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A review of loneliness: concept and definitions, determinants and consequences

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Introduction

The well-being of older adults in general, and their loneliness in particular, are important themes in recent discussions in the Western world. The social integration and participation of older adults in society are seen as indicators of productive aging, and the alleviation of loneliness forms part of policies aimed at achieving the goal of 'successful' aging. Discussions about loneliness date back to ancient times, when they were led by philosophers.¹⁻⁷ They wrote primarily about 'positive' loneliness. This positive type of loneliness – as indicated in the concept of 'Einsamkeit' used in German literature until 1945⁸ – is perceived to be related to the voluntary withdrawal from the daily hassles of life and oriented towards higher goals, such as reflection, meditation and communication with God. However, positive loneliness is not related to the concept of loneliness tackled in this paper, namely the manner in which individuals perceive, experience and evaluate the lack of communication with other people. The core elements of this concept are an unwelcome feeling of lack or loss of companionship, the negative, unpleasant aspects of missing certain relationships as well as missing a certain level of quality in one's relationships. The conceptualization and definitions of loneliness will be discussed in more detail in the following section, but it goes without saying that in our understanding of the phenomenon of loneliness, negative feelings of missing may also go hand in hand with positive facets. The negative aspects, however, are the most salient ones. This opinion is shared by a majority of social scientists, and also by philosophers.⁹⁻¹⁴

In conceptualizing loneliness, attention will be paid to loneliness as a phenomenon, which is rec-

ognizable within all age categories. However, in addressing the determinants of loneliness we shall concentrate exclusively on older adults and the oldest old because the types of determinants differ according to age categories and phases of life. In research focusing on the younger population, personality characteristics proved to be of primary importance. As far as older adults and the oldest old are concerned, circumstances such as the loss of the partner and deteriorating health are considered to be the most salient determinants of loneliness.¹⁵ It is for this reason that the literature about loneliness among adolescents¹⁶⁻¹⁸ and young adults¹⁹⁻²¹ will not be dealt with here.

Loneliness: conceptualization and definitions

Cognitive processes determine the way people evaluate the situation they are in. Perlman and Peplau^{22,23} took this as their starting point, in combination with attributional facets of the perceived personal control over the situation in which people are involved, when developing their definition of loneliness: 'Loneliness is the unpleasant experience that occurs when a person's network of social relationships is deficient in some important way, either quantitatively or qualitatively.' This definition treats loneliness as a unidimensional concept that varies primarily in its experienced intensity. Other researchers from the USA have developed similar definitions.²⁴ Also within the cognitive approach, but taking into account explicitly the values, norms and standards that prevail in a person's personal life and in the society in which he or she is involved, a definition has been developed by de Jong Gierveld^{25,26}:

Loneliness is a situation experienced by the individual as one where there is an unpleasant or inadmissible lack of (quality of) certain relationships. This includes situations in which the number of existing relationships is smaller than

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is considered desirable or admissible, as well as situations where the intimacy one wishes for has not been realized. Thus loneliness is seen to involve the manner in which the person perceives, experiences, and evaluates his or her isolation and lack of communication with other people.

This definition of loneliness conceptualizes loneliness as a multidimensional phenomenon. Three dimensions are distinguished.^{25,26} The first concerns the feelings associated with the absence of an intimate attachment, feelings of emptiness or abandonment. This so-called 'deprivation' component is the core of the concept. The second component refers to the time perspective (do people interpret their loneliness situation as being hopeless or as changeable and treatable; do they blame others or themselves for the situation they are in?). The third component involves different types of emotional aspects such as sorrow, sadness and feelings of shame, guilt, frustration and desperation.²⁷

Because of the negative (emotional) connotation – the social stigma – linked to the phenomenon of loneliness, people with deficiencies in their relationships do not always admit that they are lonely.^{28–30} Consequently, using direct questions making mention of the term 'loneliness' to investigate loneliness will result in underreporting. Both Russell, Peplau and colleagues^{31–33} and de Jong Gierveld and associates^{34,35} constructed loneliness-measuring instruments directly related to their conceptual ideas, and widely used in empirical research, without using the word loneliness. Both the UCLA scale^{27,36–40} and the de Jong Gierveld scale^{41–45} have been thoroughly tested, validated and evaluated.

Loneliness, social network size, and the network's functioning

Persons with a very small number of relationships are socially isolated but they are not necessarily lonely, and vice versa.^{46,47} The relationship between objective social isolation and subjective experiences of loneliness is mediated by factors such as the characteristics of the relationships that are available and of the relationships that are not (or no longer) available; the saliency of the relationships that are missed; the time perspective, and the possibilities one sees to upgrade and

enlarge one's network of relationships; personality characteristics such as shyness, social skills and assertiveness; and the concept of self. The subjective evaluation of the network is the intermediating factor between the descriptive, objective characteristics of the network and loneliness. Additionally, the social norms and values of a society concerning an optimal set of relationships may influence the risk of becoming lonely,^{48–53} as well as the personal capacities to adjust one's norms and values concerning an optimal set of relationships to changing circumstances.^{54–56} So, people can react to a situation of relational deficits in different ways, for example by resigning themselves to it or by attempting to change it. Typologies of adults based on these characteristics have been explored and investigated.^{25,57,58} Despite the absence of a direct link between social isolation and loneliness, many of the same factors are associated with both.

Marriage (the partner relationship) and the family belong to the major integrating structures of society. Other types of integrating structures are: church affiliation, participation in the labour force, volunteer work and membership of voluntary associations.⁵⁹ In addition to these structures, and connected to them, a network of intimate personal relationships will provide cohesion, a sense of belonging and protection against loneliness. Weiss⁶⁰ differentiated between loneliness of emotional isolation, stemming from the absence of an attachment figure, and loneliness of social isolation, stemming from the absence of community. In general, it is believed that each type of relationship fulfils specific functions for the alleviation of loneliness⁶¹ – although there is considerable overlap between kin and non-kin in the functions they perform⁶²: the partner^{20,63–66}; daughters and sons, grandchildren, siblings and other family members^{46,54,67–69}; friends^{40,66,70–75}; colleagues (in the labour market, and/or in volunteer work); and neighbours^{76,77} Realizing a heterogeneous network is thought to be a first step in guaranteeing individuals the benefits of belonging to a set of interlocking social structures.⁵⁴ However, it has to be underlined that the exchange of emotional and/or instrumental support within the realm of the network is a crucial indicator of the extent to which the network functions as a real cohesive mediating structure. The availability of a diversity of relationships, weakly *and* strongly supportive, proves to be important in reducing the likelihood

of loneliness. More supportive relationships indicate less loneliness⁷⁸; sometimes, emotional support is decisive; in other circumstances instrumental types of support are decisive.⁷⁹ We can conclude from exchange theories^{80,81} that people in a relationship will try to preserve the support equilibrium; relationships in which either too much or too little support is given run the risk of being terminated,⁸² although, particularly in the case of older people, reciprocity deficits do not simply lead to a termination of relationships and to loneliness.^{83,84}

Other determinants of loneliness

It is virtually impossible to identify the broad set of determinants of loneliness; the relationships are mostly of a reciprocal nature and mechanisms behind the interrelationships are difficult to disentangle. For example, the effects of health status (physiological and mental) on loneliness, in addition to the effects of social contacts and social support, have to be determined by longitudinal research, because it is possible that it is health that determines the degree of social integration, and so the extent of loneliness. At the same time, it is also possible that social integration and the absence of loneliness protect health; however, until now research in this field has mainly been of a cross-sectional nature.^{85–87} Several models have been developed to unravel the complex interrelationships between demographic, sociostructural, physiological and psychological factors underlying loneliness.^{23,25,26,88,89} However, the core element of each of the models is to examine how individuals build up and maintain heterogeneous networks including close intimates and more distant social contacts.

Membership of, the degree of participation in, and commitment to specific mediating social structures as means towards alleviating loneliness, are often regarded as first and foremost a matter of personal choice and the outcome of a person's individual strategy towards building and maintaining relationships.^{90–95} It is in the hands of older adults themselves to decide (jointly) whether, for example, they wish to (re)marry or cohabit, or whether to continue the co-residence or to split up. An individual or couple voluntarily *chooses* some combination of goods and domestic services (privacy, autonomy, companionship). In present-day Western Europe most people without partners

choose to live alone, apparently preferring privacy to the companionship of children or other kin; and the percentage of those living alone is still rising.^{96–99}

However, realizing a high-quality network of relationships and reducing the risk of loneliness is also related to the individual's personal and social resources and restrictions. Different types of constraints and resources have been distinguished¹⁰⁰:

- personal characteristics such as old age, a situation which often goes hand in hand with reduced access to mediating social structures^{73,88,101–104}
- Gender: (strong) differences between men and women are not usually found, after controlling for age, marital status, and household composition^{28,51,59,105}
- Partner and household composition: being without a partner – widowed, divorced, separated, never married – and living alone, or living with children, affects the risk of loneliness^{25,51,54,75,82,106–109}
- Health, including the situation of chronic, long-term or terminal illness^{50,59,106,110–112}
- Situational restrictions, such as an urban versus rural community of residence^{113,114}
- The specific characteristics of the older adult's family and non-family relationships: the divorce of a child or long-term illness of the partner
- Socio-cultural constraints, the norms and values that regulate the self-definition and role conception of older men or women. Additionally, personal constraints related to the social skills of the person involved – low self-esteem, powerlessness, feelings of rejection, expectations about personal efficacy, self-perceived lack of disclosure to others – and his or her personality characteristics should be taken into account,^{58,113,115,116} although to a lesser extent. For example, if people feel that their loneliness reflects their personal incompetence, then the prospect of its ending may seem remote and beyond their control.^{117–119}

Consequences of loneliness

This section will address some of the main facets of the consequences of loneliness. It is the generally accepted opinion that loneliness frequently results in a decrease in well-being in the form of

depression, sleeping problems, disturbed appetite and so on.¹²⁰ Loneliness is thus among the latent causes of hospitalization and of placement in nursing homes.¹²¹ The more pathological consequences of loneliness are to be found among those adults who develop personality and adaptation disorders, such as alcohol overconsumption, loss of self-esteem, extreme forms of anxiety, powerlessness and stress.¹²² In a complex process of interrelatedness between ill health and loneliness, total alienation and estrangement from society and the culture it carries may be the outcome.^{48,123}

Considerable diversity exists with respect to various coping strategies used by the lonely, either directed towards adaptation of the standards or expectations for social participation, or towards establishing and improving the network of personal relationships, or towards coping with loneliness-induced stress.^{22,124-126} Several researchers report interventions against loneliness, e.g. in small groups of lonely persons. These interventions are made either to influence expectations about personal efficacy,¹²⁷ to improve capacities for establishing links with others⁵⁸ or to regulate behaviour and efforts directly, via behavioural training and feedback.^{128,129} Results indicate that compared with controls, members of intervention groups rate more favourably on social contacts and on loneliness after the period of intervention.^{130,131} So, loneliness is a treatable, rather than an irreversible, condition of life.^{130,132}

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References

- 1 Zimmermann JG. *Über die Einsamkeit*. Frankfurt: Troppau, 1785/1786.
- 2 Parpert F. *Philosophie der Einsamkeit*. München-Basel: Reinhardt, 1955.
- 3 Kölbel G. *Über die Einsamkeit. Vom Ursprung, Gestaltwandel und Sinn des Einsamkeitserlebens*. München-Basel: Reinhardt, 1960.
- 4 Moustakas CE. *Loneliness*. New York: Prentice Hall, 1961.
- 5 Lotz JB. Das Phänomen der Einsamkeit im Lichte der personalen Anthropologie. In: Bitter W ed. *Einsamkeit in medizinisch-psychologischer, theologischer und soziologischer Sicht*. Stuttgart: Klett, 1967: 30-48.
- 6 Simmel G. De kwantitatieve bepaaldheid van de groep. In: *Een keuze uit het werk van Georg Simmel*. Deventer: Van Loghum Slaterus, 1976.
- 7 Van Raalten F. *Eenzaamheid en communicatie*. Bussum: Het Wereldvenster, 1982.
- 8 Hofstätter PR. *Gruppendynamik; Kritik der Massenpsychologie*. Hamburg: Rowohlt, 1957.
- 9 Bitter W. *Einsamkeit in medizinisch-psychologischer, theologischer und soziologischer Sicht*. Stuttgart: Klett, 1967.
- 10 Carp EADE. *Eenzaamheid; schets ener antropologische psychiatrie*. Utrecht: Erven J Bijleveld, 1964.
- 11 Carp EADE. Einsamkeit. In: Bitter W ed. *Einsamkeit*. Stuttgart: Klett, 1967: 86-99.
- 12 Von Oppen D. Einsamkeit als Last und Bedürfnis. In: Bitter W ed. *Einsamkeit*. Stuttgart: Klett, 1967: 104-10.
- 13 Mijuskovic B. The phenomenology and dynamics of loneliness. *Psychol J Hum Behav* 1996; **33**: 41-51.
- 14 McGraw JG. Loneliness, its nature and forms: an existential perspective. *Man World* 1995; **28**: 43-64.
- 15 Perlman D. Loneliness: a life-span, family perspective. In: Milardo RM ed. *Families and social networks*. Beverly Hills: Sage, 1988: 190-220.
- 16 Davis MH, Franzoi SL. Adolescent loneliness, self-disclosure, and private self-consciousness: a longitudinal investigation. *J Pers Soc Psychol* 1986; **51**: 595-608.
- 17 Goswick RA, Jones WH. Components of loneliness during adolescence. *J Youth Adolesc* 1982; **11**: 373-83.
- 18 Marcoen A, Brumage M. Loneliness among children and young adolescents. *Dev Psychol* 1985; **21**: 1025-31.
- 19 Cutrona CE. Transition to college: loneliness and the process of social adjustment. In: Peplau LA, Perlman D eds. *Loneliness, a sourcebook of current theory, research and therapy*. New York: Wiley, 1982: 291-309.
- 20 Liefbroer AC, de Jong Gierveld J. Age differences in loneliness among young adults with and without a partner relationship. In: Drenth PJD, Sergeant JA, Takens RJ eds. *European perspectives in psychology*, 3. Chichester: Wiley, 1990: 265-78.
- 21 Schultz NR, Moore DW. The loneliness experience of college students: sex differences. *Pers Soc Psychol Bull* 1986; **12**: 111-19.
- 22 Perlman D, Peplau LA. Towards a social psychology of loneliness. In: Gilmour R, Duck S eds. *Personal relationships 3: personal relationships in disorder*. London: Academic Press, 1981:

- 31-56.
- 23 Peplau LA, Perlman D eds. *Loneliness, a sourcebook of current theory, research and therapy*. New York: Wiley, 1982.
- 24 Margulis ST, Derlega VJ, Winstead BA. Implications of social psychological concepts for a theory of loneliness. In: Derlega VJ ed. *Communication, intimacy, and close relationships*. London: Academic Press, 1984: 133-60.
- 25 de Jong Gierveld J. Developing and testing a model of loneliness. *J Pers Soc Psychol* 1987; **53**: 119-28.
- 26 de Jong Gierveld J. Personal relationships, social support, and loneliness. *J Soc Pers Relat* 1989; **6**: 197-221.
- 27 Shute R, Howitt D. Unraveling paradoxes in loneliness: research and elements of a social theory of loneliness. *Soc Behav* 1990; **5**: 169-84.
- 28 Borys S, Perlman D. Gender differences in loneliness. *Pers Soc Psychol Bull* 1985; **11**: 63-74.
- 29 Rotenberg KJ, Kmill J. Perception of lonely and non-lonely persons as a function of individual differences in loneliness. *J Soc Pers Relat* 1992; **9**: 325-30.
- 30 Jones EE, Farina A, Hastorf AH, Markus H, Miller DT, Scott RA. *Social stigma: the psychology of marked relationships*. New York: WH Freeman, 1984.
- 31 Russell D, Peplau LA, Ferguson ML. Developing a measure of loneliness. *J Pers Assess* 1978; **42**: 290-94.
- 32 Russell D, Peplau LA, Cutrona CE. The revised UCLA loneliness scale: concurrent and discriminant validity evidence. *J Pers Soc Psychol* 1980; **39**: 472-80.
- 33 Russell D. The measurement of loneliness. In: Peplau LA, Perlman D eds. *Loneliness, a sourcebook of current theory, research and therapy*. New York: Wiley, 1982: 81-104.
- 34 de Jong Gierveld J, Kamphuis F. The development of a Rasch-type loneliness scale. *Appl Psychol Meas* 1985; **9**: 289-99.
- 35 de Jong Gierveld J, van Tilburg TG. *Handleiding voor de wijze van afnemen en verwerken van de eenzaamheidschaal*. Amsterdam: Vrije Universiteit, vakgroep Methoden en Technieken van sociaal-wetenschappelijk onderzoek, 1990.
- 36 Hartshorne TS. Psychometric properties and confirmatory factor analysis of the UCLA loneliness scale. *J Pers Assess* 1993; **61**: 182-95.
- 37 Marangoni C, Ickes W. Loneliness: a theoretical review with implications for measurement. *J Soc Pers Relat* 1989; **6**: 93-128.
- 38 Peplau LA. Loneliness research: basic concepts and findings. In: Sarason I, Sarason BR eds. *Social support: theory, research and applications*. Dordrecht: Nijhoff, 1985: 269-86.
- 39 Solano CH. Two measures of loneliness: a comparison. *Psychol Rep* 1980; **46**: 23-28.
- 40 Solano CH. People without friends. Loneliness and its alternatives. In: Derlega VJ, Winstead DA eds. *Friendship and social interaction*. New York: Springer, 1986: 227-46.
- 41 van Tilburg TG, de Leeuw E. Stability of scale quality under various data collection procedures: a mode comparison on the 'De Jong Gierveld Loneliness Scale'. *Int J Pub Opin Res* 1991; **3**: 69-85.
- 42 Boldero J, Moore S. An evaluation of De Jong Gierveld's loneliness model with Australian adolescents. *J Youth Adolesc* 1990; **19**: 133-47.
- 43 Gerritsen L, de Jong Gierveld J. Validating the De Jong Gierveld's Loneliness Measurement Instrument: young adults' concepts of loneliness investigated by means of the vignette technique. In: Hox JJ, Jansen W eds. *Measurement problems in social and behavioral research* (SCO rapport 381). Amsterdam: Stichting Centrum voor Onderwijs-onderzoek (SCO), 1994: 89-114.
- 44 de Leeuw ED. *Data quality in mail, telephone, and face to face surveys*. Amsterdam: TT Publications, 1992.
- 45 Moorer P, Suurmeijer TPBM. Unidimensionality and cumulativeness of the loneliness scale using Mokken scale analysis for polychotomous items. *Psychol Rep* 1993; **73**: 1324-26.
- 46 Townsend P, Tunstall S. Sociological explanations of the lonely. In: Townsend P ed. *The social minority*. London: Lane, 1973: 257-63.
- 47 Wenger GC, Davies R, Shatahmasebi S, Scott A. Social isolation and loneliness in old age: review and model refinement. *Ageing Soc* 1996; **16**: 333-57.
- 48 Kaufmann J. *Single people, single person households, isolation, loneliness; a status report*. Brussels: Commission of the European Communities, Directorate General V, 1993.
- 49 Jylhä M, Jokela J. Individual experiences as cultural: a cross-cultural study on loneliness among the elderly. *Ageing Soc* 1990; **10**: 295-315.
- 50 Waters WE, Heikkinen E, Dontas AS eds. *Health, lifestyles and services for the elderly*. Copenhagen: World Health Organization, 1989.
- 51 Stessman J, Ginsberg G, Klein M, Hammerman-Rozenberg R, Friedman R, Cohen A. Determinants of loneliness in Jerusalem's 70-year-old population. *Israel J Med Sci* 1996; **32**: 639-48.
- 52 Vlassoff C. The value of sons in an Indian village: how widows see it. *Popul Stud* 1990; **44**: 5-20.
- 53 Schumaker JF, Shea JD, Monfries MM, Groth-

- Marnat G. Loneliness and life-satisfaction in Japan and Australia. *J Psychol* 1993; **127**: 65–71.
- 54 Dykstra PA. *Next of (non) kin: the importance of primary relationships for older adults' well-being*. Amsterdam/Lisse: Swets & Zeitlinger, 1990.
- 55 de Jong Gierveld J, Dykstra P. Life transitions and the network of personal relationships: theoretical and methodological issues. In: Perlman D, Jones WH eds. *Advances in personal relationships*, volume 4. London: Jessica Kingsley Publishers, 1993: 195–227.
- 56 Bondevik M, Skogstad A. Loneliness among the oldest old, a comparison between residents living in nursing homes and residents living in the community. *Int J Aging Hum Dev* 1996; **43**: 181–97.
- 57 de Jong Gierveld J, Raadschelders J. Types of loneliness. In: Peplau LA, Perlman D eds. *Loneliness, a sourcebook of current theory, research and therapy*. New York: Wiley Interscience, 1982: 105–19.
- 58 Weeks DJ. A review of loneliness concepts, with particular reference to old age. *Int J Geriatr Psychiatry* 1994; **9**: 345–55.
- 59 de Jong Gierveld J, van Tilburg TG. Social relationships, integration, and loneliness. In: Knipscheer CPM, de Jong Gierveld J, van Tilburg TG, Dykstra PA eds. *Living arrangements and social networks of older adults*. Amsterdam: VU University Press, 1995: 155–72.
- 60 Weiss RS. *Loneliness: the experience of emotional and social isolation*. Cambridge: MIT Press, 1973.
- 61 Litwak E, Szelenyi I. Primary groups structures and their functions: kin, neighbours, and friends. *Am Soc Rev* 1969; **34**: 465–81.
- 62 Allan G. *A sociology of friendship and kinship*. London: Allen & Unwin, 1979.
- 63 Barron CR, Foxall MJ, Von Dollen K, Jones PA, Shull KA. Marital status, social support, and loneliness in visually impaired elderly people. *J Adv Nurs* 1994; **19**: 272–80.
- 64 Broers N, Roskam E. Situationele determinanten van eenzaamheid. *Ned Tijdschr Psychol* 1995; **50**: 106–19.
- 65 de Jong Gierveld J, van Tilburg T. The partner as source of social support in problem and non-problem situations. In: Hojat M, Crandell R eds. *Loneliness: theory, research and applications*. London: Sage, 1989: 191–200.
- 66 Dykstra P. Loneliness among the never and formerly married: the importance of supportive friendships and a desire for independence. *J Gerontol Soc Sci* 1995; **50B**: 321–29.
- 67 Tennstedt SL, Crawford S, McKinlay JB. Determining the pattern of community care: is coresidence more important than caregiver relationship? *J Gerontol Soc Sci* 1993; **48**: 574–83.
- 68 Hagestad GN. The ageing society as a concept for family life. *Daedalus* 1986; **115**: 119–39.
- 69 Litwak E. *Helping the elderly: the complementary roles of informal networks and formal systems*. New York: Guilford, 1985.
- 70 Blieszner R, Adams RG. *Adult friendship*. Newbury Park, CA: Sage, 1992.
- 71 Connidis IA, Davies L. Confidants and companions in later life: the place of family and friends. *J Gerontol Soc Sci* 1990; **45**: 141–49.
- 72 Hartup WW, Stevens N. Friendship and adaptation in the life course. *Psychol Bull* 1997; **121**: 355–70.
- 73 Mullins LC, Mushel M. The existence and emotional closeness of relationships with children, friends and spouses: the effect on loneliness among older persons. *Res Aging* 1992; **14**: 448–70.
- 74 Prins KS, Buunk AP. Eenzaamheid en billijkheid in relaties met vrienden. In: Meertens RW, Buunk AP, van Lange PAM, Verplanken B eds. *Sociale psychologie: Beïnvloeding van intermenselijke en gezondheidsproblemen*. Den Haag: VUGA Uitgeverij, 1992: 117–30.
- 75 Stevens N. Gender and adaptation to widowhood in later life. *Ageing Soc* 1995; **15**: 37–58.
- 76 Mullins LC, Johnson DP, Andersson L. Loneliness of the elderly: the impact of family and friends. In: Hojat M, Crandall R eds. *Loneliness, theory, research and applications*. London: Sage, 1989: 225–38.
- 77 Simons RL. Specificity and substitution in the social networks of the elderly. *Int J Aging Hum Dev* 1983–1984; **18**: 121–39.
- 78 van Tilburg TG. The size of the supportive network in association with the degree of loneliness. In: Knipscheer CPM, Antonucci TC eds. *Social network research: substantive issues and methodological questions*. Lisse: Swets & Zeitlinger, 1990: 137–50.
- 79 Dykstra PA. The differential availability of relationships and the provision and effectiveness of support to older adults. *J Soc Pers Relat* 1993; **10**: 355–70.
- 80 Blau PM. *Exchange and power in social life*. New York: Wiley, 1964.
- 81 Homans GC. *Social behavior: its elementary forms*. New York: Harcourt, Brace & World, 1961.
- 82 van Tilburg TG, Broese van Groenou M, Thomése F. Flow of support. In: Knipscheer CPM, de Jong Gierveld J, van Tilburg TG, Dykstra PA eds. *Living arrangements and social networks of older adults*. Amsterdam: VU University Press, 1995: 131–54.

- 83 Fitzpatrick R, Newman S, Lamb R, Shipley M. Social relationships and well-being in rheumatoid arthritis. *Soc Sci Med* 1988; **27**: 399-403.
- 84 Morgan DL, Schuster TL, Butler EW. Role reversals in the exchange of social support. *J Gerontol* 1991; **46**: 278-87.
- 85 Jerrome D. Loneliness: possibilities for intervention. *J Aging Stud* 1991; **5**: 195-208.
- 86 Herbert TB, Cohen S. Stress and immunity in humans: a meta-analytic review. *Psychosom Med* 1993; **55**: 364-79.
- 87 Penninx BWJH, van Tilburg TG, Kriegsman DMW, Deeg DJH, Boeke AJP, van Eijk JTM. Effects of social support and personal coping resources on mortality in older age. *Am J Epidemiol* 1997; **146**: 510-19.
- 88 Creecy RF, Berg WE, Wright R. Loneliness among the elderly: a causal approach. *J Gerontol* 1985; **40**: 487-93.
- 89 Schwarzer R, Leppin A. Social support and health: a theoretical and empirical overview. *J Soc Pers Relat* 1991; **8**: 99-127.
- 90 Carstensen LL. Socio-emotional selectivity theory: social activity in the life-span context. *Annu Rev Gerontol Geriatr* 1991; **11**: 195-217.
- 91 Jelin E. Celibacy, solitude, and personal autonomy: individual choice and social constraints. In: Berquo E, Xenos P eds. *Family systems and cultural change*. Oxford: Clarendon Press, 1992: 109-24.
- 92 Hareven TK. *Family time and industrial time*. Cambridge: Cambridge University Press, 1982.
- 93 Mutchler JE, Burr JA. A longitudinal analysis of household and nonhousehold living arrangements in later life. *Demography* 1991; **28**: 375-90.
- 94 Connidis IA, McMullin JA. Social support in older age: assessing the impact of marital and parent status. *Can J Aging* 1994; **13**: 510-27.
- 95 Martin Matthews A, Shippides A. *Contributors to the loss of independence and the promotion of independence among seniors*. Report prepared for the Seniors Independence Research Program. Ottawa: Community Health Division, Health and Welfare, 1989.
- 96 Burch TK, Matthews BJ. Household formation in developed societies. *Popul Dev Rev* 1987; **13**: 495-511.
- 97 de Jong Gierveld J, van Solinge H. *Ageing and its consequences for the socio-medical system*. Population Studies no.29. Strasbourg: Council of Europe Press, 1995.
- 98 Pampel FC. Trends in living alone among the elderly in Europe. In: Rogers A ed. *Elderly migration and population redistribution*. London: Belhaven Press, 1992: 97-117.
- 99 Grundy E. The living arrangements of elderly people. *Rev Clin Gerontol* 1992; **2**: 353-61.
- 100 Johnson CJ. Grandparenting options in divorcing families; an anthropological perspective. In: Bengtson V, Robertson EI eds. *Grandparenthood*. Beverly Hills: Sage, 1985: 81-96.
- 101 Holmén K, Ericsson K, Winblad B. Loneliness and living conditions of the oldest old. *Scand J Soc Med* 1994; **22**: 15-19.
- 102 Schultz N, Moore D. Loneliness: differences across three age levels. *J Soc Pers Relat* 1988; **5**: 276-84.
- 103 Barretta D, Dantzer D, Kayson W. Factors related to loneliness. *Psychol Rep* 1995; **76**: 827-30.
- 104 Morgan DL. Age differences in social network participation. *J Gerontol* 1988; **43**: 129-37.
- 105 Wheeler L, Reis H, Nezlek J. Loneliness, social interaction, and sex roles. *J Pers Soc Psychol* 1983; **45**: 943-53.
- 106 Tunstall J. *Old and alone; a sociological study of old people*. London: Routledge & Kegan Paul, 1966.
- 107 Lopata H. Loneliness: forms and components. *Soc Prob* 1969; **17**: 248-62.
- 108 Dugan E, Kivett VR. The importance of emotional and social isolation to loneliness among very old rural adults. *Gerontologist* 1994; **34**: 340-46.
- 109 de Jong Gierveld J. Husbands, lovers, and loneliness. In: Lewis RA, Salt RE eds. *Men in families*. Beverly Hills: Sage, 1986: 115-25.
- 110 Berg S, Mellström D, Persson G, Svanborg A. Loneliness in the Swedish aged. *J Gerontol* 1981; **36**: 342-49.
- 111 Elias N. *De eenzaamheid van stervenden in onze tijd*. Amsterdam: Meulenhoff, 1984.
- 112 Penninx BWJH, van Tilburg TG, Deeg DJH, Kriegsman DMW, Boeke AJP, van Eijk JTM. Direct and buffer effects of social support and personal coping resources in individuals with arthritis. *Soc Sci Med* 1997; **44**: 392-402.
- 113 Fischer CS. On urban alienations and anomie: powerlessness and social isolation. *Am Soc Rev* 1973; **38**: 311-26.
- 114 Scott JP. Single rural elders. *Alternative Lifestyles* 1979; **2**: 379-82.
- 115 Rubenstein C, Shaver P. The experience of loneliness. In: Peplau LA, Perlman D eds. *Loneliness: a sourcebook of current theory, research and therapy*. New York: Wiley Interscience, 1982: 206-23.
- 116 Solano CH, Batten PG, Parish EA. Loneliness and patterns of self-disclosure. *J Pers Soc Psychol* 1982; **43**: 524-31.
- 117 Perlman D, Peplau LA. Loneliness Research: a survey of empirical findings. In: Peplau LA, Goldston SE eds. *Preventing the harmful consequences of severe and persistent loneliness*.

- DHHS publication no. ADM 84-1312.
Washington, DC: US Government Printing Office, 1984: 13-46.
- 118 Anderson CA, Arnoult LH. Attributional models of depression, loneliness, and shyness. In: Harvey JH, Weary G. eds. *Attribution: basic issues and applications*. New York: Academic Press, 1985: 235-79.
- 119 Solano CH. Loneliness and perceptions of control: general traits versus specific attributions. *J Soc Behav Pers* (Special issue: Loneliness: theory, research, and applications) 1987; **2**: 201-14.
- 120 Weidinger B. *Einsamkeit und ihre Auswirkung auf das subjektive Krankheitsempfinden bei über 60jährigen Patienten in der Allgemeinarztpraxis*. München: Medizinischen Poliklinik der Universität München, 1992.
- 121 Mor-Barak ME, Miller LS. A longitudinal study of the causal relationship between social networks and health of the poor frail elderly. *J Appl Gerontol* 1991; **10**: 293-310.
- 122 Nerviano VJ, Gross WF. Loneliness and locus of control for alcoholic males. *J Clin Psychol* 1976; **32**: 479-84.
- 123 Akerlind I, Hörnquist JO. Stability and change in feelings of loneliness: a two-year prospective longitudinal study of advanced alcohol abusers. *Scand J Psychol* 1989; **30**: 102-12.
- 124 Rook KS. Toward a more differentiated view of loneliness. In: Duck S ed. *Handbook of personal relationships: theory, research and interventions*. New York: Wiley, 1988: 571-89.
- 125 Rook KS, Peplau LA. Perspectives on helping the lonely. In: Peplau LA, Perlman D eds. *Loneliness: a sourcebook of current theory, research and therapy*. New York: Wiley, 1982: 351-78.
- 126 Rokach A. The subjectivity of loneliness and coping with it. *Psychol Rep* 1996; **79**: 475-81.
- 127 Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev* 1977; **84**: 191-215.
- 128 Young J. Loneliness, depression and cognitive therapy: theory and application. In: Peplau L, Perlman D eds. *Loneliness: a sourcebook of current theory, research, and therapy*. New York: Wiley Interscience, 1982: 379-405.
- 129 Evans RL, Werkoven W, Fox HR. Treatment of social isolation and loneliness in a sample of visually impaired elderly persons. *Psychol Rep* 1982; **51**: 103-108.
- 130 Andersson L. Intervention against loneliness in a group of elderly women: an impact evaluation. *Soc Sci Med* 1985; **20**: 355-64.
- 131 Jones WH, Hobbs SA, Hockenbury D. Loneliness and social skill deficits. *J Pers Soc Psychol* 1982; **42**: 682-89.
- 132 Donaldson JM, Watson R. Loneliness in elderly people: an important area for nursing research. *J Adv Nurs* 1996; **24**: 952-59.