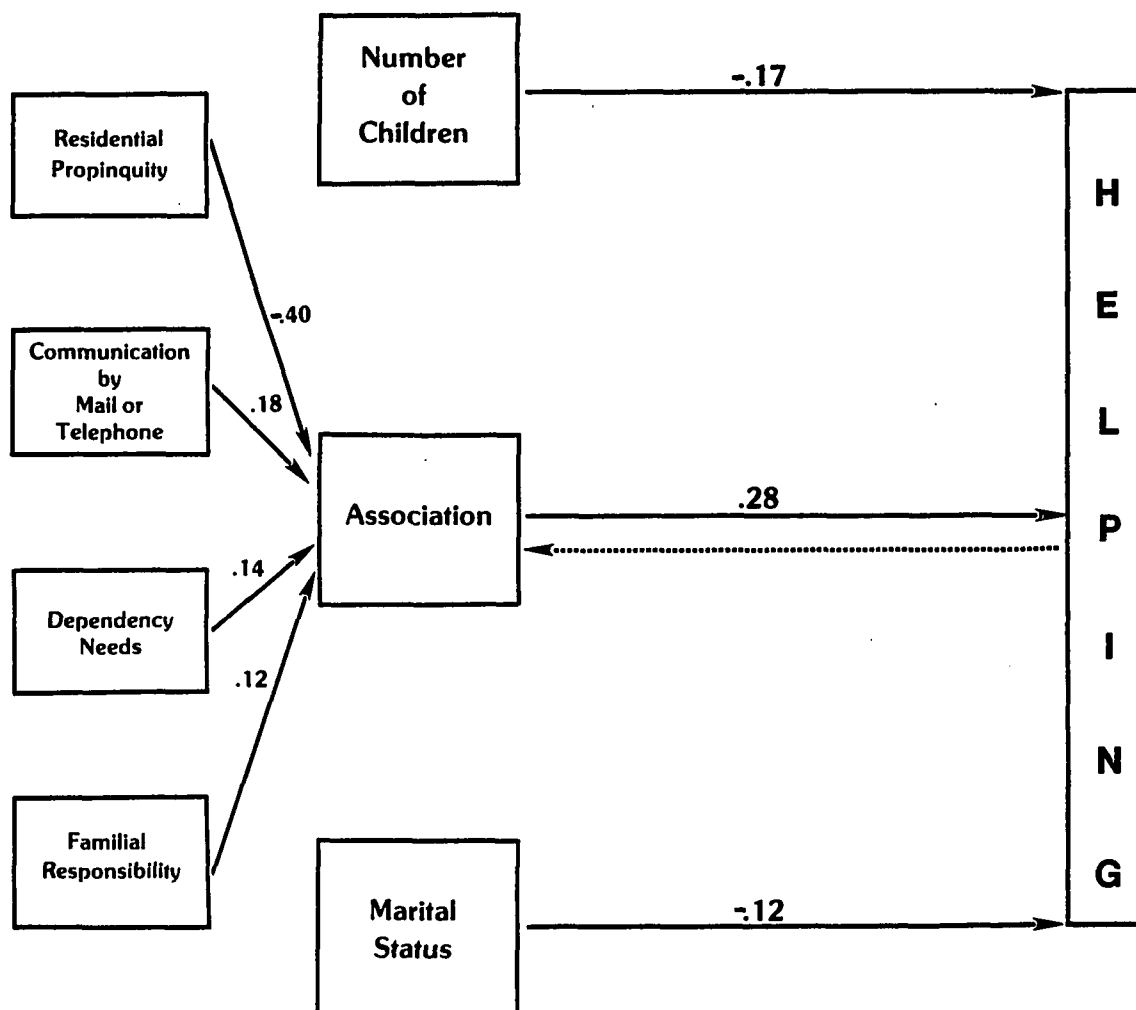


Figure 2. A graphic presentation of the alternative model (utilizing two-stage least squares) for older adult and sibling mutual help.

The first stage of the two-stage least squares yielded a new variable, predicted association, purging correlation of association with the error term. The second stage, which utilized the estimated value of association (predicted association) as an independent variable and entered the other two predictors (number of children and marital status of the older adult), showed that the effects of these three exogenous variables (association, number of children, and marital status, respectively) on helping behavior were significant: $R^2=.17$, $F(3,220)=15.03$, $p<.0001$ (see Table 8 and Figure 2). When respondents had few children, engaged in joint activities with their siblings, and were unmarried, there was greater exchange of helping behaviors among siblings. As shown in Table 9, the Beta weights for number of children and marital status remained approximately the same. The Beta weight for association decreased from .51 to .28, however, the significance level remained the same.

Table 8

Contributors to Mutual Help Among Older Adults and
Their Siblings as Determined by a Two-stage Least Squares^a

Variables	<u>B</u>	<u>t</u> -value
Predicted association	.28	5.24***
Number of children of older adult	-.17	-3.24**
Marital status of older adult	-.12	-2.29*

$$\underline{R}^2 = .17, \underline{F}(3, 220) = 15.03***$$

^aN=220.

*p < .05

**p < .001

***p < .0001

Table 9

A Comparison of the Expanded Model and Two-stage Least
Squares Analysis of Contributors to Mutual Help
Among Older Adults and Their Siblings

Variables	<u>Expanded Model^a</u>		Two-stage Least <u>Squares^b</u>	
	<u>B</u>	<u>t-value</u>	<u>B</u>	<u>t-value</u>
Association	.51	7.92***	.28	5.24****
Number of children				
of older adult	-.18	-3.13**	-.17	-3.24***
Marital status	-.13	-1.97*	-.12	-2.29*
Residential				
propinquity	-.06	-1.04		
Dependency needs	-.05	-.91		
Familial				
responsibility	.02	.43		
Sex linkage				
Brother/brother	.00	.05		
Brother/sister	.02	.23		
Sister/brother	.01	.08		
$\underline{R}^2 = .30, \underline{F}(9, 206) = 11.35****$ $\underline{R}^2 = .17, \underline{F}(3, 220) = 15.03****$				

(table continues)

^aN=215.

^bN=223.

*p<.05

**p<.01

***p<.001

****p<.0001

CHAPTER V

SUMMARY, DISCUSSION, AND CONCLUSIONS

Summary

The literature suggests that factors contributing to intergenerational helping are similar and possibly the same as those contributing to intragenerational helping. The purpose of the present study was twofold: (a) to determine if an intergenerational model of family helping for older adults and children would explain intragenerational helping as seen through older adults and siblings; and (b) to empirically construct a model representative of mutual help patterns between older adults and their siblings [utilizing Bengtson's et al. (1976) variables and additional variables as determined in the literature to be significant contributors to sibling helping patterns]. The factors residential propinquity, dependency needs, sex linkage, and filial/familial responsibility were hypothesized to have a significant relationship with mutual help between older adults and children and older adults and siblings (direct influence by residential propinquity and dependency needs, and indirect influence by filial responsibility and sex linkage through residential propinquity). Higher levels of mutual help were expected when older adults and children and older adults and their siblings lived close to one another and the

respondents had poor health. Close proximity to parents and/or siblings was hypothesized to become even more important to mutual help when the sex linkage was female and also when the respondents expected a great deal of help.

The sample for the study ($N=247$) represented all respondents from an earlier data base who had one or more children and one or more siblings. The original data base included older adults ($N=321$), 65 years and older, selected by a compact cluster sampling technique from a rural transitional area in the Piedmont plain of North Carolina. The data were collected by personal interviews administered by trained interviewers.

Three analyses were performed on the data. In the first analysis the hypotheses or propositions, as stated by Bengtson et al. (1976), were tested using multiple regression analyses. The second analysis, which involved an expansion of Bengtson's et al. model, used a multiple regression analysis utilizing Bengtson's et al. variables and three additional variables: association, number of children, and marital status of the older adult, as determined by the literature. The third analysis was a refinement of the expanded model (an adjustment for the simultaneity between association and mutual help) and was completed with a two-stage least squares analysis.

The finding showed that factors contributing to mutual help between older adults and children differed from those

contributing to mutual help between older adults and siblings. One exception was residential propinquity, however, the direction of its influence was different for siblings. Whereas close proximity fostered mutual help between adults and children, distant proximity was associated with more exchange among adults and siblings. The data showed that when three additional variables from the literature (marital status, number of children of the older adult, and association), were included in the regression analysis along with the original variables in Bengtson's et al. model, a greater amount of variance in intragenerational helping behaviors could be explained. Helping behaviors were increased when older adults were single, had few resources, for example, children, and engaged in social activities with their siblings. As a result of association being a contributor, creating simultaneity between association and mutual help (nonrecursive model), a two-stage least squares analysis was utilized to adjust for this simultaneity and to eliminate a correlation between association and the error term. The adjustment in this analysis did not decrease the significance of social contact and absence of resources (children and spouses) as important influences on the helping relationship between siblings.

The findings of the present investigation raise several points for discussion and recommendations for future research.

Discussion

Results of this study suggested only modest to low mutual help between older adults and their siblings. Help exchanged, such as transportation, decision-making, and help in illness, was usually of the essential type. The data showed, however, that the amount of help given and received could be predicted by several social characteristics of the respondents. Predictors of mutual help between siblings differed from those between adults and children.

Adult/Child, Adult/Sibling Differences

Factors contributing to adults' and children's helping behaviors in general did not contribute to adults' and siblings' mutual help. This finding challenges the generalization made by Bengtson et al. as well as the literature in general regarding mutual help among siblings.

Proximity. Of the variables investigated, proximity was the only one consistently related to mutual help between adults and children and older siblings. When parents live close to their children greater mutual helping takes place; whereas, the further away siblings live from one another the greater the help exchanged. The finding that close proximity to children and far proximity to siblings is associated with more help is probably related to the difference in type of help exchanged and frequency of association. Adults and children usually exchanged help such as transportation, help in illness, decision-making, shopping, household

repairs, housekeeping, yardwork, and car care. The majority of these types of aid would necessitate close proximity, and perhaps, frequent association. Siblings, on the other hand, exchanged transportation, help in illness, decision-making, and household repairs, and perhaps exchanged these helps when they travelled in for special occasions such as family reunions, birthdays, and visitation, which were the most frequent types of association.

Further differences could be observed between children and siblings with regard to the factors impacting proximity. Whereas the sex of the parent-kin link heightens the importance of proximity in helping patterns between adults and children, it does not with siblings. Proximity becomes more important to helping behavior between adults and children when the helping is between mothers and daughters. This supports findings by Adams (1968) and Allan (1977) that females are more involved in kin-keeping than males. Daughters have been found to settle closer to their parents (Adams, 1968) and therefore are more likely to engage in mutual help. The nature of the mother-daughter relationship may also have implications for helping. According to Troll (1971), reciprocity between mothers and daughters is based on sharing and affection. Mothers and daughters possibly have more shared activities as a result of similar interests. This sharing of interests and activities may strengthen their relationship and thus lead to greater

helping. This finding, however, does not hold true for siblings which supports Scott's (1983) findings and may be related to a time lag between studies. In the eight or more years since Adams' and Allan's studies, changes in attitudes toward sex roles in specific areas may have taken place. For example, siblings may no longer depend upon females to maintain their kinship relations.

Differences were also found between adults and children and adults and siblings with respect to the effect that expectations for family assistance had on proximity. Close proximity to children along with expectations of children increases mutual help significantly. This finding may be related to the fact that the present study included only the adults' perception of children's responsibility to parents in general. Living close together may heighten parents' expectations with regard to children's obligation toward them. This relationship between familial responsibility and proximity did not hold true for siblings, which supports Adams' (1968) finding that a feeling of general obligation is not dominant in the sibling relationship. Adults' perceptions of children's obligations may be greater than those that they hold for siblings because of the nurturance and support they have given to their children over the years. The expectations for feelings of obligation are therefore instilled within children and encouraged.

Siblings, on the other hand, may not develop these same kinds of feelings of obligation toward one another.

Data showed that when other factors were considered, how close by siblings live has little importance on helping. The decrease of proximity's influence may be due to a correlation between proximity and association. For example, other analyses showed residential proximity was directly related to association between siblings. The overall effect of these observations was that proximity was important for siblings in terms of their social activities with one another but not in terms of mutual help. It is also possible that a correlation exists between proximity and number of children. The more children there are the greater the chances of having at least one child living nearby with whom to exchange help.

Dependency needs. Apparently dependency needs in later life are more likely to elicit mutual help with more primary kin such as children than with secondary kin such as siblings. Poor health, for example, stimulates greater mutual help with children than with siblings. This finding is supported by Kivett (1985) and Stoller (1983). They found that the amount of help exchanged between generations was influenced by the health of older adults. Siblings, having the awareness of the older adults' children along with the obligation these children have to their parents,

may be less inclined to respond to one another's health needs.

Explaining Mutual Help Between Siblings in Later Life

Although intergenerational variables provided a poor explanation for helping among siblings, another model was found to explain a sizeable amount of mutual help. The variables included: association, number of children, and marital status of the older adult.

Association. The extent to which siblings get together socially has a significant impact on mutual help. The present study showed that helping behaviors increase with physical contact with siblings. The more activities older adults and their siblings engage in together, the greater the mutual help among them. In other words, a social behavior is directly correlated with a support behavior. Other studies lend support to this finding. For example, Scott's (1983) findings suggested an important relationship between association and helping. She found that contact was maintained between siblings and older adults, and most older adults saw siblings as persons they could turn to for assistance. These findings suggest the importance of nurturing activities such as visitation, gathering for special occasions (family reunions), and happy occasions (birthdays) because of their importance to the support system of siblings in later life.

A finding incidental but important to the present study was the observation of the role association plays both as a presumed cause and a presumed effect in studies of intra-generational relationships. Because of the importance of association to mutual help, it is useful to understand factors precipitating association within the sibling relationship. Four variables (proximity, dependency needs, communication by mail or telephone, and familial responsibility), three of which were hypothesized to directly contribute to mutual help among siblings (proximity, dependency needs, familial responsibility), worked through association in explaining mutual help among siblings. Close proximity to siblings, good health of the respondent, contact with siblings through writing or by telephone, and the respondents' perceptions of siblings' obligations resulted in increased social contact between them. The importance of proximity to association supports the findings of Bott (1957), Reiss (1962), and Scott (1983). However, the direction of its influence does not support their conclusions. In other words, the further away siblings live from one another, the more activities they engage in with one another. When distances are great siblings may make a special effort to be a part of certain activities, for example, visitation and special occasions (family reunions and birthdays) which contain elements of obligation in the sense that they more or less enforce contact. Findings from

the present study also support the importance of indirect contact to association. Studies by Litwak (1965) and Bengtson et al. (1976) found that communication by mail or telephone contributes significantly to association among siblings. Health, too, influences association. As Bild and Havighurst (1976) found, dependency needs of the elderly help to determine whether or not siblings will engage in an activity with one another. In the present study, the healthier the respondents, the more activities they engage in with their siblings. Familial responsibility also influences association. The expectations that older adults held for siblings' obligations increased their physical contact with one another. This result confirms Adams' (1968) finding that, although feelings of obligation were not dominant among siblings, a general obligation to keep in touch was an important aspect of their relationship.

Number of Children. Siblings appear to be a viable support to one another in old age when there is a limited number of children. Kivett (1985) and Scott (1983) found that older siblings come to the aid of one another when more primary supports, for example children, are not available. Children tend to be the first kin in line to whom parents turn for support (Adams, 1968; Allan, 1977; Cicirelli, 1983a; Scott, 1983; Shanas, 1979). Results of this study show that when this resource is not present older adults may then look to siblings for support.

Marital Status. Being single in later life serves as a stimulus for support from siblings. In other words, when older adults are either single, divorced, widowed, or separated, brothers and sisters are more likely to exchange help. When persons are single, they are not only freer to give assistance but also more likely to need assistance. Rosenberg and Anspach (1973) and Shanas (1973) found that single older adults have greater contact and express greater closeness with one another than married older adults. Studies by Cantor (1979) and Lopata (1978), however, show contrasting results. According to these studies, siblings were not significant contributors to the support system of widows. Several possibilities for the differences in these findings and the present study could be the geographical area, the groups sampled, and the way in which the marital variable was analyzed. Cantor's and Lopata's studies were in urban areas, with Cantor's sample being ethnic and of lower socioeconomic status. The reasons for lack of kin support in larger urban areas may have been due to siblings living too far away and more services being provided in the urban areas. In Cantor's ethnic study, there were no local siblings available for support. The present study was in a rural/transitional area where services for the elderly were not as abundant and there was considerable proximity to a sibling. Another difference between the studies was the way in which the marital status variable was structured. Cantor

and Lopata looked only at those persons widowed; whereas, the present study looked at persons widowed as well as separated/divorced. The addition of the category, separated/divorced in the present study, may have increased the relative importance of marital status to mutual help among siblings.

Theoretical Implications

The intragenerational helping model as portrayed in the present study has important theoretical implications. Findings from the present study show that models used to discuss intergenerational relationships do not adequately describe intragenerational relationships, particularly in the area of mutual help. Intergenerational helping, in support of Bengtson's et al. propositions, are affected by close proximity, femaleness of the pair, health needs, and adults' expectations for assistance, whereas, upon expansion of the model for siblings, intragenerational helping is more influenced by social support variables: activities done together, absence of other resources such as children, and single status. Variables which are direct contributors to helping behaviors between older adults and children are found to be direct contributors to association among siblings. Overall, the support network of older adults and their siblings depends to a large extent on the maintenance of the activity level between them.

Siblings share a common past and are relatively close in age which could enhance similar likes and dislikes in terms of social activities. In turn, getting together for these activities may strengthen and solidify their relationship thereby contributing to siblings' willingness to provide assistance for one another in later life. Future models of intragenerational relations must take into account the importance of social contact between siblings in matters of mutual assistance.

In summary, data from the present study suggest that the theoretical framework for intergenerational mutual help is inadequate in describing intragenerational mutual help. Therefore, a separate theoretical framework is needed in the explanation of intragenerational helping behaviors, at least those in context of the sibling relationship.

Conclusions

Based upon the findings of the present study, the following conclusions may be made concerning mutual help among siblings.

1. Factors contributing to intragenerational helping differ from those factors contributing to intergenerational kin support.

2. Intragenerational helping can be better explained through social contact with one another, and absence of other resources, for example, children and spouses, than

through variables traditionally associated with inter-generational helping.

3. Major variables found to contribute to inter-generational helping (residential propinquity, dependency needs, communication by mail or telephone, and filial/familial responsibility), generally contribute to intra-generational association. The sex link variable, however, is an exception. Whereas sex linkage is a direct contributor to intergenerational helping, it is not a contributor to intragenerational helping or association.

4. Proximity to siblings, although an important factor in mutual help, becomes less important when the amount of social contact between siblings, and resources, for example, spouses and children, are considered.

Recommendations for Future Research

Future research in intragenerational help exchange should place considerable emphasis on improving the mutual help scale. Future studies utilizing this scale should look for ways to unmask the extent of mutuality or reciprocity within dyads, thus enabling the distinction of a high giver or high receiver of assistance. The measure association is also in need of improvement. Unreliability in the measure resulted in problems of inconsistency.

The present study points to the importance of the continued use of multivariate analyses in intragenerational studies. This was evidenced by the correlations that

existed between residential propinquity, association, and number of children of the older adult. Univariate analyses would not adjust or control for this type of relationship and thus give a distorted picture. Multivariate analyses are critical in complex studies such as this one.

A number of areas are still in need of investigation with regard to intragenerational helping among siblings. These include: the inclusion of responses from the kin in focus; a comparison of racial groups (the present study only had 5% blacks); an inclusion of marital and health status of siblings in models; and a closer investigation of the relationship between association and helping among adults and children as compared to that of adults and siblings.

In conclusion, the fact that the sibling relationship was different from the parent-child relationship in helping leads to the possibility that it may also be distinct in family solidarity and other areas. Thus, predictors, other than those traditionally associated with intergenerational helping, need to be studied with regard to intragenerational helping. The use of a separate theoretical model for intragenerational relationships could do much to further effective research into the sibling relationship.

BIBLIOGRAPHY

- Adams, B. N. (1968). Kinship in an urban setting. Chicago: Markham.
- Aldous, J., & Hill, R. (1965). Social cohesion, lineage type, and intergenerational transmission. Social Forces, 43, 471-482.
- Allan, G. (1977). Sibling solidarity. Journal of Marriage and the Family, 39, 177-184.
- Atchley, R. C. (1977). The social forces in later life. California: Wadsworth Publishing, Co., Inc.
- Barr, A. J., Goodnight, J. H., Sall, J. P., Blair, W. H., & Chilko, D. M. (1976). SAS user's guide. Raleigh: North Carolina: SAS Institute, Inc.
- Bengtson, V. L., Olander, E. B., & Haddad, A. (1976). The "generation gap" and aging family members: Toward a conceptual model. In J. F. Gubrium (Ed.), Time, roles, and self in old age. New York: Human Sciences Press.
- Bild, B. R., & Havighurst, R. J. (1976). Senior citizens in great cities. The Gerontologist, 16, 63-69.
- Blau, Z. S. (1973). Old age in a changing society. New York: Franklin Watts.
- Blenkner, M. (1965). Social work and family relationships in later life with some thoughts on filial maturity. In E. Shanas, & G. F. Streib (Eds.), Social structure and the family: Generational relations. Englewood Cliffs: Prentice-Hall.
- Bott, E. (1957). Family and social network. London: Tavistock Publications, Ltd.
- Brody, E. (1981). Women in the middle and family help to older people. The Gerontologist, 21, 471-480.
- Brody, E., Poulshock, W., & Masciocchi, C. (1978). The family caring unit: A major consideration in long-term care. The Gerontologist, 18, 556-561.

- Brubaker, T. (1983). Introduction. In Matilda Riley, Beth Hess, & Kathleen Bond (Eds.), Aging in society: Selected reviews of recent research. New Jersey: Lawrence Erlbaum Associates, Publishers.
- Cantor, M. H. (1979). The informal support system of New York's inner city elderly: Is ethnicity a factor? In D. E. Gelfand and A. J. Kutzik (Eds.), Ethnicity and aging. New York: Springer.
- Cherlin, A. (1983). A sense of history: Recent research on aging and the family. In M. Riley, B. Hess, and K. Bond (Eds.), Aging in society: Selected reviews of recent research. New Jersey: Laurence Erlbaum Associates, Publishers.
- Cicirelli, V. (1983a). A comparison of helping behavior to elderly parents of adult children with intact and disrupted marriages. The Gerontologist, 23, 619-625.
- Cicirelli, V. (1983b). Adult children's attachment and helping behavior to elderly parents: A path model. Journal of Marriage and the Family, 45, 815-825.
- Cicirelli, V. (1980). Sibling relationships in adulthood: A lifespan perspective. In L. Poon (Ed.), Aging in the 1980s. Washington, DC: American Psychological Association.
- Cicirelli, V. (1979). Social services for elderly in relation to the kin network. Final report to NRTA-AARP Andrus Foundation, Washington, DC.
- Cumming, E. D., & Schneider, C. M. (1961). Sibling solidarity: A property of American kinship. American Anthropologist, 63, 498-507.
- Feldman, H. (1964). Development of husband-wife relationships. Preliminary Report. Cornell Studies of Marital Development: Study in the transition to parenthood. New York: Cornell University.
- Gelfand, D. E., Olsen, J. K., & Block, M. R. (1978). Two generations of elderly in the changing American family: Implications for service. The Family Coordinator, 27, 395-403.
- Godwin, D. D. (1984). Simultaneous equations methods in family research. Journal of Marriage and the Family, 46, 9-22.

- Gouldner, A. (1960). The norm of reciprocity: A preliminary statement. American Social Review, 25, 161-178.
- Hagestad, G. (1981). Problems and promises in the social psychology of intragenerational relations. In R. Fogel, E. Hatfield, S. Krieder, & J. March (Eds.), Stability and change in the family. New York: Academic Press.
- Haraven, T. (1978). Dynamics of kin in an industrial community. American Journal of Sociology, 84, 151-181.
- Hess, B. B., & Waring, J. M. (1978). Changing patterns of aging and family bonds in later life. The Family Coordinator, 27, 303-314.
- Hill, R., Foote, N., Aldous, J., Carlson, R., & MacDonald, R. (1970). Family development in three generations. Cambridge, Massachusetts: Schenkman Publishing Co., Inc.
- Homans, G. C. (1950). The human group. New York: Harcourt Brace and Company.
- Horowitz, A. (1978). Families who care: A study of natural support systems of the elderly. Paper presented at the 31st Annual Scientific Meeting of the Gerontological Society, Dallas, November.
- Houser, B. B., & Berkman, S. L. (1984). Aging parent/mature child relationships. Journal of Marriage and the Family, 46, 295-299.
- Johnson, C. L., & Catalano, D. J. (1983). A longitudinal study of family supports to impaired elderly. The Gerontologist, 23, 612-618.
- Kerckhoff, A. C. (1965). Nuclear and extended family relationships: Normative and behavioral analysis. In E. Shanas, & G. Streib (Eds.), Social structure and family: generational relations. Englewood Cliffs, New Jersey: Prentice-Hall.
- Kivett, V. R. (1985). Consanguinity and kin level: Their relative importance to the helping network of older adults. Journal of Gerontology, 40, 228-234.
- Kivett, V. R., & Atkinson, M. P. (1984). Filial expectations, association, and helping as a function of number of children among older rural-transitional parents. Journal of Gerontology, 39, 499-503.

- Lang, A. M., & Brody, E. M. (1983). Characteristics of middle-aged daughters and help to their elderly mothers. Journal of Marriage and the Family, 45, 193-202.
- Lebowitz, B. D. (1978). Statement on research into crimes against the elderly. Select Committee on Aging, U.S. House of Representatives, 95th Congress, Washington, DC.
- Lee, G. R., & Ihinger-Tallman. (1980). Sibling interaction and morale: The effects of family relations on older people. Research on Aging, 2, 367-391.
- Levi-Strauss, C. (1964). Reciprocity, the essence of social life. In R. L. Coser (Ed.), The family: Its structure and functions. New York: St. Martin's.
- Litwak, E. (1960). Occupational mobility and extended family cohesion. American Sociological Review, 25, 9-21.
- Lopata, H. Z. (1978). Contributors of extended families to support systems of metropolitan area widows: Limitations of the modified kin network. Journal of Marriage and the Family, 40, 355-375.
- Lopata, H. Z. (1973). Widowhood in an American city. Cambridge: Schenkman.
- Maddox, G. L. (1964). Self-assessment of health status. Journal of Chronic Diseases, 17, 449-460.
- Namboodiri, N. K., Carter, L. F., and Blalock, H. M. (1975). Applied multivariate analysis and experimental designs. New York: McGraw-Hill.
- North Carolina Agricultural Research Service (1979). Project 13644: Correlates and patterns of kin group solidarity among older rural and urban adults. North Carolina Agricultural Experiment Station, Department of Child Development and Family Relations, School of Home Economics, University of North Carolina at Greensboro.
- Nye, F., & Rushing, W. (1969). Toward family measurement research. In J. Hadden, & E. Borgatta (Eds.), Marriage and the family. Itasca: F. E. Peacock, Publishers, Inc.
- Parsons, T. (1949). The social structure of the family. In R. Anshen (Ed.), The family: Its function and destiny. New York: Harper.

- Pindyck, R. S., & Rubinfeld, D. L. (1981). Econometric models and economic forecasts. New York: McGraw-Hill Book Company.
- Reiss, P. J. (1962). The extended kinship system: Correlates of and attitudes on frequency of interaction. Marriage and Family Living, 24, 333-339.
- Riley, M. W., Foner, A., Moore, M. S., Hess, B., & Roth, B. K. (1968). Aging and society, vol. 1, New York: The Russell Sage Foundation.
- Rosenberg, G. S., & Anspach, D. F. (1973). Sibling solidarity in the working class. Journal of Marriage and the Family, 35, 108-113.
- Rosenmayr, L. (1978). A review of multigenerational relations in the family. Paper presented at the 9th World Congress of Sociology, Uppsala, Sweden.
- Rosow, I. (1967). Social integration of the aged. New York: Free Press.
- Ross, H., & Milgram, J. (1982). Important variables in adult sibling relationships: A qualitative analysis. In M. E. Lamb, & B. Sutton-Smith (Eds.), Sibling relationships: Their nature and significance across the lifespan. New Jersey: Erlbaum.
- Scott, J. P. (1983). Siblings and other kin. In T. Brubaker (Ed.), Family relationships in later life. Beverly Hills: Sage Publications.
- Seelbach, W. C. (1978). Correlates of aged parents' filial responsibility, expectations, and realizations. The Family Coordinator, 27, 341-349.
- Shanas, E. (1973). Family-kin networks and aging in cross-cultural perspective. Journal of Marriage and the Family, 35, 505-511.
- Shanas, E. (1979). The family as a social support system in old age. The Gerontologist, 19, 169-174.
- Shanas, E., Townsend, P., Wedderburn, D., Friis, H., Milhoj, P., & Stenhower, J. (1968). Old people in three industrial societies. New York: Atherton.
- Simos, B. (1970). Relations of adults with aging parents. The Gerontologist, 10, 135-139.

- SPSS Inc. (1983). SPSSX user's guide. New York: McGraw-Hill Book Company.
- Stoller, E. (1983). Parental caregiving by adult children. Journal of Marriage and the Family, 45, 108-114.
- Streib, G. F., & Thompson, W. E. (1960). The older person in a family context. In C. Tibbitts, (Ed.), Handbook of social gerontology. Chicago: University of Chicago.
- Suggs, P. K., & Kivett, V. R. (1984). The impact of daughters' employment on support given to older parents. (The Gerontologist, 24, Abstract No. 229).
- Sussman, M. B. (1983). Family relations, supports, and the aged. In W. Morris, & I. Baden (Eds.), Hoffman's daily needs and interests of older people. Illinois: Charles Thomas Publishers.
- Sussman, M. B. (1965). Relationships of adult children with their parents in the United States. In E. Shanas, & G. F. Streib (Eds.), Social structure and the family. California: Prentice-Hall.
- Sussman, M. (1976). The family life of old people. In R. Binstock, & E. Shanas (Eds.), Handbook of aging and the social sciences. New York: Nostrand Rheinhold.
- Sussman, M., & Burchinal, L. (1962). Kin family network: Unheralded structure in current conceptualizations of family functions. Marriage and Family Living, 24, 236-238.
- Sweetser, D. A. (1963). Assymetry in intergenerational family relationships. Social Forces, 41, 346-354.
- Thompson, L., & Walker, A. J. (1984). Mothers and daughters: Aid patterns and attachment. Journal of Marriage and the Family, 46, 313-322.
- Treas, J. (1977). Family support systems for the aged: Some social and demographic considerations. The Gerontologist, 17, 406-471.
- Troll, L. E. (1971). The family of later life: A decade review. Journal of Marriage and the Family, 33, 263-290.
- Troll, L., & Bengtson, V. (1979). Generations in the family. In W. R. Burr, R. Hill, F. I. Nye, & I. L. Reiss (Eds.), Contemporary theories about the family, vol. 1. New York: Free Press.

Troll, L., Miller, S., & Atchley, R. (1979). Families in later life. California: Wadsworth.

Weber, R., & Blenkner, M. (1975). The social service perspective. In S. Sherwood, (Ed.), Long-term care: A handbook for researchers, planners, and providers. New York: Spectrum Publishers, Inc.