

The Changing Eye of the Beholder.
Perceived Changes in Social Support Following a
Move into Residential Care.

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1 **ABSTRACT**

Background: Increasing numbers of older people are requiring residential care and there are high levels of depression in such settings. Existing literature suggests that social support can help maintain psychological wellbeing. This study aimed to examine perceived changes in social support following a move into residential care. The key theories drawn upon were socioemotional selectivity theory (Carstensen *et al.*, 1999) and the convoy model (Kahn & Antonucci, 1980).

Method: Forty care home residents were interviewed using a structured interview. A hierarchical network mapping technique was used to measure perceptions of total network, inner network and peripheral network size. Functional support from a key significant other was measured using the Significant Others Scale. Contact with network members, depression and demographic information were also examined. Retrospective ratings were obtained by asking participants to think back to before they moved into care. Current and retrospective ratings on all measures were compared using Wilcoxon signed rank tests.

Results: Total network size was perceived to have decreased following a move into residential care. There was no significant difference between current and retrospective ratings of inner network size. Peripheral network size decreased but this difference was not statistically significant. There was no perceived change in emotional and practical social support received from a key significant other following the move.

Discussion: The results suggest that an individual's social network is compacted following a move into care but that membership of the inner network remains stable. These findings are discussed in terms of socioemotional selectivity theory (Carstensen *et al.*, 1999) and the convoy model (Kahn & Antonucci, 1980). Strengths and weaknesses of the study are discussed and clinical implications of the findings explored.

2 INTRODUCTION

2.1 Overview

As the population ages, increasing numbers of older people are requiring care in residential settings. Social support can be important in maintaining psychological wellbeing and it is possible that such support will change following a move into care. This study will examine the social support care home residents perceive themselves as receiving. The support they felt they received prior to moving into care will also be considered. Changes pre- and post-move will be examined and links to current mood explored. In this thesis the terms 'residential care' and 'care home' will be used interchangeably to refer to both residential care homes and nursing homes.

The introduction will give an overview of relevant literature. After setting the scene in terms of changing population demographics, literature regarding moving into care will be presented. Theories of social support will then be considered, specifically the socioemotional selectivity theory (Carstensen *et al.*, 1999) and the convoy model (Kahn & Antonucci, 1980). Literature regarding changes in social support over the lifespan and on social support in care settings will be reviewed. Based on the findings of previous research the aims of the current study and hypotheses will then be stated.

2.2 Background

2.2.1 Demographic context

Life expectancy is increasing and statistics produced by the United Nations (UN) (2009) estimate a fourfold increase in the number of older adults (aged 60 or over) worldwide over the next 50 years, from 102 million in 2009 to 395 million in 2050. In more developed regions, such as Europe, it is projected that 10 per cent of the population will be over 80 years of age by 2050. In Scotland projections suggest that there will be an increase in the proportion of the population who are of pensionable age from 19.7 per cent in 2008 to 24.1 per cent in 2033 (General Register Office for Scotland, 2009).

Not only is the number of older adults increasing but the pool of potential carers is in decline. The UN (2009) use 'dependency ratio' as an indicator of potential support needs. This is calculated by comparing the number of children and the number of people over 65 to the number of people of working age per 100 population. Although it is recognised that not

all those over 65 will be dependent, this is the only such indicator of dependency currently available. The dependency ratio is predicted to rise in more developed regions of the world from 48 in 2009 to 71 in 2050. It is also expected to be comprised increasingly of older adults and less so of children, with older adults comprising 49 per cent now and 63 per cent in 2050. In Europe in 2009 there were 4.2 people of working age per person over 65 years of age. By 2050 there are expected to be around two. The number of potential carers for older adults is therefore predicted to decrease. In Scotland the number of pensioners per 100 population of working age is projected to increase from 31.4 in 2008 to 40.4 in 2033 (General Register Office for Scotland, 2009).

Increasing longevity affects not only the number of older adults requiring care but also the composition of families. A British survey, for example, found most adults belong to families containing three living generations (Grundy *et al.*, 1999). As a consequence many midlife adults care for frail elderly parents at the same time as raising dependent children. This 'sandwich generation' may, therefore, have less time and resources to care for elderly relatives than their own parents might have had.

Changes in family structure, combined with increasingly high divorce rates and low fertility, means that older adults are often dependent for support not only on the nuclear but also the extended family (Bengtson, 2001; Hogan *et al.*, 1993). High divorce rates are also perhaps responsible for the increasing number of people living alone. Figures from 2005 show that in developed regions of the world 24 per cent of people aged over 60 years live alone (UN, 2009). As the pool of potential carers decreases it seems likely that the number of older people requiring formal supported living in residential homes will increase.

A longitudinal study, of over 5000 older adults, found that those living alone and those with less non-kin social supports at baseline were at increased risk of nursing home admission by six year follow-up (Wolinsky *et al.*, 1992). In another longitudinal study Freedman *et al.* (1994) examined entry to a nursing home over a three year period in a sample of almost 3000 older adults. They found that for males, entry to a nursing home was associated with the lack of a spouse but not with network size. For females, however, size of network predicted admission to a home. A possible explanation for this difference is that women tend to live longer, are therefore less likely to have a surviving spouse (Laidaw & Pachana, 2009) and other network members are therefore more likely to provide care. It appears then that those individuals with limited social support may be more likely to move into care.

In Scotland there are around 33,000 older adults living in residential care settings (The Scottish Government, 2009). Data from the 2001 census indicated that for people aged 75 to 84, 3.5 per cent of men and 5.2 per cent of women lived in care. This increased to 10.3 per cent of men and 16.8 per cent of women for those aged 85 to 89, and 21 per cent of men and 34.2 per cent of women in those over 90 years of age (Census 1991, 2001, cited in National Statistics, 2005). Data on increasing longevity implies there will be more people falling into these older age groups and the number of older adults living in residential care is therefore likely to increase.

While the evidence presented above suggests an increase in older adults living in care, it should be noted that supporting people to live independently is part of the NHS plan (Department of Health, 2000). The National Service Framework for Older People (Department of Health, 2001) also includes recommendations aimed at avoiding admission to long-stay residential care. According to census data from 1991 and 2001 the percentage of older people living in communal settings has decreased in the last decade (National Statistics, 2005). While the percentage might have dropped, as life expectancy is increasing it is important to look at the number of people living in such settings rather than simply percentages. More recent data for Scotland (The Scottish Government, 2009) indicated that the total number of older people living in care homes decreased slightly between March 2000 and March 2008, from 34,400 to 33,100. Of the total 37,400 people living in care, older adults clearly make up the largest proportion (89 per cent). These government drivers to keep people in their own homes for as long as possible may have led to a decrease in recent years. The projected figures for longevity and dependency ratios imply however that this may be difficult to maintain and an increase in older adults in care seems likely. If older people continue to require residential care it is important that psychological wellbeing and good quality of life are promoted in this often neglected population.

2.2.2 Moving into care

2.2.2.1 Research into the negative effects of moving

Early research into the effect of moving into residential care concentrated on mortality rates of those entering homes. Mortality rates following admission to an institution are higher than expected, even when accounting for age (Camargo & Preston, 1945; Josephy, 1949; Whittier & Williams, 1956; Rowland, 1977). One would expect those admitted to be frailer

and more unwell than peers living in the community however, and mortality rates have been shown to be higher not only following admission into care but also pre-move (Bourestom & Tars, 1974; Thorson & Davis, 2000) . This was something which the early literature failed to account for and thus the suggestions of increased mortality may be due to the health status of those moving into care, rather than the move itself.

Moving is, however, a stressful time for most people but this may be especially true for older adults. For example, in an acute hospital setting moving rooms was found to have a positive effect on the health of younger patients but the effects on health were negative for older patients (Mirotznik & Lombardi, 1995). Although non-mover controls were matched with those who moved, in terms of health status and length of hospital stay, it is possible that moving room indicated progress for younger patients while for older patients it may have been due to deterioration in health. In the older adult sample, health status was more likely to improve for non-movers; they were more likely to be walking independently and likely to be taking less medication, when compared with those who had moved to a different room.

Examining transfer from one care home to another, Mirotznik (1995) found the health of older adults was generally worse post-transfer. Participants in this study acted as their own controls and data was gathered during the year pre- and post-transfer. It is possible, however, that participants' health may have deteriorated over the time of the study anyway and the effects may not be simply due to the transfer to a new residential home. It would have been helpful to have a control group of care home residents who did not move for comparison. Also investigating the effect of moving from one institution to another, Hodgson *et al.* (2004) found significantly higher pulse rates, anxiety and depression symptoms in participants waiting to move than in those who had already relocated. Similarly, Rutman and Freefman (1998) found better psychological adjustment in those who had already moved.

2.2.2.2 Perceptions of care homes

Many older adults have little experience of care homes and their perceptions are often based on information from the media or friends (Reed & Morgan, 1999). There are negative views about care homes among older people and in society as a whole (Morgan *et al.*, 1997; Nolan & Dellasega, 2000; Heywood *et al.*, 2002; Cheek *et al.*, 2006). A study in Hong Kong found that 85 per cent of participants did not want to live in a nursing home when older, despite the

fact that 50 per cent had never visited one (Tse, 2007). Care home staff, in a study by Reed and Morgan (1999), reported that older people tended to have limited knowledge of what life in a care home was like prior to moving in. This finding was replicated by Allen *et al.* (1992) using interviews with care home residents. It is unclear on what older adults are basing their perceptions of care homes and more research into the psychological transition into residential care is therefore warranted.

Older adults moving from hospital into a residential setting often have no opportunity to discuss what such a move will involve (Reed & Morgan, 1999). A stoical attitude among the current cohort of older people may mean that they do not approach staff to discuss any concerns. Reed and Morgan (1999) reported that study participants said this was because they did not want to burden others and were concerned that others were more in need of staff time than they were. Tse (2007) suggests that health professionals should listen more to the worries of older adults and correct any misconceptions they may have about moving to a residential home. In hospitals, however, Reed and Morgan (1999) found that nurses had limited knowledge about care home life and social workers had limited time to spend discussing concerns. Research examining life in a residential home could, therefore, help staff involved with older adults contemplating such a move, to offer realistic advice.

2.2.2.3 Positives of living in a care home

Much of the research about moving into care has reinforced the negative perceptions about living in such settings, for example focusing on increased morbidity and mortality following a move. Qualitative studies investigating the transition into care have also highlighted a number of positives about living in a residential home. While the negative aspects of residing in a care home cannot be ignored, in this section the positive aspects will be explored.

Older adults value feeling physically safe and secure in a care home (Iwasiw *et al.*, 1996; Wilkin & Hughes, 1987; Reed & Roskell Payton, 1996; Allen *et al.*, 1992; Tse, 2007); something which they may not feel if living alone in the community. The lack of household responsibilities in residential care and provision of practical support from staff is also valued by residents. Participants in the study by Iwasiw *et al.* (1996) noted being relieved that there was no meal preparation and that they did not need to manage a household. This may not be the case for everyone, however. Writing about residential care and social identity Hockey

(1989) argues that; *'women's identity continues throughout life to arise out of the quality of care which they provide within the home'* (p209).

Smider *et al.* (1996) interviewed older adults before a move into residential care and identified unexpected gains. At one month post-move participants were asked to what extent they had gained what they expected to gain and whether there had been any unexpected gains. They found *'about half of the sample reported experiencing no unexpected gains'* (Smider *et al.*, 1996, p.365), implying that half of the sample did find gains they had not anticipated. The unexpected gains reported were mainly of an interpersonal nature; *'making friends was easier than had been anticipated, there were new opportunities to socialize and be involved in activities'* (Smider *et al.*, 1996, p. 370). At one month follow-up people were still very new to the home and are likely to be in the process of adjusting to the move. It is possible that follow-up at a later time point would produce different findings, perhaps with more gains being found in those who had adjusted to the move.

In communal living such as care homes, there may not be the same sense of isolation experienced by some older adults living in the community. People living in care have noted relief that they are not alone (Iwasiw *et al.*, 1996; Reed & Roskell Payton, 1996) and said they enjoyed the interaction with others (Allen *et al.*, 1992; Tse, 2007). The relationship with family members was also perceived to improve following a move; participants reported closer family ties (Smith & Bengtson, 1979) and reduced workload for their family (Tse, 2007). It is evident from these qualitative studies that many of the gains perceived following a move into residential care are of a social/ interpersonal nature.

2.2.2.4 Choice over the move

Having some choice over the move into care is likely to provide a degree of perceived control. Studies comparing voluntary and forced moves have found that in forced moves people show poorer health (Wilson, 1997), emotional wellbeing (Wilson, 1997; Smider *et al.*, 1996) and adjustment (Wilson, 1997). They also tend to be less satisfied (Reinardy, 1995; Chenitz, 1983; Noelker & Harel, 1978). Reinardy (1995) interviewed 502 older adults one month after moving into residential care. Asked if it had been their own decision to move, 41 per cent of participants said it had. Those who felt it had been their decision were found to be more satisfied with the care home, as measured by 'The Satisfaction with Care and Environment Scale'. As with many of the studies examining the effect of perceived

control over a move into care, data was collected retrospectively. As Reinardy (1995) notes, participants' perceptions of why they moved may be reconstructed and based on their post admission experience. Ratings of all of the outcomes described above could also be affected by depression. If someone were depressed then he or she might also be more likely to feel that the move was forced rather than their own choice when asked retrospectively.

If people have negative views of care, then it seems likely that they might not choose to move into a residential home unless there is no other option, making forced moves more common. Moving into care is often not by personal choice (Kao *et al.*, 2004) and only considered when it is unavoidable (Cheek *et al.*, 2006). This means that moves are often unplanned and the older person has little control over the decision. Allen *et al.* (1992) found that 18 per cent of their sample felt they had 'not had enough control' over the move and that people giving this response tended to be unhappy about moving into care. A move into care is often associated with a negative life event, such as ill health. Reasons for entering a care home given by participants in a study by Allen *et al.* (1992) were; following a fall/fracture (26 per cent), deterioration in physical/ mental health (26 per cent), acute illness (14 per cent), pressure on an informal carer (20 per cent) and loneliness (14 per cent). Lee *et al.* (2002) suggest that this may explain the negative view of care homes which is evident in the general population; it is typically seen as a last resort.

Voluntary moves may be more positive in terms of perceived control. For example, Lutgendorf *et al.* (1999) interviewed participants one month prior to a planned move into sheltered accommodation. They found that out of 30 older adult movers, 90 per cent were looking forward to the move. Seventy per cent of participants in this study had chosen to move as they felt it important to do so while they '*could still be in control of the move*' (Lutgendorf *et al.*, 1999, p.554). It should be noted, however, that in sheltered accommodation a high degree of independence can be maintained. Such a move may therefore be viewed more positively than moving into a care home, making it difficult to generalise from these results.

Davis and Nolan (2003) suggest that promoting the positive aspects of residential homes may increase the likelihood of older adults being actively involved in the decision to move into care. It is possible then that promoting more positive views about residential care, including any social gains, may lead to older adults making the move into care earlier, in a planned way and thus improve the experience of the transition.

2.2.3 Depression in care homes

There are similar frequencies of major depressive disorder in the older adult population compared with other age groups (Futterman *et al.*, 1995). The estimated prevalence of depression is between 8 – 16 per cent in older adult community samples (Koenig & Blazer, 1996; Livingston *et al.*, 1990; Copeland *et al.*, 1987; Beekman *et al.*, 1999). In nursing home residents this increases to around 30 per cent (Blazer, 1994; Parmelee *et al.*, 1992; Sutcliffe *et al.*, 2007).

Parmelee *et al.* (1992) found that the incidence of depression was similar among nursing home and congregate apartment residents. In this longitudinal study people were interviewed at two time points. Of those with major depression, those living in the apartments were more likely to have recovered than those in the nursing home by the second interview. The authors do not specify, however, the length of the gap between times one and two. The results should also be interpreted with caution as they do not take into account any possible adjustment reaction. People were interviewed two weeks following admission, or in the case of long-term residents on the anniversary of their admission and the effect of this on their mood should be considered.

A study examining depression at the time of admission to residential care (Sutcliffe *et al.*, 2007) found 43 per cent of those interviewed scored in the depressed range. This may partly have been an adjustment reaction and at nine month follow-up the rate of depression had fallen to 32 per cent. This is still much higher than in community-dwelling older adults suggesting that even once people have settled into the home and had time to adjust there remains an increased risk of depression.

Interviewing residential care home residents, Mann *et al.* (2000) found 40 per cent were in the depressed range on a screening measure. They also found that depression rates were lower in homes where residents felt their physical health needs were being adequately met. The mean number of years living in residential care was 3.3 years; the authors do not provide the standard deviation, however, so it is possible that there were a number of participants who had recently moved and may still have been adjusting to their new environment.

2.3 Psychological wellbeing and social support

Psychological wellbeing and depression have been shown to relate to perceptions of social support. Patrick *et al.* (2001) for example found that perceived social support predicted psychological wellbeing in community dwelling older adults. Michael *et al.* (2001) found the amount of contact that women living alone have with family and friends was associated with wellbeing. Those with larger social networks and more engagement with others had better mental health. Both of these studies used self-report measures of mood and social support and it is possible ratings on both measures would be affected by the respondent's mood. Depressed mood can cause a negative thinking bias (e.g. Beck, 1967, 1976). The self-report measures of mood and of social support used by Patrick *et al.* (2001) and by Michael *et al.* (2001) may have correlated due to a negative response bias on both measures rather than indicating any significant relationship between mood and social support. The link found by Michael *et al.* (2001) between network size and psychological wellbeing may be due to confounding factors. Having a larger social network in itself may not increase well-being, but rather increase the amount of contact with others and the level of support received.

In a community sample of adults living in New York, Lin *et al.* (1999) found that community ties, measured by the number of social clubs people were associated with, did not relate to depression. A positive relationship was found between living with an intimate partner, the number of people with whom participants had weekly contact and perceived social support. An intimate partner, increased weekly contacts and perceived social support were all found to protect against depression.

Investigating life satisfaction in a sample of 80 year olds Gow *et al.* (2007) found a correlation with perceived social support. Life satisfaction was measured using the Satisfaction with Life Scale (Diener *et al.*, 1985) while the Significant Others Scale (Power *et al.*, 1988) was used to assess social support. They showed that perceived social support accounted for 23 per cent of the variance in satisfaction with life ratings. While satisfaction with life is clearly different from depression this finding suggests that social support is important for general wellbeing.

The high incidence of depression in care homes may be linked to limited availability of social support. Segal (2005) found that there was a correlation between low levels of social

support and depression in nursing home residents, although this result was not statistically significant. Poor social support in care home residents has been found to be related to major but not sub-clinical depression (Jongenelis *et al.*, 2004). Depression in this population has been found, however, to be reduced by touch (Buschmann & Hollinger, 1994), which the authors took to be a measure of affective support.

The literature above suggests that there is a link between support and wellbeing. The nature of this correlation has not however been determined. Having restricted amounts of social support available may lead to depression. It is also possible that being depressed might lead to a decrease in social support. When someone is depressed there is a high likelihood that they will socially withdraw (Matt & Dean, 1993). If there are high levels of depression, then over time this may lead to a decline in available emotional support (Gurung *et al.*, 2003). This would fit with a cognitive behavioural explanation (e.g. Beck, 1967, 1976), namely that mood can influence thinking and this in turn can affect behaviour, and thus maintain low mood. For example, negative beliefs about himself or herself might lead someone to withdraw and not arrange for people to visit. They are, therefore, likely to receive less social support, which in turn may cause their mood to be low, increase the negative thoughts and thus any low mood is maintained.

2.4 Physical wellbeing and social support

Mortality and morbidity appear to be linked to social support but the exact relationship is unclear (Cohen, 1988). Studies have linked social support to mortality (Eng *et al.*, 2002), functional disability (Mendes de Leon *et al.*, 1999), disease risk and recovery (Seeman, 2000). To date, research has been unsuccessful in attempts to determine causality and whether illness results in less support or less support leads to illness. Social support may be linked to illness as it changes behaviour (e.g. diet, exercise) which then influences risk of disease. An alternative explanation is that social support affects biological responses (e.g. immune response) which in turn influence disease. In addition, illness itself might lead to reduced social networks. Fatigue for example may place limitations on the amount of contact someone can physically tolerate with others. Cohen (1988) suggests it is likely to be a combination of the above, with a bidirectional link between physical illness and social support. In other words, those with lower levels of support are at increased risk of becoming unwell and those who are unwell have an increased chance of becoming socially isolated.

2.5 Main effect and Stress buffering

In the literature there are two models which attempt to explain the link between social support and psychological wellbeing, physical health and mortality. These models are not mutually exclusive and research to date has emphasised the complex relationship between social support and wellbeing. The main effect and stress buffering models are presented here to provide a context for the remaining social support literature.

2.5.1 Main effect model

According to the main effect model the amount of social support received independently affects mortality, irrespective of current levels of stress (Cohen, 1988). Studies which have linked mortality to social support have shown a main effect (Berkman & Syme, 1979; House *et al.*, 1982). Both of these studies were large scale population based surveys which interviewed participants about their social support and then examined mortality data nine years later. Berkman and Syme (1979) found those with less social contact were more likely to die over the nine year follow-up, even when physical health was accounted for. These results were replicated by House *et al.* (1982).

Social support has also been found to correlate with better physical and mental health, irrespective of whether the person experienced stress (Aneshensel & Stone, 1982; Lin *et al.*, 1979; Williams *et al.*, 1981). Stress and perceived social support were found to directly affect depression (Aneshensel & Stone, 1982). If someone experienced high levels of stress then depression was higher, whether they had high or low levels of social support. In a study of Chinese Americans Lin *et al.* (1979) found that social support was negatively related to psychiatric symptoms, irrespective of stressful life events. The measure used for social support focused only on non-kin, however, and support from family is also likely to be important. In a longitudinal study Williams *et al.* (1981) assessed mental health over a one year time period. The study showed social contact was related to improved mental health over time, while stressful life events correlated with a decrease in mental wellbeing. There was no interaction found between social support and stress.

A number of potential mechanisms are proposed by Cohen (1988). Firstly information based theories are discussed, in which advice from others is predicted to promote healthier behaviours and thus improve health. Secondly identity and self-esteem theories are presented; social support is thought to improve self-esteem which acts on two levels to

improve health. Higher self-esteem improves mood and therefore enhances immune function. Those with higher self-esteem are also likely to take better care of themselves and thus their health will be better. A third theory presented is social influence; people conform to social norms so where there are positive role models health promotion behaviours could be increased and thus have a positive effect on health. The final theory discussed is that of tangible resources, the idea being that high levels of social support can provide tangible and economic resources which may limit exposure to risk factors for poor health.

Results from a study by Birditt and Antonucci (2008) support the main effect model. Using data from the American Changing Lives Study they found an association between social support and mortality. Perceptions of relationship quality, rated on a five-point scale, were measured in 1986 and again in 1989. Each participant also rated their health on a five-point scale, from poor to excellent. Data from those participants who had been over 40 years of age in 1986 were examined. In 2005 their names were looked up on the 'National Death Index' and 39 per cent were found to have deceased. When age and health were controlled for, low ratings of social support in both 1986 and 1989 were found to be linked to increased mortality in 2005. Birditt and Antonucci (2008), however, used no measures of stress, meaning its effect could not be examined. Also, although they measured depression it was not controlled for in the analyses suggesting that mood could have been a confounding variable. This is important as self-report measures were used to assess social support and physical health. Those who were depressed may have lower ratings of social support and health due to thinking biases connected to their low mood. It is possible that they are not actually any less healthy or receiving any less social support and this should be considered when interpreting the results.

2.5.2 Stress buffering model

An alternative notion is offered in the stress buffering model, which states that social support acts as a buffer, protecting people from the negative effects of stress (e.g. Gore, 1981; Cohen & Wills, 1985; House *et al.*, 1988). Gore (1981) presented a stress vulnerability model and concluded that social support can act as a buffer against both chronic stress and during crisis events. Cohen and Wills (1985) proposed that in the stress buffering model social support is related to wellbeing only at times of stress, as the support buffers against the harmful effects of stress. Differentiating between the main effect and stress buffering models House *et al.*, (1988) noted that it is likely to be the same mechanisms that promote wellbeing, but

according to the main effect hypothesis these act at all times, whereas the stress buffering model proposes they only operate at times of stress.

The mechanisms proposed in this model are the same as those presented above in the main effect model. Information provision, self-esteem, social influence and tangible resources are all thought to influence health as described above, the difference being in this model that these mechanisms would be activated only at times of stress. Cohen (1988) suggests that social support could act as a buffer against stress at two time points. Firstly, it is possible that support leads to the person not appraising an event as stressful, therefore protecting them from potential stress. Secondly, they might experience stress but support could help reduce their affective reaction in various ways, such as through distraction, encouraging self care and helping to re-evaluate the problem.

As noted above, Birditt and Antonucci (2008) provided evidence supporting the main effect model. Some of the results from their study also fit with the buffering effect model. Participants with a chronic illness, which was defined as: '*lung disease, heart attack or other heart trouble, diabetes or high blood sugar, stroke or cancer/ malignant tumour*' (Birditt & Antonucci, 2008, p. 1294) were found to have higher perceptions of social support received than those without a chronic illness. This suggests that at times of stress, such as during a chronic illness, social support increases. This could then act as a buffer, helping the individual cope with any emotional difficulties.

Apparently in contradiction to the stress-buffering hypothesis, however, Birditt and Antonucci (2008) found in those with a chronic illness higher perceptions of social support were related to increased mortality. It is possible that each of the illnesses classed as a 'chronic illness' could be responded to differently, and thus have differing effects on the level of support received from others. All chronic illnesses were however looked at together as one group. There may be differences in mortality rates and in support received between those presenting with each illness and these were not examined. This finding could also be explained by the socioemotional selectivity theory (Cartensen *et al.*, 1999), details of which will be given later. According to this theory when time is perceived as limited people focus on those relationships which are most meaningful to them. Those with a chronic illness may therefore feel closer to important people in their lives and those nearest to death, with the highest risk of mortality will therefore have the highest social support ratings.

Participants from an older adult community sample were interviewed by Krause (1986) about social support received, stressful life events and depressive symptoms. For those who had experienced bereavement, the results showed that informational support, tangible support, emotional support and integration were all buffered against depression. Where the stressor was being the victim of crime it was only emotional support which buffered against depression. For financial stress, however, there was no buffering effect found for any of the types of social support. The conclusion drawn was that one needs to consider both the type of support and the stressor, implying there is not simply an overall main effect but it is more likely that social support buffers against depression at times of stress. Thus with individuals moving into residential care, or contemplating such a move, social support may help them to cope with their emotions about the transition and thus reduce their risk of depression. The type of support offered may have differing effects however and it is not evident from the current literature whether practical or emotional support would be most beneficial.

A more recent study by Maulik *et al.* (2010) examined 1920 working age adults over a 10 year period. The results showed that following a significant life event mental health was better if there were higher levels of social support. Social network size, however, was not found to have any buffering effect on mental health.

2.5.3 Main effect and stress-buffering summary

There is evidence supporting both the stress-buffering and main effect models and the literature has concluded that both occur (e.g. Gore, 1981; Cohen & Wills, 1985; House *et al.*, 1988). It has been suggested in the literature that the amount of social support available may have a main effect on wellbeing; with the more supportive relationships someone has the better their physical and psychological wellbeing, while stress may be buffered by the actual social support received (Cohen & Wills, 1985; House *et al.*, 1988). These different types of support will now be considered.

2.6 Definitions of social support

There are various definitions of social support in the literature. For the purpose of this study the concept of social support will be discussed in terms of functional and structural support (Cohen & Syme, 1985; Cohen & Wills, 1985). The term functional support denotes the actual support provided. Structural support refers to where the support comes from, in other

words which relationships exist and of these, which provide support. House and Kahn (1985) refer to this as social network and social relationship. Gray (2009) writes about social capital which is defined as: “*the array of social contacts that give access to social, emotional and practical support*” (p. 6); in other words structural support. Social support is seen by Gray (2009) as being the outcome of social capital and is the perception of support being there if needed; this would be termed functional support in much of the literature. It is evident from all these theories that both structure and function of support networks are important.

2.7 Structural support

As mentioned above, social support is comprised of functional support but also it is important to consider the structure of a person’s social network, in other words where that support comes from. The value of considering the structure of people’s network was emphasised by Wagner *et al.* (1999). This study found that the majority of a person’s network consisted of people not classified as ‘helpers’. They concluded that even in old age social support is not an essential part of all social interactions. People appear to value social contact without necessarily needing to feel help and support from all their relationships.

An individual’s social world is made up of networks, which include both family and friends. These can vary throughout their lifetime; while some people may remain consistently in a person’s network, others may come and go. In terms of theories regarding social networks there are two main models which will be considered in this study. These are the socioemotional selectivity theory (Carstensen *et al.*, 1999) and the convoy model of social relations (Kahn & Antonucci, 1980). Each will be briefly introduced and the evidence regarding social networks in older adults will then be discussed in terms of how this fits with each model.

2.7.1 Socioemotional selectivity theory (Carstensen *et al.*, 1999)

This life-span theory of motivation links perceived time with the prioritisation of goals. There are various goals which motivate social contact. Carstensen *et al.* (1999) separate them into two categories: goals which aim to increase knowledge and are linked to being prepared in the future and goals related to the regulation of emotion and linked to satisfaction

in the present moment. At any one time someone might have a number of goals and sometimes these may be opposing. In order to act on these goals and interact in a socially meaningful way, decisions must be made as to which goals will be selected. While these goals are similar throughout life the importance of different goals varies across the life cycle (Lang & Carstensen, 1994). In a study by Fingerman and Perlmutter (1995) those aged over 60 years tended to be more focused on the present than on the future compared with younger people. As people age, time horizons shrink because old age is indicative of a natural ending, and according to this theory people are therefore more likely to select goals which are emotionally meaningful. In terms of social networks older individuals want to spend more time with people they are emotionally close to and networks are selected to meet these social needs. As people age they focus more attention and effort on maintaining certain social ties while allowing contact with others to reduce (Shaw *et al.*, 2007).

The socioemotional selectivity theory has been extended by Fingerman *et al.* (2008) to apply to relationships. Their theory is that the sense of time remaining in a relationship affects how people act in that relationship. They claim that people are therefore nicer to older adults as they view the remaining time as precious. Younger and older groups of participants were asked to name an older and younger social partner. Responses to vignettes indicated that overall people were less confrontational and more avoidant when interacting with older adults. This appears to be linked to perceived time remaining in the relationship, rather than simply being due to a greater respect for one's elders. When asked to imagine that social partners were to move abroad and they would have only limited contact with them, the difference between younger and older partners was not found. In the vignettes people were asked to imagine younger social partners were moving away for three years and so would potentially return to the relationship, whereas older social partners were moving to a retirement community abroad, presumably more permanent. This implies that the potential contact time in the near future may be as important as more long term time perspectives.

In a study comparing middle-aged people who had various perceptions of time until death due to HIV status, those who were HIV-positive and symptomatic valued affective dimensions in social relationships (Carstensen & Fredrickson, 1998). This is similar to older adult samples in other studies, implying it is not simply age which causes people to prioritise emotionally meaningful relationships, but rather perceived time remaining.

Time perspective was manipulated by Fung *et al.* (1999) and participants were asked to indicate whether they would prefer to spend time with familiar or novel social partners. In open ended scenarios, where the time was not specified there was a significant difference depending on age. The older participants (over 45 years) had a preference for familiar social partners which was not evident in the younger (under 45 years) age group. When future time was expanded by imagining that a new medical breakthrough would add 20 years to their life this preference for familiar partners in the older participants disappeared. This evidence supports the idea that it is the perception of time left that causes the selection of emotional social goals in older adults.

A study by Fung and Carstensen (2004) aimed to determine why emotional goals are prioritised when time is limited. Scenarios were presented which manipulated future oriented goals (by asking participants to imagine financial difficulty), perceived time (by imagining an upcoming move), both of these or, in a final condition, there was no manipulation. They were then asked to select which partners they would choose to spend time with and give reasons for their choice. The first explanation examined was termed 'goal disengagement' and referred to the idea that if time is limited and one does not expect to achieve a goal then it will be abandoned. As short-term emotional goals are more likely to be achieved when time is limited, they are therefore focused upon. The second explanation explored was that when time is perceived as limited people seek emotional comfort and therefore prioritise partners to whom they feel emotionally close. The findings of the study supported both of these explanations. When participants perceived an ending there was an increased preference for spending time with emotionally close social partners to achieve emotional meaning, not just support. When the perceived goal was not able to be fulfilled there was an increased preference for emotionally close partners, who provide emotional support and comfort. Scenarios differed for the younger and older age groups. The effect of age was therefore only looked at in the 'no manipulation' group and older adults were found more likely to choose to spend time with a close social partner. The study was experimental and therefore it is hard to generalise the findings. As a between subjects design was used there may have been a difference between groups in terms of individual losses experienced and perceived time remaining, which were not considered in the analysis.

The evidence above supports the socioemotional selectivity theory, as when time is perceived as limited emotionally meaningful goals are prioritised. Moving into care is often associated with ageing and the end of life, as the demographic data presented earlier has

shown. Older adults living in residential care are, therefore, likely to perceive their time as limited and prioritise emotionally meaningful goals.

2.7.2 Convoy model (Kahn & Antonucci, 1980)

Convoy is a term used to describe the network of family and friends that are there in times of need. They provide a secure base and help to protect the individual from psychological distress, enabling them to meet the challenges of life. According to this model, which takes a lifespan perspective of social relationships, a person's network may remain stable across time or it may change, depending on the person's needs and goals (Ajrouch *et al.*, 2005; Antonucci, 1985; Kahn & Antonucci, 1980; Lang & Carstensen, 1994). Both the individual and the situation they are in are likely to change over the life course. According to this model convoys are dynamic and the social network will change to reflect the changing needs of the individual (Antonucci, 2001).

The fluid aspect of the convoy is illustrated following a move; studies have found that post-move those in the more distant network change as new relationships are started. In a longitudinal study of people over 55 years of age living in Holland, Bloem *et al.* (2008) compared people who had moved with those who had not. Participants were interviewed prior to the move, three, six and nine years later. Findings indicated that the further people moved the greater the change in their network, especially in terms of neighbours. Those who moved within the same town did not have such a large neighbour network as those who moved further, which the authors suggest may be because they would not need so much help from neighbours to orientate themselves initially. Smaller networks were found in those who moved longer distances, even prior to the move. Bloem *et al.* (2008) claim this finding supports the socioemotional selectivity theory and suggest that in anticipation of the move people had started to prune their network. This is possible but alternatively those who choose to move may have been less satisfied with their current network and hence the move. Overall, the inner network whom people felt emotionally close to remained stable over time and also following a move. The more distant networks were less stable and changed, with new relationships starting following a move. In terms of the current study, it is important to note that those moving into a care facility were excluded from the study by Bloem *et al.* (2008) and the results may not generalise to such a population.

An intergenerational study by Levitt *et al.* (1993) asked female members of three generations (student, mother and grandmother) about their social network, using a network mapping procedure. Findings indicated that network size, social support and the number of family members rated as close was similar across generations. Support from friends was found to be greatest in the younger generation and they had networks comprised of more friends and fewer family members than those in the middle and older age groups. The network mapping, a technique described below, was completed in a questionnaire format; this is typically completed as a structured interview (e.g. Antonucci, 1986). Executive function deficits are more common in older adults (Johnson *et al.*, 2004; Salthouse *et al.*, 1998; Verhaeghen & Cerella, 2002) and it is possible that the older participants may have found it easier to list people from their family rather than needing to think of various friends. The findings indicated a difference between the younger age group and both their grandmothers and mothers in terms of friends. Thus, it appears to be more than simply an effect of age on ease of completion of the network mapping. As the authors point out it is difficult to generalise as only females participated and all were from well-educated families. The findings however seem to fit with the convoy model that as young adults are trying to establish their own family they rely on friends then as people reach middle and old age they turn to this family for support.

This theory is relevant to older adults moving into a care setting because their social convoy may require a change. Depending on where they move to it may be difficult to remain in contact with everyone in their network but they might meet other people in their new home and the composition of their network might therefore change.

2.7.3 Network size

In a student sample Stokes (1983) found the mean total network size was 15.1 (standard deviation 5.2). Participants were asked to list up to 20 people with whom they had at least monthly contact. As they were limited to 20 people by the researchers, these figures suggest that there may have been a ceiling effect, with a number of people perhaps having more people in their network than the methodology measured. It is also possible that people have limited contact with certain network members but still feel emotionally close to them; such network members would not have been measured in this study.

In older adults the average size of a social network is smaller than this. In a review paper Wenger (1997) stated that across European studies the size of support networks in older adults modally is 5 to 7, with a range of 1 to 20.

Hierarchical network mapping was used by Wagner *et al.* (1999) in the Berlin Aging Study. This technique described by Antonucci (1986) has been used in much of the literature. Participants are presented with a diagram with three concentric circles and “you” written in the centre. They then place people in their social network on the diagram depending on how close they feel to them. Overall, Wagner *et al.* (1999) found little difference between the size of participants inner (mean = 3.5), middle (3.8) and outer (3.7) networks. They found that those aged 70 to 84 had larger networks (mean = 11.9) than those over 85 years (7.6). The authors do not, however, give details of the standard deviation or whether they found any statistical differences between the two groups. They note that overall the range in network size was 0 to 49. The large variability between subjects needs to be considered when interpreting the findings.

Of particular relevance to the current study, Wagner *et al.* (1999) also compared social networks of people living in private households and those living in institutional settings. They found more people in private households (66 per cent) rated themselves as having at least one friend than those who were institutionalised (34 per cent). Those in private households also had larger networks, with an average of 10.3 partners compared to 4.5 in those living in an institution. The authors have not accounted for age in these particular analyses, however. Those living in institutions may be older than those in private households and this could be the reason for the differences found. In addition, support may have been limited in the institutionalised group and that may have contributed to their move into care, rather than the network decreasing following the move.

Data from the Berlin Aging Study was also used by Lang and Carstensen (1994) who found a negative correlation between total network size and age. The size of the inner network did not differ with age and the decrease in total size came from a reduction in people in the peripheral network. The paper does not detail what the average size of network was or provide any measure of variability. There was no difference between age groups in the total number of very close relationships.

Ajrouch *et al.* (2001) also used hierarchical network mapping. Overall, they found network size ranged from 0 to 20, with a mean of 10.1 (standard deviation = 5.4). They found that older participants had smaller networks, less contact with others and a higher proportion of kin in their network. The paper does not give details of specific differences in these areas with age and they do not define what they mean by 'older age'.

Another study showing a significant decrease in network size across age groups is that of Ajrouch *et al.* (2005). For those over 75 years they found the mean network size was 6.1. In this study the total network size was however capped at ten for ease of data collection. As the standard deviation was 2.8 it is possible that had it not been capped there would have been a small proportion of participants with more than ten people in their network. Ajrouch *et al.* (2005) also found that education and occupation influenced network structure, but neither age nor socioeconomic status was related to the number of people rated as being in the inner network. While total network decreased across the age groups, with those over 75 having smaller social networks, there was no significant difference found between the age groups for inner network size.

Both the size and structure of people's networks have been shown to change across the life span. As people age they often have less contact with friends and family due to ill health, moving away or death. The literature suggests that network size tends to decrease with age. This fits with the idea of the convoy changing across the life span and also with socioemotional selectivity theory; individuals choose a network to suit their needs at a particular point in life.

A four year longitudinal study found that in older adults, network size was stable over time (van Tilburg, 1998). The mean network size was 14 (standard deviation 9.6). Given the large variability and that network size ranged from 0 to 77, it seems likely that the data was not normally distributed. Non-parametric statistics should therefore have been used rather than parametric. A change in the composition of the network was found over time however, with the number of relatives increasing and the number of friends decreasing.

Carstensen *et al.* (1999) view the decrease in network size with age as evidence that older adults prune their network, concentrating on closer relationships as they perceive time as limited. These results should be interpreted with caution, however, as they used different people, all sampled at the same time then split into age-groups. The differences found may

be due to age but they could also be due to cohort effects. In addition, the studies discussed above relied on self-report. If older adults are indeed more focused on close relationships, it is possible that they still have peripheral network members but are less likely to recall them when completing a network map.

The literature on network size implies that there is a large degree of variability, both between and within studies. A possible explanation for this is that network size depends on how the individual interprets the question asked. Measurement techniques such as network mapping assess the individual's perceptions of their network rather than providing an objective measure of their actual social network.

2.7.4 Contact with network

Various methods have been used to attempt to measure contact with social network. A number of studies have used ordinal rating scales. Contact was measured by Ajrouch *et al.* (2001) using a five point scale ranging from one: every day to five: irregularly. The mean frequency of contact was 3.9 (standard deviation= 0.6). Similar results were found by Ajrouch *et al.* (2005); mean contact was 3.8 (standard deviation= 0.7). This scale should not be treated as a continuous variable as the difference between one (every day) and two (once per week) is clearly not the same as that between three (once per month) and four (once per year). The differences between the points are clearly not equal (e.g. one to two: every day-to once per week, compared to three to four: once per month to once per year) and this scale cannot, therefore, be treated as a continuous variable. Parametric statistics should therefore not have been used in this way as the figures obtained are difficult to interpret. For example, given that on the rating scale used three indicated once per month and four indicated once per year it could be concluded from the mean contact stated (3.8) that contact was limited. The mean rating however included ratings of contact with the entire social network. If a large number of people were seen only occasionally the mean rating would be low and may not reflect that a small number of people were seen frequently.

Shaw *et al.* (2007) asked how often people had seen friends or family in the previous two weeks. While contact with family was stable over time contact with friends decreased with age. They measured contact on a four-point ordinal scale and then reported the mean and standard deviations which, as noted above, are hard to interpret.

Wagner *et al.* (1999) tried to overcome the difficulty of treating an ordinal rating scale as a continuous variable. They used a seven-point scale to measure contact and this was rated from 'daily to never'. Based on methodology used by Frankel and DeWit (1989) this scale was then transformed into an index of days per year. The accuracy of these numbers is somewhat doubtful. If someone was rated as 'once a week' it is unlikely that they would actually be seen exactly 52 times per year; for example, they may go on holiday, or be unwell and not be able to visit.

In a longitudinal study Field and Minkler (1988) found that over a 14-year period, contact with family remained stable in those over 75 years old. The same study also showed that as people moved into very old age, defined as over 85 years, friendships lost their importance and contact declined. This implies that people may be prioritising and changing their network so they can focus energy on the emotionally-close social partners, as predicted by the socioemotional selectivity theory.

In terms of changes in contact after moving into care, nursing home residents and their significant others were interviewed by Port *et al.* (2001) on admission to a care home. Contact was assessed by rating the number of days, over a two week period, the resident had contact with family members, friends and neighbours. The findings indicated a decrease in contact following admission to the care home. The study, however, examined contact in the two weeks prior to and following admission. These results are therefore hard to generalise as one might expect increased contact around the time of a move. The pre-move contact may therefore have been inflated, while in the two weeks following the move it is possible that people were not visiting to allow the participant time to settle into their new home.

2.7.5 Network composition

The structure of a person's network, how many friends and family comprise it and how close the individual feels to them, is clearly important. Fiori *et al.* (2008) found that having a diverse network increased both instrumental and emotional support, as well as people's satisfaction with their networks. The composition of someone's network is likely to vary depending on whether they have any children and whether they have members of their nuclear family who are living. Data regarding friends and family will be discussed here.

In older adults social networks are comprised mainly of close family and friends and in terms of close family most people name immediate family (Fingerman & Birditt, 2003; Wenger, 1997). Reviewing a number of studies across Europe, Wenger (1997) conclude that most people would turn to their spouse for informal help, followed by adult children, other family members, friends and finally neighbours.

In a study looking at whom black Americans would seek support from in an emergency Taylor *et al.* (1988) found the majority would turn to immediate family, which they defined as 'parents, siblings and children'. Older respondents were found to rely more on adult children. Those who had been widowed were more likely to rely on in-laws and less likely to rely on children than those who were still married. It should be noted, however, that only 20 per cent of the sample fell in the oldest age group which was defined as over 56 years and ages in this group ranged from 56 to 94. Interpreting the findings in terms of an older adult population is difficult, for example those widowed earlier in life may not rely on their children because either they have none or any children may still be dependent on them.

Neyer and Lang (2003) examined subjective closeness in relation to genetic relatedness. They used data from the Berlin Aging Study, the Successful Aging Project and also a sample of 200 older adult twins. Subjective closeness of network members was measured using the network mapping procedure and was found to correlate with the genetic relatedness of the individual. Received support from genetically related members was also higher and social support was found to be highest for partner relationships, followed by closest kin. The authors noted that as self-report measures were used, the responses may have been influenced by social desirability, in other words people may believe it is socially desirable to be close to your family. The data was all gathered as part of larger-scale German studies however, and in western societies friendships may be valued more as they are voluntary, whereas family ties may be viewed as obligatory.

If nuclear families and genetic relatedness are important, those without children may be at increased risk of having limited social support in old age. Support for both the convoy model and socioemotional selectivity theory comes from Wagner *et al.* (1999), who reviewed studies which compared people who were parents and those who were not. Although not all of the studies were with older adults, issues relevant to the current study were raised. They cited literature suggesting that those with no children received less informal help (Goldberg *et al.*, 1986; Hays, 1984), had higher levels of social isolation

(Bachrach, 1980; Ishii-Kuntz & Seccombe, 1989) and tended to invest more in other relationships such as siblings (Cicirelli, 1982; Taylor *et al.*, 1988) when compared to people who were parents. In addition, for those aged over 70, parenthood was the most frequently reported role relationship in their social networks (Wagner *et al.*, 1999), suggesting that with age this role is increasingly important and valued, perhaps as widowhood becomes more common. This is consistent with the socioemotional selectivity theory which predicts that as people age they will invest more on emotionally meaningful relationships. These findings imply that this will tend to be nuclear family, especially children and for those with no children siblings.

In keeping with this, as age increased Shaw *et al.* (2007) found less contact with friends but stable contact with family. The goals deemed important in older age are perhaps met best by family and in terms of socioemotional selectivity theory perhaps family can better meet emotional needs than friends.

Not having children may lead to an increase in one's social network. For example, Lang and Carstensen (1994) found those with no nuclear family available compensated by increasing the number of social partners. The authors suggest this helps to ensure they have contact with others which meets their emotional needs and aids in the adjustment to the demands which accompany old age. In keeping with the convoy model they may be adjusting their social network to reflect their changing needs.

In contrast Ishii-Kuntz and Seccombe (1989) found that older adults who were childless had less extensive networks than parents whose child had left home. In this study the authors analysed only the overall neighbour score. This included two items which were rated from one to ten and then a third item which was the total number of friends. In terms of considering the support network it would be helpful to know about the total number of friends, unfortunately this information is not available.

The difference between the two studies (Lang & Carstensen, 1994 and Ishii-Kuntz & Seccombe, 1989) could be due to personality traits of the individual participants. It seems likely that childless older adults with extroverted personality traits may compensate for a lack of nuclear family by extending their social network of friends. Those with introverted personality traits on the other hand may naturally be more socially isolating.

Single, childless, non-institutionalised women aged over 65 were interviewed about social support by Goldberg *et al.* (1986). Respondents reported more contact with friends than family. Over half of the sample had at least five friends to whom they felt close. The authors state that there were no significant differences found regarding social support in terms of loneliness and personal problems between women who were widowed, divorced and never married. This would be in keeping with the convoy model as their networks may change to adapt to new situations. Details of the statistics used in this study and the average ratings given are not however provided in the paper, requiring these findings to be interpreted with caution.

It is not possible to determine from current research whether those with no children have always had a larger network, which could be explained by the convoy model as helping to ensure their needs can be met. With age the socioemotional selectivity theory would predict pruning of network to prioritise socially meaningful relationships. Consequently, it would be interesting to explore any differences between those with and without nuclear families.

The findings of Gurung *et al.* (2003) fit with both the socioemotional selectivity theory and convoy models. Using data from the MacArthur Studies of Successful Aging they found that over a two year period there had been a pruning of the total network but not of close others and there had been no decrease in social support. This fits with socioemotional selectivity theory as smaller network which can help meet short term goals has been prioritised. In terms of the convoy model there has been a change in the composition of the network to ensure that their needs can best be met. Only participants with a living spouse were included. While instrumental support was rated highest from a spouse in both males and females, there was a gender difference for emotional support. Males received this mainly from their wife, whilst females got it mostly from friends and relatives and children. This study had 'friends and relatives' as one response so it is not possible to tell from the findings by whom the females felt most supported. The generalisability of the findings are limited as only those with a living spouse were included, something which might not be the case for many older adults living in residential care and eligible for the current study.

2.7.6 Composition of support network in residential care

A number of studies have examined from whom nursing home residents felt they received social support. Support from family, friends and staff may be important. As discussed

already there is often a change in the composition of the social network as people age and family ties can become increasingly important.

2.7.6.1 Family

Social support from family, and contact with family have both been found to be positively correlated with quality of life in nursing home residents (Tseng & Wang, 2001; Greene & Monahan, 1982; Mitchell & Kemp, 2000; Gaugler & Kane, 2001). Other studies have found, however, that life satisfaction is not effected by contact with family (Street *et al.*, 2007) and that perceived support from peers is more associated with well-being than support from family (Carpenter, 2002). Fessman and Lester (2000) found contact with family was not related to depression or loneliness, but relationships with other residents was.

Investigating the optimal amount of support from family, Silverstein *et al.* (1996) found that, while there were psychological benefits of moderate levels of support from adult children, older adults valued their autonomy and high levels of support reduced wellbeing.

The apparently contradictory findings in the above studies may be explained by differences in the samples of residents studied. In terms of the convoy model fellow residents may help meet their social needs and help to buffer against depression. For some individuals new friends may be prioritised as they meet short term goals (socioemotional selectivity theory). Other people may have closer bonds with their family and therefore value support from family over that from peers.

The proximity of family is associated with the amount of help provided and frequency of visits (Gaugher & Kane, 2001). This is something which is largely ignored in the literature despite the fact that older people may select a home because it is close to their family. The amount of time in care may also be important, Bitzan and Kruzich (1990) found those living in care longer received fewer visits. The quality of relationships with family is also likely to have an influence and again appears to have been ignored in the literature.

2.7.6.2 Friendships/ peers within the home

Friends have been shown to be of more value as part of elderly women's support systems than family (Greenberg *et al.*, 1999). Friends are especially important in maintaining

psychological well-being for older women living alone (Aday *et al.*, 2006) and for older adults with arthritis (Payne *et al.*, 2006).

The literature regarding friendships in residential care will now be examined. The selection of samples in such studies is important. Wayne *et al.* (1991) suggest admission samples may not be representative as they include many short stay residents. Support provided to short stay residents may differ to that provided to long stay residents, for example short stay residents may maintain friendships outside the home and invest less in friendships with other residents. For example, someone admitted to a care home following a fall may return to their own home once they are mobile enough to self-care. Where research has interviewed people on admission to the home they have not differentiated between these residents, who are likely to maintain links to the community which they plan to return to, and long-stay residents for whom the residential setting is now their home.

Retsinas and Garrity (1985) found 35 per cent of residents in a home had '*no identifiable friends*' (p. 376) within the home, the median number was one and the maximum six. They also found that the longer people had been in the home the fewer friends they had. Around 50 per cent of people moving into residential care are thought to develop new friendships within the facility (Miller, 1986). About half of residents never talk to their roommates due to communication difficulties with speech and hearing (Kovach & Robinson, 1996); this study also found that for those who did talk rapport with their roommate was related to life satisfaction. Sharing a room with non-kin is related to lower life satisfaction (Street *et al.*, 2007).

Less depression and loneliness has been found in older adults who have close relationships with fellow residents (Fessman & Lester, 2000). Support from peers seems particularly important and correlates better with wellbeing than support from either family or staff (Carpenter, 2002). A possible explanation for this is that people presume that family and staff will support them and therefore support from friends may be more valued. In addition these studies only looked at friendships within the care home and it is possible that longer term friendships would be more supportive. Loneliness for example was found to be lower in people who maintained contact with former neighbours (Bondevik & Skogstad, 1996). Examining friendships in nursing home residents Gutheil (1991) found '*little intimacy*' (p. 59), with participants reporting they tended to avoid discussing personal matters with other residents and conversation was typically about the facility. This emphasises the importance

of considering functional social support and not only the structure and size of social networks.

Friends are known to be important in maintaining good mental health. In residential homes those with positive relationships with fellow residents have significantly higher life satisfaction and better quality of life (Street *et al.*, 2007). The authors note that new relationships become more important than maintaining previous friendships in terms of residents' wellbeing. It should be noted that some participants may have been relatively isolated prior to moving into a residential setting and this was not accounted for in the analyses.

While some people do not make new friends in the home for those who do these relationships can be more important than family support. Those with limited family support may be more likely to invest in new friendships. In terms of the socioemotional selectivity theory (Carstensen *et al.*, 1999) the goal of getting regular day-to-day support may best be met by fellow residents.

2.7.6.3 Staff

Perceived support from staff does not appear to have such an impact on well being as support from peers (Carpenter, 2002). A positive relationship with staff and perceived support from them is however linked to well being (Cummings, 2002). Tseng and Wang (2001) also found a positive correlation between perceived social support from staff and quality of life. While participants will not be directly asked about staff in the current study, it is possible that residents may include them as part of their social network. Staff may be important in terms of a person's social convoy. If they are socially isolated then they might turn to staff for social support and be buffered from stress by feeling that staff are there for them in times of need.

2.8 Functional support

The function of networks with similar structures can vary between individuals and it is therefore important to consider both structure and function (Fiori *et al.*, 2008). Functional support is comprised of both practical and emotional support (Power *et al.*, 1988). Emotional support includes how much the individual feels they can trust the other person

and whether they can share their feelings with them. Practical support includes practical help and time spent with the person socially.

In a study using a longitudinal, within-subjects design Shaw *et al.* (2007) found with increasing age the amount of emotional support received was relatively stable, while practical support received increased with age. Social support was assessed using general questions about how often the participant had received various types of support from others. Whether people feel support would be there if they required it may be just as important as the amount of support they actually received and this was not measured. In addition this study found that with increasing age people were less satisfied with the support they received, suggesting expectations increase with age.

Results from another longitudinal study, by van Tilberg (1998), were similar. They asked participants to rate people in their social network on a four-point scale for the amount of emotional and instrumental support they felt they received ('never, seldom, sometimes, often'). Instrumental support received was found to have increased over the four years and emotional support received remained stable. This study only asked people to rate the ten individuals in their network whom they had most contact with, these would not necessarily be the people who provide them with the most support. For example, as people get older they may feel more supported by family, yet have most frequent contact with neighbours. The study did not account for this.

Perceptions of emotional support, which examines more functional aspects of social support, also change following a move into residential care. Relocation in older adults can lead to feelings of loneliness and isolation, for example on discharge from hospital to home (Johnson, 1996).

During the first 12 months of living in a residential home Patterson (1995) found little change in perceived social support. A qualitative design was used, with interviews administered four times during the 12 months. Changes in support following a move into care were not however examined as the support received prior to the move was not looked at. Patterson (1995) found participants who had been in a residential home for a least one year perceived social support from nurses as higher than from family. Perceived social support from family was found to decrease over time. There was no mention of emotional support from family, rather practical support such as buying things and taking them on outings away

from the home. The study used a semi structured interview and asked what participants found '*helpful*' and this may have biased responses to more practical types of support. It is possible that emotional support, while valued, was expected from family anyway and therefore not rated. It should also be noted that there is a question of generalisability of this data as only 12 residents were involved.

In contrast Tseng and Wang (2001) found perceived social support was highest from family, compared to nurses and roommates. The study was completed in Taiwan however so the issue of filial piety needs to be considered. Filial piety refers to a respect for one's parents and a sense of duty to care for them; a virtue in Chinese culture. It may therefore be a cultural issue that families there feel more obliged to provide support and this would explain the difference between this study and research conducted in westernised cultures.

It is interesting to note that perceptions in staff may be different. In a study by Asby (1999) social workers and nurses were asked to rate available support for residents. They reported more emotional support than behavioural support to be available. This research was published as a dissertation abstract and it is not clear what measure they used, nor whether they were rating support from family, friends or staff.

2.9 Quality of social support

Much of the literature has focused on the quantity of support available. While the studies reviewed above have found social support to be linked with improved wellbeing increased social support at times of stress are not always positive. If family relationships are negative then this could add to an individual's stress (Burg & Seeman, 1994). An individual's support network can also encourage unhelpful coping styles such as drinking alcohol or smoking, which have a negative impact on wellbeing (Burg & Seeman, 1994).

In a prospective study examining social support and difficult life events Henderson (1981) found that perceived support buffered against adversity. The findings indicated that the perception of social support being available in difficult times was more important than the number of social relationships.

Satisfaction with the social support received was measured by Power *et al.* (1988) by comparing actual and ideal ratings of support, using the Significant Others Scale. They

found that in depressed participants the ideal ratings of support were significantly higher than for non-depressed participants, implying they had higher expectations. The actual levels of support were similar for both the depressed and non-depressed group. Lam and Power (1991) used the same measure in a community sample of adults aged over 65 years. They found that compared with the working population older adults had fewer close relationships but they were equally satisfied with the support received. When the sample was split into a depressed and non-depressed group, using scores on the Geriatric Depression Scale, the non-depressed group was found to have significantly higher levels of perceived practical and emotional social support.

This implies that while the structure of an individual's social network may be important the quality of social support received should also be considered. This can be done by examining the functional social support received and also the individual's satisfaction with this support.

2.10 Summary

Due to increasing life expectancy and changes in our society there are increasing numbers of people moving into care homes. Social support helps maintain psychological wellbeing. In keeping with the convoy model literature suggests that when people have moved into care the structure of their social networks and the amount of social support received may change. Moving into care may lead to a change in the perception of time remaining and thus, according to the socioemotional selectivity theory, a prioritisation of emotionally meaningful goals. The literature suggests a change in network size, with the peripheral network being pruned and contact with less important network members decreasing with age and perhaps also following a move into care. The amount of social support received and how satisfied individuals are with this have also been found to correlate with wellbeing.

2.11 Rationale for the current study and research hypotheses

Current research and changing population demographics have raised questions regarding social support in older adults and whether this is affected by moving into residential care. The literature reviewed implies that following such a move there is likely to be a change in social network, with the closest and most important people remaining fairly constant but those in the periphery of someone's network becoming less important. The aim of the

current study is to determine whether there is a perceived change in social support received following a move into residential care.

The clinical implications for answering this question are that feeling unsupported is linked to depression. If it is found that people living in residential homes do feel supported then negative perceptions about moving into care could be challenged. This could also aid the potential guilt felt by family members of placing someone in care.

2.12 Hypotheses

The following hypotheses are based on the literature reviewed above.

2.12.1 Hypothesis one: Perceptions of social support following move into residential care

Hypothesis 1a: It is hypothesised that perceptions of total network size, measured using the network mapping technique, will change following the move.

Hypothesis 1b: It is hypothesised that inner network size, measured using the network mapping technique, will change following the move.

Hypothesis 1c: It is hypothesised that peripheral network size, measured using the middle and outer network ratings on the network mapping technique, will change following the move.

Hypothesis 1d: It is hypothesised that perceived emotional support received from a significant other, as measured by the Significant Others Scale, will change following the move.

Hypothesis 1e: It is hypothesised that perceived practical support received from a significant other, as measured by the Significant Others Scale, will change following the move.

2.12.2 Hypothesis two: Perceived contact with social network following move into residential care

Hypothesis 2a: It is hypothesised that contact with total network, as measured by the number of people rated as having contact with weekly or more, will change following the move.

Hypothesis 2b: It is hypothesised that contact with total network, as measured by the number of people rated as having contact with monthly or more, will change following the move.

2.12.3 Hypothesis three: Association of depression with perceived social support.

Hypothesis 3a: It is hypothesised that depression will be negatively associated with perceived structural social support, as measured by correlations between score on the geriatric depression scale (GDS) and ratings of total network size.

Hypothesis 3b: It is hypothesised that depression will be negatively associated with perceived functional social support received from a significant other, as measured by correlations between score on the GDS and ratings of current actual social support on the Significant Others Scale.

3 METHOD

3.1 Description of the study

This study sought to evaluate systematically the impact of moving into residential care on perceived quality and quantity of social support. A quantitative, cross-sectional, within-subjects design was used. A network mapping procedure, described below, and questionnaires were used to obtain current and retrospective ratings of social support from residents of care homes. Variables examined were residents' perceptions of the size of their social network, structure of their social network and contact with members of their social network. Measures of these variables were obtained with regard to perceptions of how things were at the time of interview and also prior to the move into care.

Care home residents were asked to identify a significant other whom they felt provided them with the most help and support. These dyads, of participants and their significant other, were asked to rate the amount of support they felt the significant other provided, both prior to and following the move into residential accommodation.

3.2 Description of Participants

In total 40 participants were recruited. Details of the sample are presented in the results section.

3.2.1 Inclusion and Exclusion Criteria

3.2.1.1 Inclusion Criteria

- Participants had to be 65 years old and over. This is the cut-off generally used for older adult services in the NHS. Those under 65 living in residential care are likely to have different issues from those over 65 and this could confound the results.
- Participants had to be able to provide written informed consent.
- Participants had to be cognitively able to be interviewed or complete questionnaires.
- Participants had to be living in a residential home for at least six months (to allow time for adjustment to their new living situation).

3.2.1.2 Exclusion criteria

- Participants were excluded if they scored less than 24 on the Mini Mental State Examination (MMSE).
- Participants were excluded if they had a diagnosis of dementia.
- Participants were excluded if they had a diagnosis of psychosis or were actively receiving antipsychotic medication.
- Participants were excluded if they were identified as having current alcohol or substance misuse problems.

3.3 Ethical Considerations

As this project was a research evaluation study and could in no way be characterised as audit or service evaluation, formal application for ethical approval to carry out this study was made to the local NHS via the Integrated Research Application System for ethical applications. Approval was granted on the 8th June 2009 and this letter is shown in appendix one. The NHS ethics route was chosen because due to physical health issues many care home residents are regular users of the NHS. Approval was also obtained from the local council to include homes managed by the council, permission was granted on 14th November 2009 (see appendix one).

Each participant's GP was informed that they were participating in the study. For those participants who scored in the symptomatic range on the screening measure for depression (Geriatric Depression Scale, Yesavage *et al.*, 1983), permission was sought to inform their GP about their low mood.

For the significant others, thinking about how their role had changed following the move of their relative or friend into care could potentially have been distressing. Information about VOCAL (the Voice of Carers Across L.....), a local support organisation for carers was therefore given in the significant other information sheet (see appendix two). VOCAL agreed to this and were able to offer advice, information and also had a counselling service.

3.4 Procedure

3.4.1 Pilot study

A pilot study was completed to assess the ease of completion of the questionnaires with this age group. Participants from two residential homes were used to pilot the study, resulting in a total of six people completing the pilot phase. Feedback was requested about the information sheet, any difficulties with completion and the process of participation (see appendix three).

Based on these data the following changes were made to the study design. Of the six participants in the pilot study only one was able to complete the questionnaires independently. Questionnaires were therefore completed with the help of the researcher, over two visits, taking between one-and-a-half to two hours. The study design was therefore changed slightly, so all questions were asked by the researcher as part of a structured interview. In order to make this feasible, and because feedback indicated people had felt the interview should be shorter, the number of questions was reduced. Changes were made prior to recruitment of further participants and the local NHS ethics and research and development departments consulted (see appendix one).

After the pilot stage of the study two questionnaires which were not essential to the examination of the main research questions were subsequently removed from the research interview. These were the Geriatric Anxiety Inventory (Pachana *et al.*, 2007), a 20-item self-report measure of anxiety in older adults and the World Health Organization Quality of Life, brief (WHOQOL- Bref) (Murphy *et al.*, 2000). This is a 26-item self rated scale of quality of life.

During the pilot study people found rating up to six people on the Significant Others Scale repetitive and most only chose to rate one person. As such for this study, after consultation with the ethics committee and supervisors, only one identified significant other was considered in the main study.

3.4.2 Measures

Both standardised and non-standardised measures were used. All were self-report measures.

3.4.2.1 Mini Mental State Examination (MMSE) (Folstein *et al.*, 1975)

This brief cognitive screen assesses orientation, registration, attention, recall, calculation and language. A cut-off of 24/30 is taken to indicate possible cognitive deficits and people who scored less than 24 were not included in the study. Folstein *et al.* (1975) showed test re-test reliability was good, $r = 0.89$ ($p < .0001$) in a 24 hour re-test. Convergent validity has also been shown to be good, when compared to Wechsler Adult Intelligence Scale Performance IQ, $r = 0.66$ ($p < .001$) (Folstein *et al.*, 1975).

3.4.2.2 MMSE- blind (Busse *et al.*, 2002)

This 16-item version of the MMSE has those items from the full MMSE which require vision removed. No details of test re-test reliability are given. A cut-off of 16/22 was used to exclude participants with a possible dementia. This cut-off gives a specificity of 0.95 (Busse *et al.*, 2002) when compared to the score on the full MMSE, indicating good convergent validity. The MMSE-blind was used only with participants who were significantly visually impaired and in total this was one participant.

3.4.2.3 Significant Others Scale (Power *et al.*, 1988).

3.4.2.3.1 Current Ratings

This scale assesses two emotional and two practical social support functions in people identified by the participant. For every social support function each person is rated in terms of the level of support received and what their ideal level of support would be. Ratings are made using seven-point Likert scales from 1 (never) to 7 (always) (see appendix four). Scores are then calculated for actual and ideal levels of emotional support and practical support. Power *et al.* (1988) found test-retest reliability ranged from 0.73 – 0.83 on the four summary support scales (actual, ideal, emotional, practical). Power *et al.* (1998) found that scores on the Significant Others Scale distinguished between depressed and non-depressed respondents and this has been taken to show the scale has good validity (Lam & Power, 1991). This version of the four item form has been used successfully with an older adult sample (Lam & Power, 1991).

In this scale up to seven people can be rated. For the purpose of this study participants were asked to identify one significant person in their life who they felt provided them with the most help and support. With this person in mind they were asked to rate current perceived social support and satisfaction with this by completing the Significant Others Scale current.

With permission from the first author (M.Power) the scale was altered slightly to create a retrospective version and also significant other current and retrospective versions. These are discussed below.

3.4.2.3.2 Retrospective Ratings

This was used to assess the participant's perceptions of social support prior to the move, again from the identified significant other. The questions were reworded to ask about support they felt they received prior to the move. For example, 'does he/she give you practical help?' became; 'before you moved into residential care did he/she give you practical help?' rated from 1 (never) to 7 (always) (see appendix four).

3.4.2.3.3 Significant Other Current Ratings

This was used to measure the significant other's perception of the support they provided to the participant currently. It was completed by the significant other and the questions were reworded to ask about the support they felt they were providing to the participant. For example, 'do you give him/her practical help?' rated from 1 (never) to 7 (always) (see appendix four).

3.4.2.3.4 Significant Other Retrospective Ratings

This was used to measure the significant other's perception of the support they provided to the participant prior to the move into care. It was completed by the significant other and the questions were reworded to ask about the support they felt they had provided to the participant prior to the move. For example 'before they moved into a residential home did you give him/her practical help?' rated from 1 (never) to 7 (always) (see appendix four).

3.4.2.4 Network Mapping (Antonucci, 1986)

A structured interview was used, as described by Antonucci (1986), to produce a hierarchical network map. This provided a measure of the participant's perceived network. The participant was shown three concentric circles with 'you' written in the middle (see appendix five). The circles were used to symbolise the degree of closeness the person felt to members of their social network. Each participant was asked to give the names of 'people so close and important it is hard to imagine life without them' and these were written in the centre circle. For the middle circle they placed 'people to whom you may not feel quite that close but are still very important to you' and in the outer circle 'people who are close enough and important enough in your life that they should be placed in your personal network.' As the number of people identified in the middle and outer circles were low, they were combined to obtain a peripheral network size. This measure has not been standardised and there is no data on reliability or validity. As network size may change over time test re-test data would be difficult to interpret, while convergent validity has not been established the measure appears to have good face validity for measuring perceived network size.

Information was then gained regarding the relationship to (family/ friend/ acquaintance) and amount of contact with those named. Participants were asked to rate contact on a nominal scale (i.e. every day, two- three times per week, weekly, every two weeks etc.) See appendix six for details. The number of people seen at least weekly, the number seen at least monthly and the number seen less than monthly were calculated from these ratings.

Two network maps were compiled; one for their perceived current network and one for their perceived retrospective network, in other words, that prior to moving into residential care. Data was obtained regarding network size (total, inner and peripheral network) and contact (number of people seen at least weekly and number of people seen at least monthly).

3.4.2.5 Geriatric Depression Scale (GDS) (Yesavage *et al.*, 1983)

The GDS is a widely used screening measure for depression. There are various versions ranging from 30 to 5 items, all use a dichotomous scoring format with all items answered with a yes/ no response. Test re-test reliability at one week is 0.085 (Yesavage *et al.*, 1983). Jongenelis *et al.* (2007), however, compared different versions of the GDS for use with nursing home residents. Reliability for the various formats of the GDS, as shown by the Cronbach's alphas, were as follows; GDS-8, 0.80; GDS-12R, 0.80; GDS-15, 0.79; GDS-10,

0.72. In this study the GDS-8 (Jongenelis *et al.*, 2007) was therefore used, as the reliability was high in a residential home population. Items not suitable for residential homes were removed in this measure (e.g. ‘do you prefer to stay at home rather than going out and doing new things?’). Jongenelis *et al.* (2007) recommend a cut-off score of two/ three is used to indicate possible depression. Validity of the GDS is good, with the 30 item scale correctly identifying 96 per cent of depressed cases (Yesavage *et al.*, 1983).

3.4.2.6 Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977)

The Center for Epidemiologic Studies Depression Scale (CES-D) is a 20-item self-report depression measure (Radloff, 1977). The scale asks an individual to consider their mood over the previous week and uses a Likert response format for each item (from 0 to 3), with a score of 16 and above indicating depression. This scale was chosen to assess depression in the significant other as it has good reliability across age groups. Test re-test reliability was 0.49 in participants aged 50 to 59 and 0.54 in those aged over 60 years (Lewinsohn *et al.*, 1997). Specificity for major depression was 0.88 in a community sample of older adults (Beekman *et al.*, 1997), indicating good convergent validity.

3.4.2.7 Demographic questionnaire

A demographic questionnaire was developed specifically for this study. It included questions regarding gender, age, marital status, current and previous living arrangements, current health and relationship to an identified significant other (see appendix seven). Some of these questions were based on a demographics form developed as part of a 24 centre European Union Grant sponsored by the World Health Organization (K.Laidlaw, personal communication, August 2008).

Potential reasons for moving into care were included based on findings by Allen *et al.* (1992). Ratings for quality of life used a single-item question, based on a generic item in the WHOQOL-Bref (Murphy *et al.*, 2000). The same ratings were used for rating the quality of relationship with the significant other.

3.4.2.8 Significant other demographic questionnaire

Items assessing the nature of the relationship to the participant, the time they had known and supported them and contact with them were included in the significant other demographic questionnaire (see appendix eight).

3.4.3 Procedure for the Main Study

Managers of local residential homes were contacted and provided with information about the study. Details of the GP covering the home were obtained and their permission sought to recruit residents. Those managers who agreed to be involved were invited to pass information sheets to all residents meeting the inclusion criteria (see appendix nine). In order to allow time for adjustment to their new living situation, home managers were asked to identify participants who had been living in a residential home for at least six months.

A number of participants (five in total) were incorrectly identified by home managers as meeting the inclusion criteria. The researcher did not become aware of this until towards the end of the interview. Three participants had been resident in a care home for just under six months and two participants were under 65 years of age. On visual inspection of the data, responses from these participants did not differ substantially from those who met all the inclusion criteria. After consultation with the ethics committee and supervisors it was decided to include data from these participants in the analyses (see appendix one).

An information sheet was given by a member of staff in the home to those residents who satisfied the inclusion criteria. Potential participants were given at least 24 hours to decide if they wished to participate. They had the opportunity to contact the chief investigator or an independent psychologist, not involved in the study, for further information and advice, although no-one did. Those residents who expressed an interest in participating informed the home manager. Interviews with the researcher were then arranged, via the home manager, at a time to suit the participant.

Once the study had been discussed and any questions answered, verbal consent was obtained for participation in the study and a screening questionnaire, the MMSE (Folstein *et al.*, 1975) was completed. Those scoring less than 24 (the suggested cut-off for possible dementia) were not included in the study and permission was sought to inform their GP and home

manager that they had scored below the suggested cut-off on this screening assessment. The participants were thanked for their time and the scores on this measure were explained to them. If participants had significant visual difficulties the MMSE blind was used with a cut-off of 16. Those scoring more than 24 on the MMSE (or 16 on the MMSE blind) were invited to take part in the study. In keeping with the guidance from the ethics committee informed written consent was gained at this stage (see appendix ten).

Participants meeting eligibility criteria completed a battery of questionnaires in order to test the primary hypotheses of this study. These were completed with the researcher, in the form of a structured interview. The interview took between 45 and 90 minutes to complete. Each participant was given a subject number and this was used rather than their name on the questionnaires to ensure anonymity.

Participants were asked to identify a key significant other to rate for perceived support provided prior to and following the move into residential care. A questionnaire was left with the participant to give to the person they had identified if they had regular contact; otherwise it was posted to them. The questionnaire was accompanied by an information sheet explaining the study (see appendix two). A stamped addressed envelope was provided for returning the questionnaire. To ensure anonymity a subject number was pre-printed on the participant and significant other questionnaires so that responses from each dyad could be matched.

3.5 Data analysis

Data was analysed using SPSS (Statistical Package for the Social Sciences version 17). Data was displayed graphically using Microsoft Excel.

3.5.1 Statistics used

Descriptive statistics were used to report the demographic data. Non-parametric statistics were used as the data was found not to fit the normal distribution; details are given in the results section (4.2). Wilcoxon signed rank tests were used to explore differences between current and pre-move ratings. Spearman's rho correlations were calculated to examine the relationship between depression, cognition and age on social network size and on perceived social support.

A number of analyses were conducted to examine simple effects. In order to reduce the risk of a Type I error, Bonferroni adjustments were used. Details are given in the results section (4.3).

3.5.2 Analytic strategy

As noted above the data was not normally distributed and non parametric statistics were therefore used. It should be noted that non-parametric statistics are more conservative than if parametric had been used and may therefore have less power. The previous literature in this area was limited and the hypotheses of the current study therefore predicted change but did not state the direction. Two-tailed statistical tests were used in this study as they highlight any difference, irrespective of the direction of change.

3.5.3 Hypothesised sample size

Initial power calculations were based on two separate studies identified in the introduction (Port *et al.*, 2001; van Tilburg, 1998). While neither study provided an optimal fit for calculating the hypothesised sample size in the current study, they did permit power calculations to be calculated that were consistent with the aims of the current study. There were no previous studies available which had used the same methodology as the current study. The studies by Port *et al.* (2001) and van Tilburg (1998) were chosen for the initial power calculation because, unlike that other studies reviewed, they used a within subjects design. In addition a further calculation to hypothesis sample size was also completed using data from the pilot study. Based on these calculations (see appendix eleven), assuming a medium effect size, an alpha of 0.05, power of 0.80 a hypothesised sample size of 60 would be required for Wilcoxon and of 70 for Spearman rank correlation. Details of power calculations using data from the current study can be found in the results section (see section 4.5).

4 RESULTS

4.1 Sample characteristics

Overall, 40 participants were recruited to take part in this study from residential homes in the local city. There are 62 residential care homes for the elderly in this city with 27 homes approached in total. Twelve of these homes were not included, five due to the manager refusing, two had no residents who met the inclusion criteria and five homes invited residents but they were not interested in taking part. Participants were recruited from 15 different residential homes. Of these three were privately run (10 participants), eight by the council (20 participants) and four by a charity (10 participants). From these 15 homes there were a total of 721 care home residents and a total of 40 were recruited to participate in the study, see figure 1 for details.

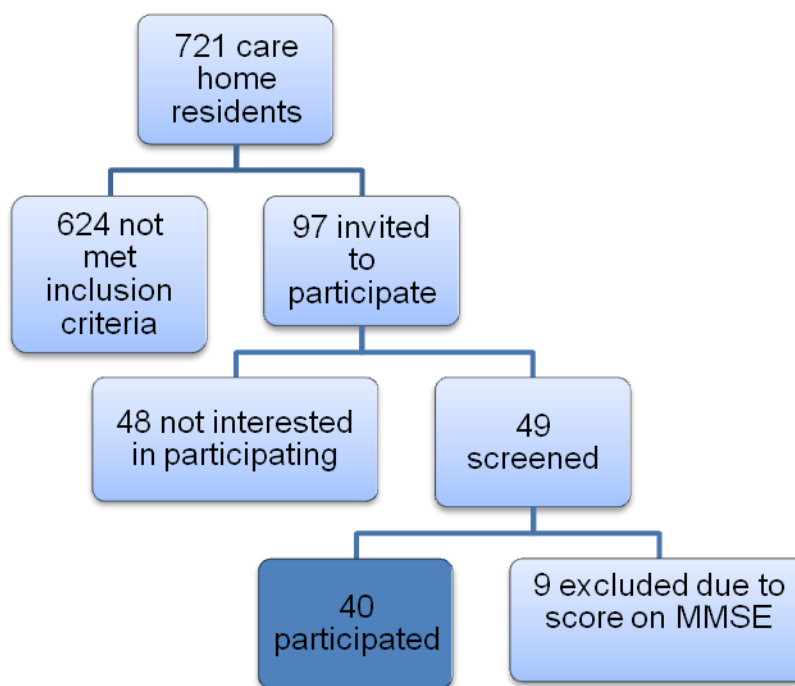


Figure 1: Flow chart of participants recruited

4.1.1 Demographic information

Demographic information regarding the care home residents who participated in this study is displayed in table 1. The mean age of participants was 80.5 (standard deviation, SD = 8.96). There were 20 males (50 per cent) and 20 females (50 per cent). The mean MMSE score was 26.8 (SD = 1.74). All respondents had received some degree of education. The highest

level of education received was as follows: primary school for 4 participants (10 per cent); secondary school for 27 (67.5 per cent) and tertiary education for 9 participants (22.5 per cent).

The mean score on the GDS-8 was 2.51 (SD= 2.11). Using the suggested cut-off of 2/3 (Jongeneelis *et al.*, 2007) 17 participants (44 per cent) fell in the depressed range on this scale.

The majority of participants took regular medication (82.5 per cent). The mean number of medications taken daily was 7.84 (SD = 6.15). Most respondents however perceived themselves as healthy (85 per cent) rather than unhealthy (15 per cent).

Participants included both friends and family in their social network. In the current social network eight participants (20 per cent) included staff from the residential home, who they classed as friends. Three participants (8 per cent) included friends who were residents of the home and they had met following the move.

Further demographic information is provided in table 1. From this it can be seen that the majority of participants were widowed (57.5 per cent), a large proportion had been living independently prior to the move into care (57.5 per cent) and the most common reason for moving into care was deterioration in physical health (47.5 per cent). Data from table 1 also shows that quality of life was generally perceived as good (47.5 per cent) or very good (20 per cent).

Table 1: Demographic information (of residents)

Demographic		Mean	SD
Age		80.5	8.96
MMSE		26.8	1.74
Number of medications		7.84	6.15
GDS-8		2.51	2.11
Demographic	Response	Total	%
Gender	Male	20	50
	Female	20	50
Level of education	Primary school	4	10
	Secondary school	27	67.5
	Tertiary	9	22.5

Demographic	Response	Total	%
Perception of own health	Healthy	33	85
	Unhealthy	6	15
Currently prescribed regular medication	Yes	33	82.5
	No	7	17.5
Current marital status	Single (never married)	8	20
	Married	3	7.5
	Separated/Divorced (not currently partnered)	6	15
	Widowed	23	57.5
Living arrangements prior to moving into residential care	Living at home (supported by family/carers or partner)	5	12.5
	Living with family but not in own home	2	5
	Living at home (unsupported by family/carer or partner)	23	57.5
	Living in sheltered housing/community care	9	22.5
	Living in a long-stay in-patient ward (hospital)	1	2.5
Total time in residential care	Less than 6 months	3	7.5
	6 months - 1 year	8	20
	1 – 2 years	13	32.5
	More than 2 years	16	40
Reason for moving into residential care:	Following a fall/ fracture	9	22.5
	Deterioration in physical health	19	47.5
	Deterioration in mental health	2	5
	Following an acute illness	1	2.5
	Pressure on informal carer	2	5
	Loneliness	5	12.5
	Other	2	5
Current Quality of Life	Very poor	3	7.5
	Poor	2	5
	Neither poor nor good	7	17.5
	Good	19	47.5
	Very good	8	20
	Missing data	1	2.5
Previous Quality of Life	Very poor	1	2.5
	Poor	4	10
	Neither poor nor good	6	15
	Good	11	27.5
	Very good	9	22.5
	Missing data	9	22.5

4.1.2 Significant others

The significant others identified were mainly family members (74 per cent, see table 2 for details of relationship to participant) and had largely known the participant for over 10 years (78 per cent).

Table 2: Relationship to significant other

Significant other's relationship to the participant	Identified significant other (as rated on the SOS)		Significant other invited to participate		Significant other returned questionnaire	
	Total	%	total	%	total	%
Wife	1	2.5	1	4	1	6
Ex- wife	2	5	1	4	0	0
Brother	1	2.5	1	4	1	6
Sister	1	2.5	1	4	1	6
Son	5	12.5	4	17	1	6
Daughter	12	30	11	46	7	44
Other family member	6	15	2	8	3	19
Friend	8	20	3	13	2	13
Staff	2	5	0		0	
Missing data	2	5				
Total	40	100	24	100	16	100

From table 2 it can be seen that a total of 24 significant others were invited by participants to take part in the study. Those who chose not to invite their significant other to participate cited a reason that they did not wish to burden them. Of the 24 invited to participate 16 (67 per cent) responded. Those who responded were mainly immediate family (one wife, one brother, one sister, one son and seven daughters), three were other family members and two were friends.

They had all known the participant for over ten years. Scores on the CES-D fell in the depressed range for two significant others. For nine the score was below the cut-off; suggesting that they were not depressed. Five significant others did not complete the CES-D, with one person noting that they did not feel it was relevant for them.

Table 3: Ratings of quality of relationship between participant and significant other

	Quality of relationship with significant other				Significant other rating of quality of relationship with participant			
	Current		Retrospective		Current		Retrospective	
	total	%	total	%	total	%	total	%
Very poor	1	2.5	0	0	0	0	0	0
Poor	0	0	0	0	0	0	2	13
Neither poor nor good	0	0	1	2.5	0	0	0	0
Good	6	15	5	12.5	2	13	2	13
Very good	22	55	21	52.5	13	87	11	74
Missing data	11	27.5	13	32.5	0	0	0	0

As can be seen from table 3 above, participants mainly perceived their relationship with the person they identified as their significant other as very good or good. Current and retrospective ratings of this were similar. Those significant others who responded all perceived the current relationship with the care home resident to be very good or good. Two of the significant others perceived the relationship to have been poor prior to the move.

Table 4: Significant other's ratings of change in contact with the participant following the move into care

	Visits		Telephone contact	
	total	%	total	%
Increased a lot	9	56	3	23
Increased a little	2	13	1	8
Stayed the same	2	13	4	31
Decreased a little	3	18	2	15
Decreased a lot	0	0	3	23

As can be seen from table 4 above significant others tended to perceive that the amount of contact they had with their relative or friend had increased following the participant's move into a residential home.

4.2 Tests of assumptions of normality

Data for each of the main variables were examined for normality. Skewness and Kurtosis scores were calculated, histograms visually inspected and Kolmogorov- Smirnov analyses were also completed. Details can be found in appendix twelve.

Data were found not to be normally distributed for a number of variables measured. Based on these explorations of the data non-parametric statistics were used to examine differences in ratings for current and retrospective ratings. In order to ensure consistency non-parametric statistics were used for all analyses.

4.3 Bonferroni corrections

There is debate in the literature as to the use of Bonferroni corrections. If a large number of analyses are completed then statistically something will be found which is 'significant' and a Bonferroni correction should be used to ensure that any significant results are not due to chance alone (Bland & Altman, 1995). By adjusting the alpha-level the risk of a Type I error (rejecting the null hypothesis when it is true) is reduced (Clark-Carter, 1997; De Silva *et al.*, 2005; Pernegar, 1998).

Clinically, however, by using a Bonferroni correction the risk of making a type II error and dismissing a meaningful difference as non-significant is increased (Clark-Carter, 1997; De Silva *et al.*, 2005; Pernegar, 1998). Perneger (1998) highlight the difficulty in determining how many analyses to include when calculating the adjusted alpha-level. For example, if all analyses completed on a certain data set, across papers, were included then in large epidemiological studies the adjusted alpha-levels would be so low that statistically significant results would be very unlikely.

Morgan (2007) suggests that a Bonferroni correction be used if the null hypothesis is of greater interest than the individual hypotheses. In this study it was therefore decided to use a separate Bonferroni correction for each hypothesis. An overall alpha-level of .05 was sought; adjusted alpha-levels were calculated by dividing .05 by the number of analyses used to examine each of the main hypotheses (Clark-Carter, 1997).

4.4 Effect size

While statistical significance is important in determining whether differences in the results are due to sampling error, it is affected by sample size. The calculation of effect size provides an indication of the scale of the results which is independent of sample size. Effect sizes were calculated for each of the analyses and are presented in the results section

alongside the z-scores. As Wilcoxon signed rank tests were used the effect size was calculated using the following formula: $r = z / \sqrt{N}$ (Clark-Carter, 1997). The effect size for r was taken from Cohen (1992) who recommend $r = 0.10$ for a small effect size, $r = 0.30$ for a medium and $r = 0.50$ for a large effect size.

4.5 Estimated sample size

From the results it was evident that a number of analyses did not reach statistical significance. To aid interpretation of the results the sample size required to detect a significant difference and to achieve a given level of power was calculated. Estimated sample size was calculated using G*power (Erdfelder *et al.*, 1996). In the social sciences a power of 0.8 is generally used (Clark-Carter, 1997) and the number of participants required to reach a power of 0.8, based on the effect sizes obtained, was calculated. The alpha-level was set according to the number of analyses (hypothesis one: .01, hypotheses two and three: .025). As noted above there is some debate about the use of Bonferroni corrections, therefore the estimated sample size to reach a significant difference at the .05 alpha-level is also given.

4.6 Filtered network size

When the network map was completed it showed that there were a number of people who chose to include large groups of people in their network. This appeared to be a weakness of the network mapping procedure and illustrated how this question was dependent on the individual's idiosyncratic interpretation. For example, when thinking about clubs and social groups some participants chose to name a small number of people from the group to whom they felt close, while other participants gave an overall number for network members from the group (e.g. 20 people from art class). The total network size was examined (see appendix thirteen) and found to be elevated compared with previous literature.

Following discussions with supervisors it was therefore decided to impose a retrospective filter on all of the data obtained. For filtered data, those people who were grouped together and not explicitly named were excluded from the figures. For example, '30 neighbours' and '100 people from a Country and Western club' were excluded by the filter. There were 12 participants who had named groups such as this and details of the numbers filtered out can be found in appendix fourteen.

The use of this filter was conservative and while it reduced the figures for overall network size it had a neutral effect on the data analysis and outcome regarding changes in network size. The results regarding change in network size were similar for both filtered networks (only those specifically named) and unfiltered networks (total number identified). The results regarding total network size for filtered networks were more in keeping with previous literature and are therefore presented here (see appendix thirteen for unfiltered data).

4.7 Testing each hypothesis

4.7.1 Hypothesis One: Perceptions of social support following a move into residential care

There were five components of hypothesis one, using a Bonferroni correction an adjusted alpha-level of .01 was therefore used. Hypotheses one (a) to one (c) examined network size.

Table 5: Perceived changes in network size (filtered) and functional social support received from a significant other

Perceived	Time	Median (inter-quartile range)	z-score	<i>p</i>	Effect size	A priori predicted sample size ($\alpha = .01$)	A priori predicted sample size ($\alpha = .05$)
Change in size of total network	Current	7 (4- 11.75)	-2.658	.008	.420 **	50	31
	Retrospective	8 (4.25- 12.5)					
Change in size of inner network	Current	4 (2-5)	-1.730	.084	.274 *	148	78
	Retrospective	4 (2- 6.75)					
Change in size of peripheral network	Current	2 (0.25- 6)	-2.135	.033	.338 **	94	50
	Retrospective	3 (1- 6.75)					
Change in Emotional SS	Current	13 (11-14)	-0.239	.811	.040	7291	3860
	Retrospective	12 (12-14)					
Change in Practical SS	Current	10 (8.5-13)	-0.923	.356	.154 *	485	256
	Retrospective	11 (8-12)					

* small effect size, ** medium effect size, (Cohen, 1992).

4.7.1.1 Perceived changes in structural social support

Hypothesis one (a) stated: *'It is hypothesised that perceptions of total network size, measured using the network mapping technique, will change following the move.'* To test this hypothesis the total number of people identified in each participant's current and retrospective network were compared using a Wilcoxon signed rank test.

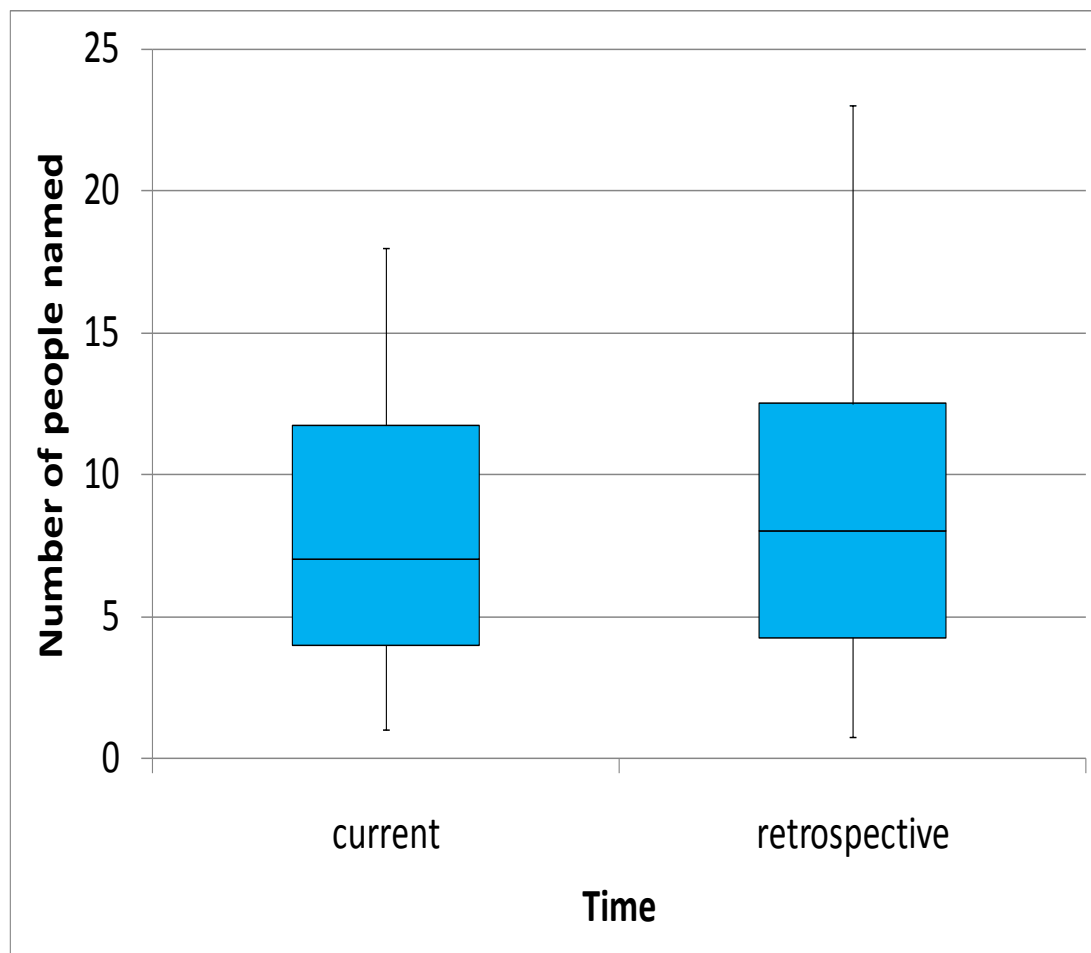


Figure 2: Perceived total network size

From table 5 and figure 2 above it can be seen that the current median network size (seven) was lower than that of the retrospective network size (eight). The Wilcoxon test was converted into a z -score of -2.658 with an associated two-tailed probability of .008.

Thus hypothesis one (a) was supported. It can therefore be concluded that total network size was perceived to be lower following the move into residential care and that such a difference is unlikely to have arisen by sampling error.

Hypothesis one (b) stated: *'It is hypothesised that inner network size, measured using the network mapping technique, will change following the move.'* To test this hypothesis the number of people identified in each participant's current and retrospective inner network were compared using a Wilcoxon signed rank test.

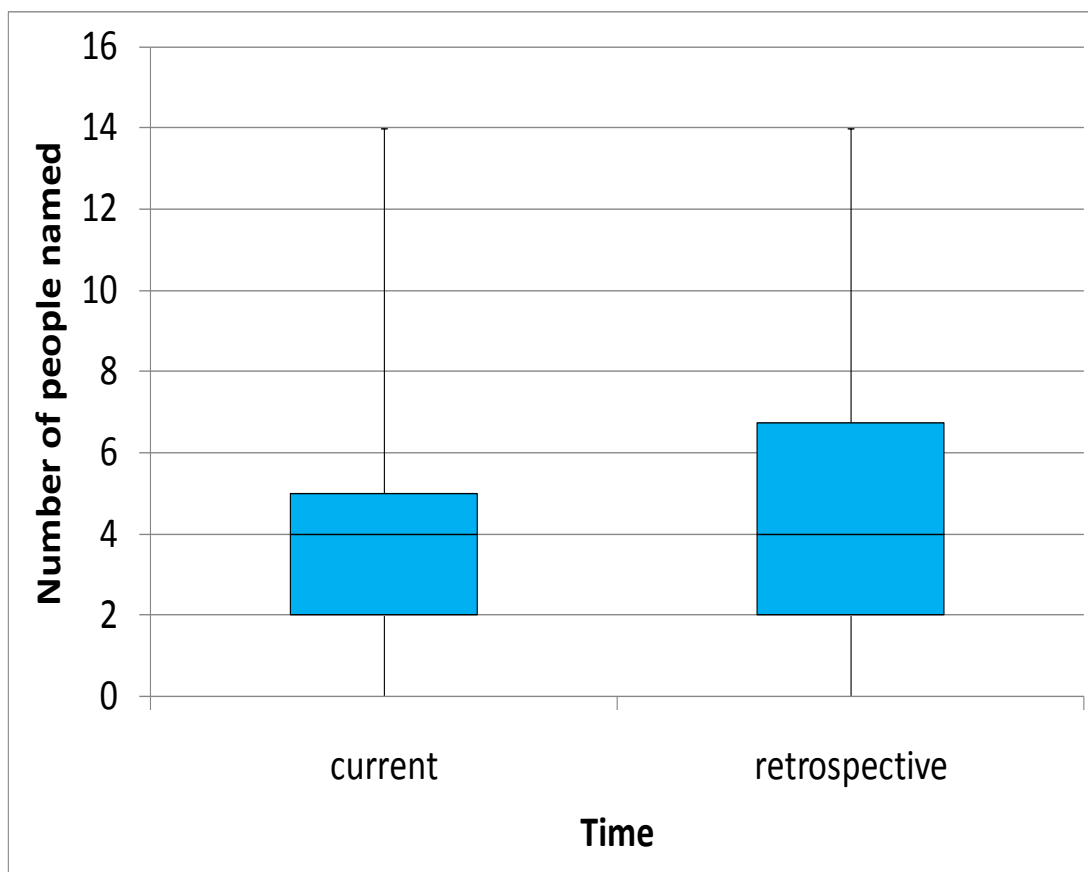


Figure 3: Perceived inner network size

From table 5 and figure 3 above it can be seen that the current median inner network size (four) was the same as that of the retrospective inner network size (four). The Wilcoxon test was converted into a z -score of -1.730 with an associated two-tailed probability of .084 (non-significant).

Thus hypothesis one (b) was not supported. It can therefore be concluded that inner network size was perceived to be similar size following the move into residential care. A small effect size was found but the high probability (p) value suggests any differences might have arisen due to sampling error.

Hypothesis one (c) stated: *'It is hypothesised that peripheral network size, measured using the middle and outer network ratings on the network mapping technique, will change following the move.'* To test this hypothesis the number of people identified in each participant's current and retrospective peripheral network were compared using a Wilcoxon signed rank test.

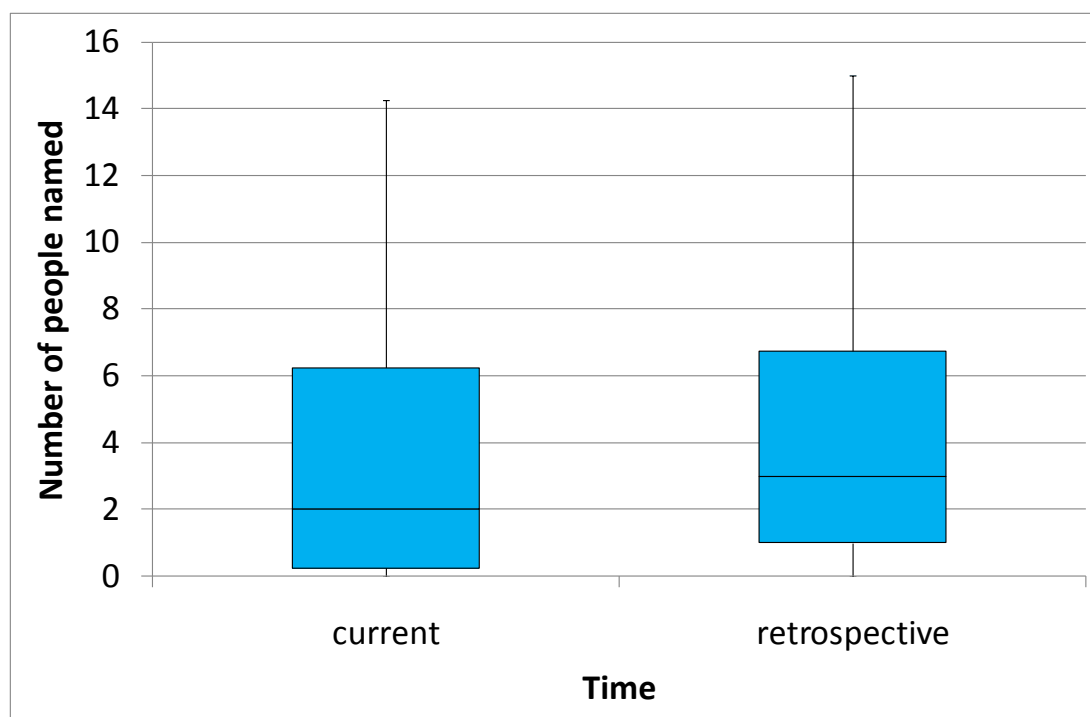


Figure 4: Perceived peripheral network size

From table 5 and figure 4 it can be seen that the current median peripheral network size (two) was not significantly different to that of the retrospective peripheral network size (three). The Wilcoxon test was converted into a z -score of -2.135 with an associated two-tailed probability of .033 (non-significant). A medium effect size was however found and the inter-quartile range indicates a high degree of variability between participants.

Thus hypothesis one (c) was partially supported. It can therefore be concluded that peripheral network size was perceived to be lower following the move into residential care but that such a difference might have arisen due to sampling error.

4.7.1.2 Perceived changes in functional social support

Hypothesis one (d) stated: *'It is hypothesised that perceived emotional support received from a significant other, as measured by the Significant Others Scale, will change following the move.'* To test this hypothesis participants' ratings for current and retrospective emotional support were compared using a Wilcoxon signed rank test.

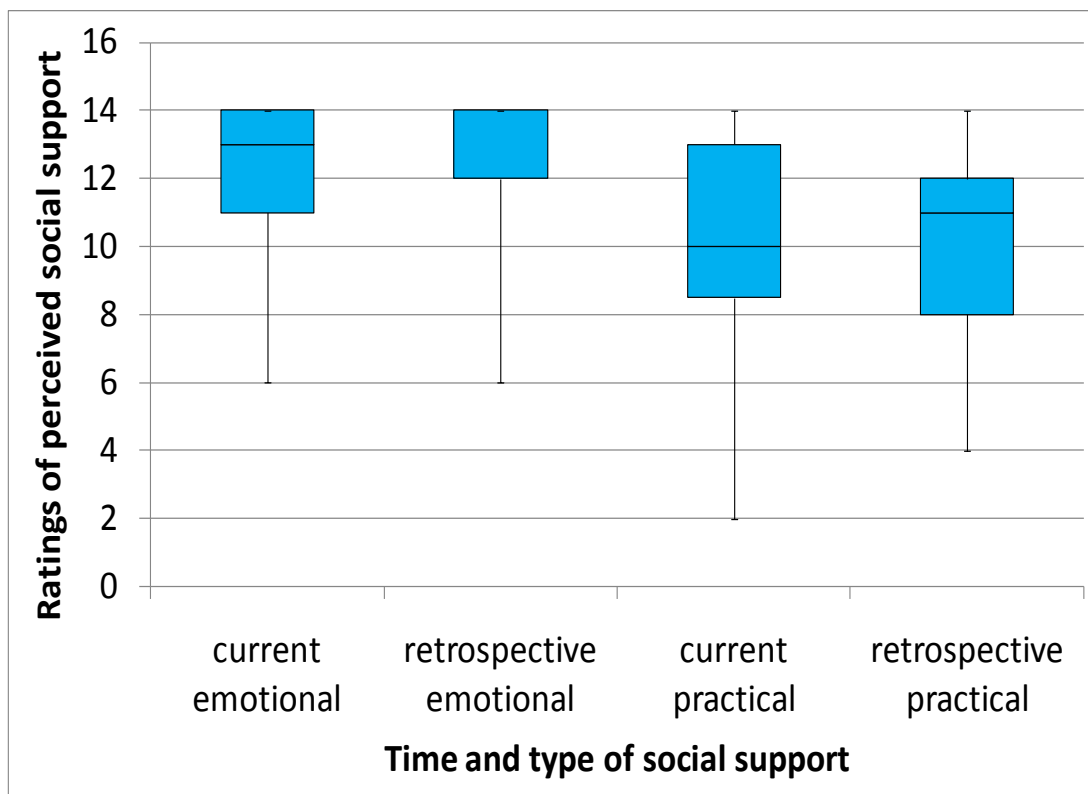


Figure 5: Perceived functional social support received from a significant other

From table 5 and figure 5 it can be seen that the median rating for current emotional social support (13) was not significantly different from that of retrospective ratings (12). The Wilcoxon test was converted into a z -score of -0.239 with an associated two-tailed probability of .811 (non-significant). Thus hypothesis one (d) was not supported. It can therefore be concluded that the level of emotional social support received from a significant other was not perceived to have changed following the move. It is evident from the graph however that there was a ceiling effect and implications of this will be considered in the discussion.

Hypothesis one (e) stated: *'It is hypothesised that perceived practical support received from a significant other, as measured by the Significant Others Scale, will change following the move.'* To test this hypothesis participants' ratings for current and retrospective practical support were compared using a Wilcoxon signed rank test.

From table 5 and figure 5 it can be seen that the median rating for current practical social support (10) was not significantly different from that of retrospective ratings (11). The Wilcoxon test was converted into a z-score of -0.923 with an associated two-tailed probability of .356 (non-significant). Thus hypothesis one (e) was not supported. It can therefore be concluded that the level of practical social support received from a significant other was not perceived to have changed following the move. A small effect size was found however, and it is possible the results were underpowered.

4.7.2 Hypothesis Two: Perceived contact with social network following a move into residential care

There were two components to hypothesis two. Using a Bonferroni correction an adjusted alpha-level of .025 was therefore used.

Table 6: Perceived contact with total network

Number of people perceive contact with:	Time	Median (inter-quartile range)	z-score	p	Effect Size	A priori predicted sample size ($\alpha = .025$)	A priori predicted sample size ($\alpha = .05$)
At least weekly	Current	2 (1- 3)	-2.452	.014	.388**	47	37
	Retrospective	3 (1-6)					
At least monthly	Current	3 (2- 6)	-1.954	.051	.309**	93	60
	Retrospective	5 (2- 7.75)					

** medium effect size, (Cohen, 1992).

Hypothesis two (a) stated: *'It is hypothesised that contact with total network, as measured by the number of people rated as having contact with weekly or more, will change following the move.'* To test this hypothesis, current and retrospective ratings of the total number of people identified as having at least weekly contact with the participant were compared using a Wilcoxon signed rank test.

From table 6 it can be seen that the median number of people participants rated themselves currently as having contact with at least weekly (two) was lower than that of the retrospective rating (three). The Wilcoxon test was converted into a z -score of -2.452 with an associated two-tailed probability of .014 and a medium effect size. Thus hypothesis two (a) was supported. It can therefore be concluded that the number of people participants believed they had contact with at least weekly was perceived to be lower following the move into residential care.

Hypothesis two (b) stated: *'It is hypothesised that contact with total network, as measured by the number of people rated as having contact with monthly or more, will change following the move.'* To test this hypothesis, current and retrospective ratings of the total number of people identified as having at least monthly contact with the participant were compared using a Wilcoxon signed rank test.

From table 6 it can be seen that the median number of people participants rated themselves currently as having contact with at least monthly (two) was lower than that of the retrospective rating (five). The Wilcoxon test was converted into a z -score of -1.954 with an associated two-tailed probability of .051 (non-significant) and a medium effect size. Thus hypothesis two (b) was partially supported. It can therefore be concluded that the number of people participants believed they had contact with at least monthly was perceived to be lower following the move into residential care but that such a difference was not statistically significant suggesting it may have arisen due to sampling error and a larger sample size is required.

4.7.3 Hypothesis Three: Association of depression with perceived social support.

There were two components to hypothesis three. Using a Bonferroni correction an adjusted alpha-level of .025 was therefore used

Table 7: Spearman's rho correlations of GDS with network size and social support

GDS and	Spearman's rho correlations	<i>p</i>	A priori predicted sample size ($\alpha = .025$)	A priori predicted sample size ($\alpha = .05$)
Current total network size	-.359 **	.012	56	44
Current actual social support received (emotional and practical from SOS)	-.525 ***	<.001	23	18

** medium effect size, *** large effect size (Cohen, 1992).

Hypothesis three (a) stated: *'It is hypothesised that depression will be negatively associated with perceived structural social support, as measured by correlations between score on the geriatric depression scale (GDS) and ratings of total network size.'* To test this hypothesis the relationship between GDS score and total network size was examined using a Spearman's rho correlation.

It can be seen from table 7 that the total network size was smaller in those participants with higher scores on the GDS. A Spearman's rho correlation indicated a statistically significant negative correlation between GDS score and total network size (Spearman's rho = -.359, $p = .012$). Thus hypothesis three (a) was supported. It can therefore be concluded that depression and perceived network size were negatively correlated, meaning the more depressed a participant was the smaller they perceived their network to be.

Hypothesis three (b) stated: *'It is hypothesised that depression will be negatively associated with perceived functional social support received from a significant other, as measured by correlations between score on the GDS and ratings of current actual social support.'* To test this hypothesis the relationship between GDS score and total network size was examined using a Spearman's rho correlation.

From table 7 it can be seen that the perceived amount of social support received from a significant other was lower in participants with a higher score on the GDS. A Spearman's rho correlation indicated a statistically significant negative correlation between GDS score and perceived current actual social support (SOS) (Spearman's rho = $-.525$, $p < .001$). Thus hypothesis three (b) was partially supported. It can therefore be concluded that depression and perceived functional support received from a significant other were negatively correlated, meaning the more depressed a participant was the less supported they felt by their significant other.

4.8 Post-hoc analyses

The relationship between total network size and cognitive functioning, as measured by the MMSE and total network size and age were examined using Spearman's rho correlations.

4.8.1 Correlations with total network size

Table 8: Spearman's rho correlation for total network size, MMSE score and age

	Total Network Current		Total Network Retrospective	
	Spearman's rho correlations	<i>p</i>	Spearman's rho correlations	<i>p</i>
MMSE	.421**	.004	.341**	.017
Age	.018	.457	.021	.448

** medium effect size (Cohen, 1992).

4.8.1.1 Mini Mental State Examination

From table 8 it can be seen that the total network size was larger in participants with a higher score on the MMSE. A Spearman's rho correlation indicated a statistically significant positive correlation between MMSE score and total network size (Current: Spearman's rho = $.421$, $p = .004$; Retrospective: Spearman's rho = $.341$, $p = .017$). It can therefore be concluded that overall cognitive ability, as measured by the MMSE was positively associated with total network size, meaning that those with higher levels of cognitive functioning had a larger perceived network size.

4.8.1.2 Age

From table 8 we can see that the total network size was not correlated with age. A Spearman's rho correlation indicated no statistically significant correlation between age and total network size (Current: Spearman's rho= .018, $p= .457$, non-significant; Retrospective: Spearman's rho= .021, $p= .448$, non-significant). It can therefore be concluded that age was not related to total network size in the current sample.

4.8.2 Significant other ratings on SOS

In an attempt to verify the participant's ratings of the social support they received from a significant other the participant and significant other ratings were compared using a Wilcoxon signed rank test.

Table 9: Comparison of significant other and participant ratings on SOS

Type of perceived social support		Median (inter-quartile range)	z -score	p	Effect size ($r= z/\sqrt{N}$)
Current emotional	Participant	13 (12-14)	-1.502	.133	.376 **
	Significant other	14 (12.25-14)			
Retrospective emotional	Participant	13 (12-14)	-0.926	.355	.232 *
	Significant other	14 (10-14)			
Current practical	Participant	11.5 (9.25-13)	-1.861	.063	.465 **
	Significant other	14 (12-14)			
Retrospective practical	Participant	11 (8.25-13.75)	-1.088	.277	.481 **
	Significant other	13 (8-14)			

* small effect size, ** medium effect size, (Cohen, 1992).

From table 9 it can be seen that there were no statistically significant differences found between the ratings given by the participant and their significant other on the SOS. Medium and small effects sizes were found however indicating that the results may have been non-significant due to the small sample size in this study.

4.8.3 Exploratory analyses of SOS participant ratings

The participant's satisfaction with the level of social support they received from a significant other was assessed by comparing the actual and ideal ratings on the SOS using a Wilcoxon

signed rank test. Differences in the type of support they perceived the significant other as providing were assessed by comparing ratings for emotional and practical social support on the SOS using a Wilcoxon signed rank test.

Table 10: Perceived satisfaction with social support received from a significant other and comparison of level of emotional and practical social support received

Perceived		Median (inter-quartile range)	z-score	<i>p</i>	Effect size ($r=z/\sqrt{N}$)
Satisfaction with current social support	Actual	23 (10-26)	-4.120	.001	- .677 ***
	Ideal	25 (22-28)			
Current type of support	Emotional	13 (11-14)	-4.289	.001	- .705 ***
	Practical	10 (8.5-13)			

*** large effect size, (Cohen, 1992).

From table 10 it can be seen that the median rating of actual current social support received from a significant other (23) was lower than the median ideal rating (25). The Wilcoxon test was converted into a *z*-score of -4.120 with an associated two-tailed probability of $p < .001$ and a large effect size. It can therefore be concluded that participants were not satisfied with the level of support received from the significant other.

From table 10 it can also be seen that the median rating of emotional social support received from a significant other (13) was higher than the median rating of practical social support received (10). The Wilcoxon test was converted into a *z*-score of -4.289 with an associated two-tailed probability of $p < .001$ and a large effect size. It can therefore be concluded that participants perceived themselves as receiving more emotional social support than practical social support from a significant other.

5 DISCUSSION

The aim of this study was to explore perceived changes in structural and functional social support following a move into residential care. In this section the results will be considered in terms of the previous literature, as presented in the introduction. Possible explanations for the results will be explored in terms of relevant theories such as the convoy model and socioemotional selectivity theory. Potential confounding factors will also be explored. Following a critique of the current study suggestions for future research will be made and clinical implications of the findings considered.

5.1 Structural support

5.1.1 Network size

5.1.1.1 Total network

The results showed that the total social network size was perceived to be significantly lower following the move into residential care. This finding is consistent with the previous literature, which implied that with increasing age there was a decrease in overall network size (e.g. Ajrouch *et al.*, 2001; Ajrouch *et al.*, 2005; Wagner *et al.*, 1999). The retrospective ratings of social network size asked participants to think back to a previous point in time, when they would clearly be relatively younger in age. For the majority of participants their retrospective ratings involved thinking back to a time at least one year prior to the current ratings (the limitations of which will be considered later, see section 5.5.3). As participants were older following the move, their social network might be expected to have decreased in size when current and retrospective ratings were compared. While a statistically significant difference was found between current and retrospective ratings (as shown in table 5) the magnitude of this difference was small. The median for the sample indicated a perceived decrease in network size by an average of one person following the move into care.

Compared with the previous literature, the average ratings of network size in the current study were higher than those found by Wagner *et al.* (1999) for older adults residing in an institution. Wagner *et al.* (1999) did not however give the age of those included in their institutionalised sample. As noted above network size has been found to decrease with age and without knowing the age of the sample it is difficult to establish reasons for the larger network size found in the current study.

Figures from the current study were similar to those found in studies looking at network size in older adults living in the community. The average total network size was comparable to that found by Wenger (1997) in a review paper of older adult studies. It was also similar to Ajrouch *et al.* (2005) in their sample aged over 75 years and to those participants in the Berlin Aging Study who were over 85 years old (Wagner *et al.*, 1999). Details of these studies can be found in section 2.6.3.

The average network size in the current study was lower than that found by van Tilberg (1998) in community residing older adults. This could be due to a difference in the age of the samples, with the mean age of participants in the current study being higher. As can be seen from the post-hoc results however, in the current study age did not correlate with total network size. It is possible then that some other factor may have confounded the results. Data from the current study shows that those living in a residential home have a social network of a similar size to community dwelling older people aged over 75 years (Ajrouch *et al.*, 2005; Wagner *et al.*, 1999). People living in a care setting might have similar physical health difficulties or perceived time remaining to those aged over 75 years, rather than necessarily those of their own age group. It might be factors such as these which affect network size, rather than age specifically.

Wolinsky *et al.* (1992) suggested that those who move into a care home may do so because they have smaller social networks, which increase the risk of requiring residential care. In addition to current ratings, retrospective ratings of network size in the current study were also similar to previous older adult community samples (Ajrouch *et al.*, 2005; Wagner *et al.*, 1999; Wenger, 1997). This implies that, as a group, participants did not view themselves as receiving any less social support prior to the move than community dwelling older adults from previous studies. As noted above, in the current study age did not correlate with network size. While average network size was similar to community samples, it is possible that some of the younger participants had a smaller network size than might be expected for their age. This could have contributed to their decision to move into care.

The study examined participants' perceptions of the social support they received and their perceptions of whether this had changed following a move into residential care. The data on which the study is based is in the changing eye of the beholder (the care home resident). It is therefore important to consider ways in which perceptions could be influenced. Other

studies, using the same network mapping procedure found a smaller range (Ajrouch *et al.*, 2001; Wagner *et al.*, 1999, Wenger, 1997) when compared to the unfiltered data, which was the total number of network members identified (see section 4.6 for details of the filter which included only those specifically named). While the use of a filter was unique to this study, in other research network size had been capped at 10 (Ajrouch *et al.*, 2005) and at 20 (Stokes, 1983). It is unclear how these figures were chosen. As explained in the methodology section it was decided to impose a filter in the current study, so those who were named as a group (for example 25 at keep fit class) were excluded. The range for the filtered data in the current study was more in keeping with the previous literature (Ajrouch *et al.*, 2001; Wagner *et al.*, 1999, Wenger, 1997) than that of the unfiltered data. This highlights the large variability in perceptions of what constitutes a 'social network' and who people consider as important in their lives. The limitations of this methodology and the clinical implications of the findings will be discussed later.

5.1.1.2 Inner network

In terms of the structure of people's networks, the results suggest that participants perceived their inner network to have remained relatively stable in size following the move into residential care. Inner support network was defined as 'people so close and important it is hard to imagine life without them'. No statistically significant difference was found between each participant's perception of the current size of their inner social network and that prior to moving into residential care. Although the results indicated a small effect size, the median was the same for both current and retrospective ratings, implying that any difference was unlikely to be of clinical significance. (For example, across the sample if the inner network never increased but occasionally decreased by one person this may have led to a small effect size. Clinically however, it would still be concluded that inner network size remained stable following a move into care.)

The results suggest that the size of the inner network is stable and not affected by moving into residential care. This finding is in keeping with that of Bloem *et al.* (2008) who found that following a move by older adults to a different neighbourhood the inner network size remained stable. The average size of the inner network in the current study was similar to that found for the overall sample in the Berlin Aging Study (Wagner *et al.*, 1999), which included both community residing and institutionalised older adults.

5.1.1.3 Peripheral network

The results regarding the peripheral social network were inconclusive as no statistically significant difference was found between current and retrospective ratings. Peripheral social network was defined as those placed in the middle or outer circle of the network map. A medium effect size was found and, although the adjusted alpha-level was not reached, the results were significant at the .05 level. In these circumstances Clark-Carter (1997) recommends that the findings should not be dismissed but that further research is warranted. While caution must be exercised in drawing conclusions from the data, examination of the median values and inter-quartile ranges indicated that the peripheral network was perceived to be slightly smaller following the move into residential care.

Findings from the current study regarding average peripheral network size were lower than those found in the Berlin Aging Study (Wagner *et al.*, 1999). As discussed above, this may be explained by differences in the age of the participants in the two studies. The mean total network size stated by Wagner *et al.* (1999) for those over 85 years old was similar to the mean peripheral network size given, which included the whole sample. It can be assumed that the peripheral network size for those over 85 years is lower than that given for the whole sample, and thus may be more in keeping with the findings from the current study.

In summary, the results imply that following a move into residential care the total social network is perceived to decrease in size. The inner network is perceived to remain stable in size. Results regarding the peripheral network were not statistically significant but implied that there had been a perceived decrease and further research is warranted.

5.2 Functional support

The level of emotional and practical social support received from a significant other was not perceived to have changed following the move into care. No significant difference was found between current and retrospective ratings. This is contradictory to Louge (2003), who reviewed the literature regarding the effects on families of a relative moving into residential care and concluded that family caregivers provide less practical care following the move. This result also conflicts with the findings of Shaw *et al.* (2007) that practical support increased with age but is consistent with their finding that emotional support received was stable.

In comparison to other studies that used the Significant Others Scale (SOS), levels of perceived support were higher than those found by Power *et al.* (1988). Lam and Power (1991) used the SOS however the items were rated on a five-point scale. When converted to a comparable seven-point scale, the results were similar to those from the current study. The lower rating in Power *et al.* (1988) may be due to the age of their sample, who were all aged under 65 years. Participants in the study by Lam and Power (1991) were aged between 65 and 84 years. The mean age was not given but those above 75 years of age comprised less than one third of the sample, suggesting as a group they were younger than the participants in the current study, where the mean age was 80 years old. Ratings of support in the study by Lam and Power (1991) were higher than those in the under 65 sample in the Power *et al.* (1988) study. It seems likely that older adults may have increased physical health and mobility problems. For example, the Health Survey for England (2000) found 70 per cent of people over 65 years reported a longstanding illness (Department of Health, 2002). In the current sample over 80 per cent took regular medication. It is possible that older adults might therefore require additional practical support when compared to a younger sample.

Living in residential care implies that practical support may be required with daily living tasks. Participants in the current study could, therefore, be expected to require more social support than those residing in the community. The results were also compared to data from an unpublished undergraduate thesis (Everatt, 2001), where the SOS had been administered to 145 community dwelling stroke patients (average age 68 years). The average ratings were similar to those in the current study. This implies that the ceiling effect found on the SOS in the current study may be due to the needs of an older adult sample; they are likely to require higher levels of support due to physical impairments and health needs.

Significant others felt they provided similarly high ratings of social support to the participant. A ceiling effect was evident for both emotional and practical social support. This finding may be biased however; only a small number of significant others responded. Not all significant others were invited to participate in the study as many care-dwelling participants stated they did not wish to burden them. It is possible that significant others who were invited to take part provided more social support than those who were not.

5.3 Contact with network members

Following the move the number of network members whom participants perceived themselves as having at least weekly contact with decreased. The difference between current and retrospective ratings was statistically significant. The number of network members whom participants perceived themselves as having contact with at least monthly also decreased, but the difference was not statistically significant. The results imply a perceived decrease in contact with social network members following the move, but further research is required to confirm these conclusions.

Much of the literature reviewed in the introduction regarding contact had methodological problems. Previous studies looked at the mean ratings on nominal scales, whereas the current study looked at numbers of people seen at least weekly and at least monthly. It is therefore difficult to compare the results with those from the previous literature.

Overall, bearing in mind the methodological shortcomings, the previous literature suggested that contact with family members remained stable and that contact with friends decreased with increasing age (Field & Minkler, 1988; Shaw *et al.*, 2007) and following a move into residential care (Port *et al.*, 2001). Due to the sample size in the current study, it was not possible to examine contact with friends and family separately. The decrease in contact found in the current study is however consistent with the previous literature regarding contact with friends.

5.4 Self-rated depression

The proportion of the sample who had a Geriatric Depression Scale (GDS) score falling within the depressed range was similar to that found in previous literature, examining depression in residential homes (Mann *et al.*, 2000; Blazer, 1994; Parmelee *et al.*, 1992; Sutcliffe *et al.*, 2007). As noted in the introduction, this was higher than in community older adult samples (Koenig & Blazer, 1996; Livingston *et al.*, 1990; Copeland *et al.*, 1987; Beekman *et al.*, 1999). It is important to remember that the GDS is only a screen for depression and clinically a score above the cut-off indicates further assessment of mood is required. It should also be noted that a number of care home residents who declined the invitation to participate in the study gave as the reason 'I cannot be bothered', potentially

indicating the presence of low mood. It is possible that the level of depression in this population was therefore higher than reflected in the literature.

Depression was found to be negatively associated with perceptions of total network size; the higher the level of depression the smaller the perceived social network. This is consistent with previous literature, as reviewed in the introduction. Lin *et al.* (1999) found that the fewer people participants had weekly contact with, the higher their levels of distress. Michael *et al.* (2001) also showed that smaller social networks were associated with poorer mental health. Theoretical explanations for this finding, such as the influence of depression on thoughts, behaviours and perceptions of social support, will be considered in the following section (5.5).

In addition to network size, perceptions of social support received from a significant other were also negatively related to depression. The more depressed participants were the less social support they perceived themselves receiving. This is in keeping with previous literature presented in the introduction, which highlighted relationships between perceived social support and both affect (Patrick *et al.*, 2001) and depression (Lin *et al.*, 1999).

Using the SOS, Power *et al.* (1988) found no differences in perceived social support between a depressed and non-depressed group. Using the same data Power (1988) found that when stressful life events were accounted for, perceptions of emotional social support predicted depression at six-month follow-up, indicating a stress-buffering effect. According to the stress buffering model (Cohen, 1988), high levels of social support act as a protective buffer against the negative effects of stress. Higher levels of social support may help people to re-evaluate any problems they face, distract them from their difficulties or cause them to not appraise a situation as stressful, by believing support will be there if needed. The ceiling effects on the SOS scores in the current study make it difficult to interpret these findings. The SOS scores were mainly at the top end of the scale and any differences measured were therefore very small.

5.5 Theoretical explanations for the findings

5.5.1 Socioemotional Selectivity Theory (Carstensen *et al.*, 1999)

As highlighted in the introduction, socioemotional selectivity theory predicts that when time remaining is perceived as limited, people focus on the present moment and select more emotionally meaningful goals (Carstensen *et al.*, 1999). In the current study, participants' perceptions of their inner networks appear to have remained stable post-move, while peripheral networks appear to have decreased. This implies that following the move they increasingly focused on those relationships that were most important to them and such an interpretation is consistent with socioemotional selectivity theory.

The perceived decrease in network size following a move into care may have caused people to place more importance on key relationships, such as those that they identified as a significant other. This may explain the ceiling effect found in the SOS ratings, whereby ratings of perceived support were all at the extreme of the scale implying participants felt a high level of support. The SOS data also highlighted that people living in care still view family and friends as the people providing them with the most help and support. Only a small proportion chose to rate a member of staff as their significant other. Levels of emotional and practical support received from a significant other were not perceived to have changed following the move, implying that key support figures were perceived to have remained constant. This is, therefore, in keeping with socioemotional selectivity theory; emotionally meaningful relationships were preferentially invested in and maintained.

As noted already, only tentative conclusions can be drawn from the current data. Although not examined in this study, one could predict that a transition such as moving into care might cause people to re-evaluate their time remaining. In the study by Fingerman *et al.* (2008), when people were asked to imagine they were moving away, their responses indicated that they would focus their energies on emotionally meaningful relationships. It is possible that a similar change in goals occurs following a move into residential care, which might involve moving to a new neighbourhood.

The move of a loved one into residential care may alter the perceived time remaining in the relationship. If the significant others perceive their time remaining with the participant as limited, they may provide higher levels of social support. Thus, the socioemotional selectivity theory could explain the high ratings of emotional and practical support given by

significant others, as indicated by the SOS. To examine these hypotheses, based on socioemotional selectivity theory, a measure of future time perspective would need to be included in further research studies.

Emotional regulation is thought to increase with age. Lawton *et al.* (1992) used self-rated questionnaires to assess emotional control. These consisted of 71 statements about how affect was managed. The results indicated that older adults had more control over their emotions than those less than 60 years of age. Gross *et al.* (1997) assessed cross-sectional community samples, using self-report measures of expressivity and emotional control. The oldest participants were found to report more emotional control. Relating these findings to socioemotional selectivity theory Mather and Carstensen (2005) note that emotional wellbeing becomes more important when time is seen as limited and this could account for older adults placing more importance on regulating their emotions. Retrospective ratings in the current study may have been affected by participants' attempts to regulate emotions. For example, negative thoughts and emotions could be avoided by naming, and thus thinking about, only those who remained in their social network rather than any losses.

5.5.2 Convoy model (Kahn & Antonucci, 1980)

The convoy model claims that social networks are fluid and will change to fit the needs and goals at any given time in a person's life (Kahn & Antonucci, 1980). The finding that the total network size decreased when current and retrospective ratings were examined is consistent with the convoy model. Participants perceived a change in their social network following a move into care. It cannot be determined from the available data, however, if this change was an attempt to meet their current needs and goals. Details of which individuals the network was comprised of and whether this changed were not examined. Data was only available for network size, making it difficult to establish support for this model from the current study. For example, while the size of an individual's network might remain a similar size, the network members could change from friends to staff in order to meet their changing needs.

Although not specifically analysed in this study, there were sometimes additions to an individual's network post-move, such as care home staff and fellow residents. It is interesting to note that such additions were only evident for a minority of the participants. Although the results from the SOS suggest that perceived practical social support remains

high, a move into care may mean that people no longer require practical help with daily living tasks from friends and family. They may instead feel they receive help and support from staff in the home. As already highlighted, there was a large variance in how the network mapping questions were interpreted. While people may value the help and support provided by staff in the home, they may not necessarily count staff as part of their social network. Some participants did, however, name specific staff as part of their current social network and classed them as friends. Further research is needed to examine changes in network composition in terms of the convoy model.

5.5.3 Altered perceptions

The measures used in the current study were all self-report and therefore assessed participants' perceptions. Perceptions regarding current and retrospective network size, and of emotional and practical social support received, may have been influenced by the move into a care home. For example, as noted in the introduction (Reinardy, 1995), the amount of control participants felt they had over the move may have influenced their perceptions. Those who felt the move was forced may view the move more negatively. According to cognitive dissonance theory (Festinger, 1957 cited in Gleitman, 1991), having contradictory feelings about an event is unpleasant and people therefore try to reduce this dissonance. Negative feelings about the move could therefore negatively influence perceptions of support at the time of the transition, causing people to feel that social support was lacking.

In a similar way, cognitive dissonance could have a positive influence on perceptions of support. When faced with challenges in life, psychologically resilient individuals have been found to use coping strategies such as positive reappraisal and benefit finding (Ong *et al.*, 2006). These coping mechanisms have been found in response to major medical problems (Affleck & Tennen, 1996), stress (Folkman & Moskowitz, 2000) and bereavement (Davis *et al.*, 1998). The literature has shown that if people can find some benefit following a loss then this relieves some of their distress (Nolen-Hoeksema & Davis, 2005; Davis *et al.*, 1998). The social benefits of moving into care, evident from the qualitative research presented in the introduction (e.g. Iwasiw *et al.*, 1996; Reed & Roskell Payton, 1996; Tse, 2007), may be an example of this coping strategy. Perceiving social benefits may help older adults cope with the many losses associated with the transition into a care home. Having a positive view of social support received may help those living in care to cope with being in a residential setting. In the current study, it is possible that participants had found benefits and

adjusted to the move. This might explain why the perceived network size was higher than in the study by Wagner *et al.* (1999). The authors did not provide details of how long participants had lived in residential care and they may have still been adjusting to the move.

Individual factors also need to be considered. Optimism is an underlying personality trait which can affect people's interpretation of events. Scheier *et al.* (1994) examined the impact of optimism on depression and coping strategies in over 4000 subjects. Those scoring higher on measures of optimism were less depressed and were also more likely to seek out social support, both instrumental and emotional. In the current study, how optimistic a person is may have influenced their perception of the support they received from a significant other. It might also have affected who they chose to include as part of their social network. More optimistic people would be expected to have more positive views regarding the levels of structural and functional social support available to them.

It is evident that perceptions may have altered following the move for a number of reasons. Another potential influence is that older adults tend to remember events in a more positive light than younger adults do (Mather & Carstensen, 2005). In a longitudinal study by Kennedy *et al.* (2004), 300 nuns aged between 47 and 102, reported personal information and were followed up after 14 years and asked to recall the same autobiographical information. The findings indicated that older people tended to recall the past more positively than they had originally reported events. This implies that older adults might reconstruct autobiographical memories and the retrospective data may therefore be a biased account of social support received prior to the move into care. Kennedy *et al.* (2004) did not allow for the mood of participants, however, and in the next section the influence of depression on perceptions will be considered.

5.5.4 Depression

According to cognitive-behavioural theory (Beck, 1967, 1976), depression leads to a negative thinking bias. The measures used in this study were all self-report and assessed participants' perceptions. Ratings on these scales could, therefore, have been influenced by depressed mood. The results implied that the more depressed someone was, the smaller their perceived network size. Negative cognitions may have led participants to dismiss people they would otherwise have included as part of their social network, thus leading to a lower total network size.

A negative thinking bias could also influence perceived emotional and practical social support as measured by the SOS, thus explaining the correlation found between GDS and SOS scores. Attempts were made to gain corroborative data by assessing significant others' perceptions of the social support they were providing. Unfortunately, a low response rate made it difficult to draw conclusions from the findings. Depression, as indicated by the GDS score, was lower in participants whose significant other responded. A number of participants opted not to include their significant other, saying they did not want to burden them. It is possible that these individuals did not feel as supported, thus biasing the results.

As well as changes in cognitions when someone is depressed, cognitive-behavioural theory (Beck, 1967, 1976) would also predict changes in behaviour. Social withdrawal and poorer social skills are more common in depression (Segrin, 2000) and people with depression might be less rewarding to spend time with. Those who are depressed might therefore have a smaller social network, rather than it simply being a change in their perceptions.

Alternatively, it is known that pleasant event scheduling (e.g. MacPhillamy & Lewinsohn, 1982) can improve mood. If someone has a larger network and more contact with those who are important to them, one would therefore predict their mood to be better.

There is debate in the literature about the effect of depression on autobiographical recall. It appears that those with over-general autobiographical memories are at risk of depression (Brittlebank *et al.*, 1993) but that being depressed does not in itself lead to over-general memories (Brittlebank *et al.*, 1993; Phillips & Williams 1997). Low mood may have impacted on recall of actual and retrospective social networks and SOS ratings. Over-general memories may account for the large numbers of network members given by some participants in the unfiltered data. Some individuals gave large numbers to include those from social clubs, rather than naming those individuals from the club to whom they felt close.

5.5.5 Cognitive function

As people were being asked to think back to before they moved into care, the retrospective ratings would clearly be affected by the participant's memory. Overall cognitive function was assessed using the Mini Mental State Examination (MMSE; Folstein *et al.*, 1975), to screen out people with possible dementia. The MMSE is widely used in research as it has

well established normative data and is quick to administer. The scores however need to be interpreted with caution and can be affected by age (Bleecker *et al.*, 1988; Crum *et al.*, 1993; Tombaugh & McIntyre, 1992) and by education levels (Crum *et al.*, 1993; Marcopulos *et al.*, 1997; Jacqmin-Gadda *et al.*, 1997). It provides no measure of episodic memory or delayed recall. Without a more extensive neuropsychological assessment, which would have been impracticable to include, the impact of memory on the results cannot be determined.

While people with an MMSE score of less than 24 were excluded from the study the scores of those who participated indicated a range of cognitive ability (scores ranged from 24 to 30). Preliminary findings from the current data indicate a positive correlation between MMSE score and both current and retrospective ratings of network size. Those with higher cognitive functioning had larger perceived social networks. This is consistent with van Tilburg and Broese van Groenou (2002) who found that network size was smaller in those with a lower MMSE score.

One explanation for the correlation between MMSE score and network size is that those with a poorer MMSE score simply recalled fewer network members, rather than necessarily having smaller social networks. Alternatively, social networks may decline more in those with lower cognitive abilities. For example, someone with poor executive functioning abilities may not initiate contact with others or arrange for people to visit them. Examining older adults following admission to a residential home, Nirenberg (1983) found higher levels of active and outgoing behaviour in participants with higher levels of cognitive functioning. A third explanation is that those with smaller networks were not receiving such high levels of social stimulation and therefore had a lower MMSE score. Somebody spending much of their time isolated in their room may score poorly on the orientation questions of the MMSE, for example if they have few visitors they may lose track of the date.

5.6 Strengths of the study

Based on the literature review a number of the weaknesses in previous research designs were addressed in this study. The literature discussed in section 5.5.3 suggested that perceptions of social support could be affected by many factors, such as mood, optimism and perceived control over the move. This had been ignored in much of the previous research regarding social support. Depression was measured in the current study and the implication of low mood on the results was considered. The finding that higher GDS scores were related to

lower perceptions of structural and functional social support was important when interpreting the results (see section 5.5.3). Other studies examining changes in network size failed to account for the impact of depression (e.g. Ajrouch *et al.*, 2001; Lang & Carstensen, 1994; Wagner *et al.*, 1999).

As highlighted above, previous studies have measured perceived social support and many factors can influence an individual's perception. This study attempted to assess whether ratings of social support were purely due to the individual's perception or based on actual levels of support received. The significant other's perception of the social support they provided was assessed to corroborate the ratings given by each participant. Unfortunately, due to a low response rate, it was not possible to draw substantive conclusions from the current data about whether these matched participants' perceptions.

5.7 Limitations of the study

5.7.1 Sample size

A-priori sample size calculations imply that for the majority of the hypotheses examined, a large sample size is required to achieve a level of power of 80 per cent, as recommended in the social sciences (Clark-Carter, 1997). Tentative conclusions can be drawn from this study with a sample size of 40; more data would be needed however to draw firm conclusions.

There has been no previous research examining changes in social network following a move into residential care. The hypothesised sample size was therefore based on studies that looked at changes in contact (Port *et al.*, 2001) and changes in network over time (van Tilburg, 1998). These studies had larger samples, were more complex than the current study and provided a poor fit as they were not measuring change following a move. This made it difficult to accurately predict the sample size required.

When planning the study, discussions with social work and community psychiatric nursing colleagues did not reveal the extent to which care homes are increasingly inhabited by people suffering from dementia. Those with dementia were excluded from participating in the study, thus this increase in prevalence reduced the potential pool of participants. Data implied that 48 per cent of residents in care homes for older people in the city from which participants were recruited had dementia (The Scottish Government, 2006). The most recent

data available was from 2006 and during recruitment it became evident that levels of dementia were higher than these figures suggested. Of the homes from which participants were recruited, nearly 90 per cent of participants were not invited to take part in the study. The majority of these did not meet the inclusion criteria as they were suffering from dementia. As noted in the introduction, the NHS plan (Department of Health, 2000) and the National Service Framework for Older People (Department of Health, 2001) both advocate supporting independent living. Informal discussions with care home managers suggested that people without dementia tended to be supported in their own home for longer than was previously the case. The proportion of residents with dementia, for whom more intensive care is required, was, therefore, increasing rapidly.

For ethical reasons the researcher was dependent on staff in each care home to invite residents to participate. The researcher had not worked clinically in local care homes and therefore did not have a working relationship with the managers. Recruiting only a small number from each individual home therefore involved a great deal of preparatory work before the participants could be contacted. Care home staff were very busy and this may have impacted on how the information regarding the study was distributed and whether residents consented to be contacted about the study. During initial discussions with managers it was made clear to invite all those residents who met the inclusion criteria for the study. Where possible, the study was discussed with a number of staff and it was apparent that there were differing views on which residents should be invited to participate. It is possible that they may have screened out some of the people they felt had limited social support. This may have biased the sample as well as limiting the sample size.

5.7.2 Variability in the network mapping data

The network map is a subjective measure, as illustrated by the large variation found in total network size between participants. How the questions were interpreted also appears subjective; this was evident from the differences in whom people chose to include in their networks, especially in the unfiltered data (which was the total number identified, as opposed to filtered which was only those specifically named). Wenger (1997) notes that a major disadvantage of the network mapping procedure is that it is '*impossible to control for decisions made by the respondent on inclusion and exclusion*' (Wenger, 1997, p.2) when they are generating a map of their social network. While this makes it difficult to make comparisons between subjects the within-subjects design used in this study meant the main

research questions could be addressed adequately. The variance meant non-parametric statistics had to be used, however, and this may have limited the power of the results (Clark-Carter, 1997).

The network mapping procedure does not claim to measure actual network size. Literature suggests that perceptions of support are more important in buffering against depression than actual levels of social support (Newsom, 1999). McDowell and Serovich (2007) found that in people living with HIV 'perceived' levels of support received were more predictive of mental health than 'actual' levels of support were. Rather than comparing 'actual' and 'perceived' support it could be argued that McDowell and Serovich (2007) examined perceptions of functional and structural social support. What they termed 'perceived' social support was a measure of participants' perceptions of emotional and practical social support (functional support) while 'actual' social support was self-reported network size (structural support). There may be limitations in measuring perceived network size. Previous research has also been based on self-report measures and thus perceptions. As discussed earlier there are a number of factors which can affect perceptions and these must be taken into account when interpreting the results.

In future research the network mapping terminology could be made more specific to ensure that a filter is not required after the collection of the data, for example, asking for the names of important individuals at any group attended. Lin *et al.* (1999) included a measure of 'community ties' which included the number of social clubs and organisations people were involved in. This would be in keeping with the network members described by some participants in the unfiltered data. In the study by Lin *et al.* (1999) no relationship was found between the number of community ties and either perceived social support or depression. Asking about involvement in community organisations would, however, still be informative and should be considered in future studies.

5.7.3 Generalisability

Participants were recruited from a number of different homes and a mixture of council, voluntary and privately run homes, aiding the ability to generalise from the findings. Nonetheless, the small numbers in this study limit the extent to which one can extrapolate the data to the population as a whole. All participants in the study were resident in homes in the same city and it may therefore be difficult to generalise the results to rural settings, or

indeed to other cities. Research by van Tilburg and Broese van Groenou (2002) showed older adults residing in urban areas in Holland had smaller social networks, which provided less support, than those living in rural areas. They used a community sample however, and the effect of rural or urban location on social support may differ in a care home population. For care home residents living in a city may make it easier to maintain contact with their social network; care homes in a rural location may be difficult for friends and relatives to access.

As noted already, the number of people without dementia residing in care settings is declining. Those with dementia may differ from higher cognitively functioning residents in terms of social support, as highlighted by the preliminary finding that MMSE scores correlated with perceived network size. The findings of the current study may, therefore, not generalise to many older adults living in care. Important implications have, however, been highlighted for older adults who are cognitively functioning well and moving into residential care. Although the results may be applicable to only a minority of care home residents, it is important not to neglect the psychological wellbeing of this population. The clinical implications of the findings from the current study will be discussed later (in section 5.10).

5.8 Personal reflections and learning points

Working as a clinical psychologist, it is important to be involved in research to aid the development of an evidence base, which can then inform clinical practice. Completing this study has emphasised the importance of considering the ease of access to participants at an early stage in the process of developing research ideas. In the future completing a more formal assessment of feasibility earlier in the process may be beneficial.

The importance of being clear in advance as to how the results will be analysed is also evident following the completion of this study. The method of measurement used to assess contact was based on previous studies. When analysing the data, problems with the methods used in previous studies became evident, for example treating ordinal data as a continuous variable. Had this been considered earlier, changes could have been made in the way that contact was measured. For example, time and effort could have been saved by rating contact on the three-point scale on which data was analysed (see at least weekly, at least monthly, less than monthly), rather than the nine-point scale used.

5.9 Future research

The results of this study suggest that following a move into residential care social support received from important people in an older adult's life is perceived as remaining constant. Less important social network members appeared to be pruned from the social network and were sometimes replaced with staff. A number of preliminary explanations have been offered for these findings. In order to determine which of these hypotheses best account for the results further research is required.

Using a measure of future time perspective and examining whether this changes following a move into care would be helpful in examining the socioemotional selectivity theory (Carstensen *et al.*, 1999). It seems likely that people will view their time as more limited following the transition into residential care and the Future Time Perspective Scale (Carstensen & Lang, 1996 cited in Fingerman *et al.*, 2008) could be used to test this hypothesis. The socioemotional selectivity theory would predict a prioritisation of goals related to satisfaction in the present moment and therefore relationships perceived as emotionally meaningful would be most highly valued and prioritised. It would therefore be helpful to explore what older adults living in care feel they gain from specific social relationships. A longitudinal study would be helpful in exploring changes in future time perspective and changes in regards to which relationships are prioritised.

It was beyond the scope of the current study to examine specific changes within the social network and only network size was measured. To examine the convoy model (Kahn & Antonucci, 1980) further research is required to explore changes in which specific individuals comprise resident's social networks, both prior to and following the move. According to the convoy model a person's network changes to meet their current needs and goals (Ajrouch *et al.*, 2005; Antonucci, 1985; Kahn & Antonucci, 1980). It would therefore be helpful to examine what each individual's needs and goals are at the time they move into residential care, and whether their network changes to meet these.

In order to examine the relationship between depression and perceived social support further, it would be helpful to compare self-ratings of perceived contact with others' ratings of contact. If a larger scale study were completed, with more significant others' responses gained, then it would enable the perceptions of care home residents to be compared with those providing them with the support. One way to obtain a more accurate measure of actual

contact would be to ask participants to keep a diary of contact. This may, however, change their perception, for example highlighting if visits are limited and this in turn may have a negative influence on their mood. An alternative way to measure contact would be to use the visitor book. All the homes visited in this study had a visitor book, kept as a precautionary measure in the event of a fire, whereby visitors to the home noted down time in and out and who they were visiting. This could be used to measure the number of visits a resident had received and compared with the resident's perceptions.

This study used a cross-sectional design due to time constraints. Future studies would benefit from using a longitudinal design and should aim to interview people prior to and following the move. Such studies are however extremely complex and costly to run. There may be difficulties getting a true baseline, once someone is identified as moving there may be changes in their social support. In the current study, for example, a large proportion of participants moved due to deterioration in their physical health. If their health had deteriorated to the extent that residential care was required this suggests that they may have been receiving increased support immediately prior to moving into care.

5.10 Clinical implications

Maintaining contact with close family and friends appears to be important to care home residents, as is evident from the finding that the inner network remained relatively constant. With technological advances there are increasingly sophisticated ways to communicate with others. A small qualitative study by Demiris *et al.* (2008) examined the use of videophones in long term care. They found the use of this technology enabled care home residents to feel included in family gatherings, with one participant describing how he had watched a football game with the family via the videophone. Such technology is not without problems however, as it can be costly and may be difficult to use. Less high-tech alternatives could serve a similar function. For example, many of the participants in the current study did not have direct access to a telephone. While some people do not like conversing via telephone, for those who do this would be a helpful way to maintain regular contact with family and friends. In addition, a number of participants noted that they struggled with written correspondence. If either staff or volunteers were able to assist with letter writing or e-mails, then this may be another way to continue contact with important people in their life.

Although people still felt supported by their significant other and perceived little change in their inner network, depression in this sample was high, at around 44 per cent of the total sample. Higher levels of depression were found in those with smaller perceived total networks (see table 7), indicating that the peripheral network may be important in terms of psychological wellbeing, as inner network size was similar across the sample. Only three participants included fellow residents as part of their social network. As residential homes become increasingly populated by people with dementia, those who are cognitively intact may become increasingly isolated. Many of the participants noted that they rarely left their room, preferring to eat meals alone as there were no other residents with whom they could converse. The importance of staff having time to build up supportive relationships with residents is therefore increasingly imperative and one fifth of participants named staff as part of their network. In addition, if care home residents are able to maintain contact with community groups, outside the home, this might allow them to maintain a larger social network. In the unfiltered data (the total number identified rather than only those specifically named) a number of people mentioned clubs which they continued to attend outside the home. The fact that participants chose to include these as part of their social network highlights the importance placed on them by some care home residents.

Findings from the current study imply that the significant other provides similar levels of support to the care home resident both prior to and following the move into care. Their input is highly valued by the older person. Significant others also felt they were providing similarly high levels of support both pre- and post-move. This implies that support for carers may need to continue once the friend or relative has moved into care. Informal discussions with the local carers support service indicated that few carers who fall in this category access available support. While for some informal carers providing high levels of support may be viewed as a burden, this is not always the case. Despite feeling they are continuing to provide high levels of support, this does not necessarily have a negative impact on the psychological well-being of family caregivers. Continuing to feel they are helping the resident may prevent potential feelings of guilt (Brody *et al.*, 1990). The low level of depression in those carers who responded implies that feeling they are providing a lot of support may be beneficial for the carer's own wellbeing, perhaps through feeling their support is valued and improving their self-esteem. In addition socioemotional selectivity theory would predict that carers might see the time remaining in the relationship as more limited following a move into care (Fingerman *et al.*, 2008) and may therefore increasingly value spending time with the care home resident.

5.11 Conclusion

Care home residents perceived no change in the size of their inner social network or in the support provided by a significant other following moving into care. They perceived a decrease in the size of their peripheral social network and in overall contact with members of their social network following the move. Levels of depression were high in this sample and increased depression was related to smaller perceived network size and perceptions of lower levels of social support from a significant other. The findings highlight the importance of supporting and enabling contact with the important people in a resident's life.

6 References

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APPENDIX 1: Letters from Ethics Committee, Research & Development and Council

[REDACTED] NHS Board

[REDACTED] Research Ethics Committees



Telephone [REDACTED]

Fax [REDACTED]

www. [REDACTED]

Ms Anna Everatt
Trainee Clinical Psychologist

Date 6 April 2009

Our Ref. 09/S1101/17

Enquiries [REDACTED]

Extension [REDACTED]

Direct Line [REDACTED]

06 April 2009

Dear Ms Everatt

Full title of study: The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.

REC reference number: 09/S1101/17

The Research Ethics Committee reviewed the above application at the meeting held on 01 April 2009. Thank you for attending to discuss the study.

Ethical opinion

The members of the Committee present decided they were unable to give a favourable ethical opinion of the research, for the following reasons:

1. There needs to be more thought to the participant's wellbeing and words like "geriatric" and the "geriatric depression scoring criteria" need to be omitted.
2. The Committee felt that there were too many questions and this may cause anxiety for some of the participants.
3. The footnote to the filepath at the bottom of the questionnaire is inappropriate and needs to be removed.
4. The Committee were concerned that no support was offered to the significant other who may be a family member and find it upsetting and difficult to answer the questions.
5. The Committee felt that some of the questions have a negative feel.
6. Care home managers may find it difficult to identify participants for the research.
7. On the flowchart, the MMSE should be completed before consent is taken.
8. The participant's GP needs to be aware of the research and needs to be contacted directly.

The Committee highlighted that the topic you have chosen is very worthwhile and interesting but needs in some respects to be rewritten. More thought needs to be given to the participants. The Committee suggests:



Headquarters [REDACTED]

Chair Dr [REDACTED]

Chief Executive Professor [REDACTED]

[REDACTED] NHS Board is the common name of [REDACTED] Health Board



1. That a pilot study needs to be carried out first within a care home.
2. Consider using the repertory grid, which is a personal construct approach, to assess the data.

The Committee would like to note that one of the factors in their decision was the mechanics of turning around the significant changes they have asked you to make. They would also like to offer you support in making these changes through Dr [REDACTED], Scientific Officer for [REDACTED] Research Ethics Committees. He can be contacted on [REDACTED] or [REDACTED].

I regret to inform you therefore that the application is not approved.

Options for further ethical review

You may submit a new application for ethical review, taking into account the Committee's concerns. You should enter details of this application on the application form and include a copy of this letter, together with a covering letter explaining what changes have been made from the previous application. We recommend that the application is submitted again to this Committee, but you may opt to submit to another Research Ethics Committee within this domain.

Alternatively, you may appeal against the decision of the Committee by seeking a second opinion on this application from another Research Ethics Committee. The appeal would be based on the application form and supporting documentation reviewed by this Committee, without amendment. If you wish to appeal, you should notify the relevant Research Ethics Service manager (see below) in writing within 90 days of the date of this letter. If the appeal is allowed, another REC will be appointed to give a second opinion within 60 days and the second REC will be provided with a copy of the application, together with this letter and other relevant correspondence on the application. You will be notified of the arrangements for the meeting of the second REC and will be able to attend and/or make written representations if you wish to do so.

The contact point for appeals is:





Documents reviewed

The documents reviewed at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Protocol	V.1.	26 February 2009
Investigator CV	V.1.	20 December 2005
Application	V.2	03 March 2009
IMDENMITY INSURANCE		01 August 2009
C.V.		26 February 2009
Participant Consent Form	v.1.	24 February 2009
Participant Information Sheet	v.1	24 February 2009
Participant Information Sheet	V.1.	24 February 2009
Letter from Sponsor		17 February 2009
SOCIAO-DEMOGRAPHIC INFORMATION	V.1.	19 February 2009
Flowchart	V.1.	24 February 2009
Correspondence		02 December 2008
Stats Correspondence		13 February 2009
Questionnaire: GIA	V.1	
Questionnaire: PSS-FR SCALE CURRENT	V.1	
Questionnaire: SOS RESIDENT .DOC	V.1	
Questionnaire: Quality of Life (WHOQOL-BREF)	V.1	
Questionnaire: WHOQOL-OLD	V.1.	19 February 2009
Questionnaire. SIGNIFICANT OTHER'S FORM	V.1.	
Questionnaire: STANFORD PATIENT EDUCATION RESEARCH CENTER	V.1.	

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

**After ethical review**

Now that you have completed the application process please visit the National Research Ethics Website > After Review

Here you will find links to the following

- a) Providing feedback. You are invited to give your view of the service you have received from the National Research Ethics Service on the application procedure. If you wish to make your views known please use the feedback form available on the website.
- b) Re-submission/Appeal.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nationalres.org.uk.

09/S1101/17

Please quote this number on all correspondence

Yours sincerely

[Redacted signature]

[Redacted name]

Chair

Email: [Redacted email address]

Enclosures:

List of names and professions of members who were present at the meeting and those who submitted written comments

Copy to:

[Redacted list of recipients]

[redacted] NHS Board

[redacted]
 Telephone [redacted]
 Fax [redacted]
 www. [redacted]



8 June 2009

Ms Anna Everatt
 Trainee Clinical Psychologist

[redacted]

Date 8 June 2009
 Our Ref. 09/S1101/31
 Enquiries [redacted]
 Extension [redacted]
 Direct Line [redacted]

[redacted]

Dear Ms Everatt

Study Title: **The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.**

REC reference number: 09/S1101/31

Protocol number: v.9

The Research Ethics Committee reviewed the above application at the meeting held on 03 June 2009. Thank you for attending to discuss the study.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

The favourable opinion applies to the following research site(s):

Research Site	Principal Investigator / Local Collaborator
NHS [redacted]	Ms Anna Everatt

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.



headquarters [redacted]

Chair [redacted]
 Chief Executive Professor [redacted]
 [redacted] NHS Board is the common name of [redacted] Health Board



1. Contact the GP that is covering the care home to ask if they are content for you to carry out the research.
2. A22 / A23 - The GP should be contacted directly if the participant has any mental health issues.
3. Consider adding the VOCAL website address to the carer information sheet.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>. Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Correspondence - Clinical Psychology Programme		02 December 2008
Statistics Correspondence		13 February 2009
Statement of Indemnity Arrangements		18 April 2009
GP letter not included	v.1	18 April 2009
Summary CV for Supervisor	v.1	01 December 2005
Participant Consent Form	v.1	18 April 2009
Participant Information Sheet: Information Sheet - sig others pilot study	v.1	18 April 2009
Participant Information Sheet: Information Sheet - Sig Others	v.1	18 April 2009
Participant Information Sheet: Information Sheet, pilot study	v.1	18 April 2009
Participant Information Sheet: Information Sheet	v.1	18 April 2009
GP/Consultant Information Sheets	v.1	27 April 2009



Letter from Sponsor		27 April 2009
Covering Letter		18 April 2009
Protocol	v.9	28 April 2009
Investigator CV	v.2	27 April 2009
Application	v.2.0	27 April 2009
Significant Others	v.2	18 April 2009
Socio-demographic Information	v.2	18 April 2009
Flowchart	v.2	18 April 2009
Questionnaire: GDS-8		
Questionnaire: GAI		
Questionnaire: Significant Others Scale		
Questionnaire: WHOQOL		
Questionnaire: Pilot Study Questions	v.1	25 April 2009
Interview Schedules/Topic Guides	v.1	25 April 2009

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports



- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

09/S1101/31

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

[Redacted signature]

Chair

Email: [Redacted email address]



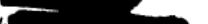



Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*
"After ethical review – guidance for researchers"
Site approval form (SF1)

Copy to: [Redacted recipient]

 NHS Board

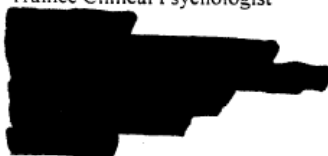
Research Ethics Committees



Telephone 
 Fax 
 www. 
 Date 26 August 2009
 Our Ref. 09/S1101/31
 Enquiries 
 Extension 
 Direct Line 

26 August 2009

Ms Anna Everatt
 Trainee Clinical Psychologist



Dear Ms Everatt

Study title: The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.

REC reference: 09/S1101/31

Amendment number: 1

Amendment date: 26 August 2009

The above amendment was reviewed at the meeting of the Sub-Committee held on 26 August 2009 by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:



Document	Version	Date
Flow Chart	3	26 August 2009
Network Mapping Response Form	2	26 August 2009
Participant Information Sheet: Significant Other	3	26 August 2009
Socio Demographic Information	3	26 August 2009




Headquarters





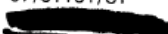


Chair 
 Chief Executive Professor 

 NHS Board is the common name of  Health Board

 NHS Board

 Research Ethics Committees



Telephone 
 Fax 
 Date 23 September 2009
 Our Ref. 09/S1101/31
 Enquiries 
 Extension 
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23 September 2009

Ms Anna Everatt
 Trainee Clinical Psychologist



Dear Ms Everatt

Study title: The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.
REC reference: 09/S1101/31
Amendment number: 2
Amendment date: 15 September 2009.

The above amendment was reviewed at the meeting of the Sub-Committee held on 15 September August 2009 by the Sub-Committee in correspondence.

Ethical opinion



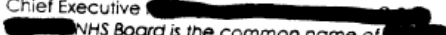

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Flowchart	4	15 September



Headquarters 
 Chair Dr 
 Chief Executive 
 NHS Board is the common name of  Health Board



Participant Information Sheet	2	26 August 2009
Questionnaire	Significant Others Scale	26 August 2009
Notice of Substantial Amendment (non-CTIMPs)	1	26 August 2009

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

09/S1101/31:	Please quote this number on all correspondence
---------------------	---

Yours sincerely

[Redacted signature]

Committee Co-ordinator

E-mail: [Redacted]

Enclosures: *List of names and professions of members who took part in the review*

Copy to: [Redacted]

Everatt, Anna

From: [REDACTED]
Sent: 05 May 2010 14:34
To: Everatt, Anna
Subject: RE:

Dear Anna,

I don't think that this qualifies as a serious breach of protocol and I would be content to treat it as a minor protocol deviation. i.e. this was an unforeseen event that has posed so harm to the participants. As such, you do not need to formally inform the ethics committee. Since the individuals concerned all consented to the study it is appropriate to include them in the analysis.

You should mention this in your annual/final report to the ethics committee.

Regards,

[REDACTED]

From: Everatt, Anna
Sent: 05 May 2010 09:41
To: [REDACTED]
Subject:

Dear [REDACTED]

RE: The Changing Eye of the Beholder
REC reference number: 09/S1101/31

I have started to analyse the data for the above study and have realised a small number of people have taken part who did not meet the inclusion criteria. When recruiting participants I asked the staff in the residential homes to identify those who met the inclusion criteria and invite them to take part. Please find attached the information sheet given to staff. It appears that five of the participants were incorrectly identified as meeting these criteria.

Of the 40 people who participated there are two who were under 65 years, I had chosen 65 as a cut-off purely because that is the age typically used in the NHS for access to older adult services. There were also three people who participated who had not been living in the home for six months, this was chosen as an inclusion criteria to allow people time to settle in. These three participants had been living there just under six months. These five participants all consented to take part and completed the questionnaires, unfortunately I did not realise at the time that they had been incorrectly identified as meeting the inclusion criteria.

I am writing to inform the ethics committee about this and to seek advice about whether I would be able to include data from these participants in my analyses.

Yours sincerely,

Anna Everatt
Trainee Clinical Psychologist

05/05/2010

[REDACTED]

[REDACTED]

TM/JB/LW/app-lrecamend

04 September 2009

Ms Anna Everatt
Department of Clinical Psychology

[REDACTED]



RESEARCH &
DEVELOPMENT
Room E1.12

Tel: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

Director: [REDACTED]

Dear Ms Everatt

No: 09/S1101/31
R&D Project ID No: 2009/W/PSY/04
Title of Research: *The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.*

I am writing in reply to recent correspondence in relation to the following amendment(s) to the above project.

- Amendment:** 1 dated August 2009
- ◆ *Changes to protocol as per Notice of Substantial Amendment.*
 - *Significant others scale*
 - *Socio-demographic information version 3 dated August 2009*
 - *Significant Other's form version 3 dated August 2009*
 - *Network mapping response form version 2 dated August 2009*
 - *Information sheet version 2 dated August 2009*
 - *Flow chart version 3 dated August 2009*

We have now received a copy of the amendment(s) and assessed any consequential changes in NHS [REDACTED] resource use. I confirm that NHS [REDACTED] management approval is extended to cover the specific changes intimated. You should be aware that approval for this amendment must also be received from [REDACTED] Research Ethics Committee before it is implemented

Yours sincerely

[REDACTED]

Dr [REDACTED]
R&D Governance Manager
Direct Tel: [REDACTED]
Email: [REDACTED]

"Improving health through excellence and innovation in clinical research"

[REDACTED]

[REDACTED]

TM/JB/app-lrecamend

25 September 2009

Ms Anna Everatt
Department of Clinical Psychology

[REDACTED]



RESEARCH &
DEVELOPMENT
Room E1.12

Tel: [REDACTED]

Fax: [REDACTED]

Email: [REDACTED]

Director: [REDACTED]

Dear Ms Everatt

No: 09/S1101/31
R&D Project ID No: 2009/W/PSY/04
Title of Research: *The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.*

I am writing in reply to recent correspondence in relation to the following amendment(s) to the above project.

Amendment: 2 dated September 2009

- ◆ Changes as per notice of substantial amendment.
 - Flow Chart version 4 dated September 2009
 - Change to the use MMSE screening

We have now received a copy of the amendment(s) and assessed any consequential changes in NHS [REDACTED] resource use. I confirm that NHS [REDACTED] management approval is extended to cover the specific changes intimated. You should be aware that approval for this amendment must also be received from [REDACTED] Research Ethics Committee before it is implemented

Yours sincerely

[REDACTED]

Dr [REDACTED]
R&D Governance Manager
Direct Tel: [REDACTED]
Email [REDACTED]



RESEARCH &
DEVELOPMENT
Room E1.12

Tel: [REDACTED]
Fax: [REDACTED]
Email: [REDACTED]

Director: [REDACTED]

[REDACTED]

TM/JK/app-lrecamend

20 November 2009

Ms Anna Everatt
Department of Clinical Psychology

Dear Ms Everatt

[REDACTED] No: 09/S1101/31
R&D Project ID No: 2009/W/PSY/04
Title of Research *The changing eye of the beholder. Perceived changes in social support following a move into residential care and the interaction with quality of life.*

I am writing in reply to recent correspondence in relation to the following amendment(s) to the above project.

Amendment: No 3, dated October 2009

- **Changes to Information Sheet as per notice of substantial amendment.**
 - **Information Sheet, version 3 dated October 2009**


We have now received a copy of the amendment(s) and assessed any consequential changes in NHS [REDACTED] resource use. I confirm that NHS [REDACTED] management approval is extended to cover the specific changes intimated. You should be aware that approval for this amendment must also be received from [REDACTED] Research Ethics Committee before it is implemented


Yours sincerely

[REDACTED]

Dr [REDACTED]
R&D Governance Manager
Direct Tel: [REDACTED]
Email [REDACTED]

"Improving health through excellence and innovation in clinical research"


COUNCIL
 DEPARTMENT OF HEALTH AND SOCIAL CARE
 SOCIAL CARE PERFORMANCE

Anna Everatt
 Psychology Department,



Date: 14th November 2009


Your ref:

Our ref:

Dear Anna,

THE CHANGING EYE OF THE BEHOLDER. PERCEIVED CHANGES IN SOCIAL SUPPORT FOLLOWING A MOVE INTO RESIDENTIAL CARE AND THE INTERACTION WITH QUALITY OF LIFE.



I have read the information you supplied in support of your request for access, and have discussed your proposal with , Service Manager, Older People, Department of Health and Social Care. I am pleased to tell you that your request has been approved, and that you can make the necessary arrangements to proceed with your study.



 Change and Development Manager, and her colleagues have also been consulted and are aware that you will be approaching Unit Heads with a view to identifying residents who might be able to take part in the research.

Please get in touch with me if you need further assistance.

I hope that your project goes well.

Yours sincerely


 Senior Research and Information Officer
 Telephone No. 

Cc  Service Manager, Older People, , Change & Development Manager


 DIRECTOR


 Tel  Fax 



APPENDIX 2: Information sheet (significant other)

Title of Project: The changing eye of the beholder.

Moving into a residential home involves many changes. Previous studies have shown that relationships with family and the amount of contact with others can alter following a move.

What is this study looking at?

The level of help and support people living in a residential home feel they receive from important people in their lives.

How satisfied they are with the level of help and support they feel they receive.

The amount of help and support people feel they received before moving into a residential home.

The person who gave you this form is taking part in the above study. They have identified you as someone who provides them with a lot of help and support. As well as getting their views we are keen to also get your opinion.

What will participating involve?

We have compiled a brief questionnaire to get your views. You will be asked about how much help and support you feel you give the person now and before they moved into a residential setting. You will also be asked some general questions, such as how much contact you have with them and how they are know to you. Finally you will be asked to complete a brief questionnaire about your mood. In all this should take a maximum of 20 minutes to complete.

Will my taking part in the study be kept confidential?

All the information will be anonymous. The questionnaires will be returned to us in sealed envelopes and you will not need to put your name on them.

Do I have to take part?

It is up to you to decide. Participation is entirely voluntary. This information sheet is for you to keep and will help you decide if you would like to take part.

What next?

If you are willing to participate then please complete the enclosed questionnaires. By reading the above information and completing the questionnaires you are giving your consent to take part in this study. If you have any questions about participating in the study please do not hesitate to contact us before completing the questionnaires.

If you wish to discuss this further the main researcher (Anna Everatt) can be contacted on:

.....

If you would prefer to talk to somebody not involved in the study then please contact Pauline Thompson on

Once you have completed the questionnaire please seal it in the envelope provided and either give it to the manager of the home or put it in the post.

It can be difficult when someone you care about moves into a residential home. If you would like support with any difficult feelings you may be experiencing then VOCAL, a carer's support service based in, would be happy to hear from you.

They can be contacted on for advice and information.

They also provide a counselling service which can be contacted on

APPENDIX 3: Pilot study feedback sheet

Pilot study questions- Interview Schedule

As you know this is a pilot study. This means we are seeing whether it is feasible to complete a larger scale study. To help us determine this we would like to ask you a few questions about your experience of participating in the research.

Information sheet

1. Did the information sheet help you decide whether to take part?
2. Was there any other information that is would have been helpful to know?
3. Do you have any general comments about the information sheet?

Questions

1. Was anything unclear about the questions you were asked?
2. How did you feel about the number of questions and the length of time it took you to complete the questionnaires?
3. Do you have any general comments about the questions you were asked?

General

1. How would you describe the experience of taking part in the study?
2. What was your reason for taking part in this study?
3. If a friend of yours was considering taking part in this study what would you tell them?
4. Did you find taking part in this study upsetting in any way?
5. In view of your experience of taking part in this study are you still happy to have taken part?

Thank you for your help.

APPENDIX 4: Significant Other Scale (Current, Retrospective, Significant Other Current and Significant Other Retrospective)

Significant Others Scale- Current

Think of the person you have identified above. Please circle a number from 1-7 to show how well they provide the type of help listed:

Current help and support	Never		Sometimes			Always	
1. a. Can you trust, talk freely and share your feelings with him/ her?	1	2	3	4	5	6	7
1. b. What rating would your ideal be?	1	2	3	4	5	6	7
2. a. Can you lean on and turn to him/ her in times of difficulty?	1	2	3	4	5	6	7
2. b. What rating would your ideal be?	1	2	3	4	5	6	7
3. a. Does he/ she give you practical help?	1	2	3	4	5	6	7
3. b. What rating would your ideal be?	1	2	3	4	5	6	7
4. a. Can you spend time with him/ her socially?	1	2	3	4	5	6	7
4. b. What rating would your ideal be?	1	2	3	4	5	6	7

Significant Others Scale- Retrospective

Think of the person identified above. This time consider the help and support they gave you before you moved into a residential home. Again circle a number from 1-7 to show how well they provide the type of help listed:

Before you moved into a residential home	Never		Sometimes			Always	
1. a. Could you trust, talk freely and share your feelings with him/ her?	1	2	3	4	5	6	7
1. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7
2. a. Could you lean on and turn to him/ her in times of difficulty?	1	2	3	4	5	6	7
2. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7
3. a. Did he/ she give you practical help?	1	2	3	4	5	6	7
3. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7
4. a. Could you spend time with him/ her socially?	1	2	3	4	5	6	7
4. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7

Significant Others Scale- Significant Other Current

Think of the person who gave you this form. Please circle a number from 1-7 to show how well you feel you provide them with the type of help listed:

Current help and support	Never		Sometimes			Always	
1. a. Can he/ she trust, talk freely and share their feelings with you?	1	2	3	4	5	6	7
1. b. What rating would your ideal be?	1	2	3	4	5	6	7
2. a. Can he/ she lean on and turn to you in times of difficulty?	1	2	3	4	5	6	7
2. b. What rating would your ideal be?	1	2	3	4	5	6	7
3. a. Do you give him/ her practical help?	1	2	3	4	5	6	7
3. b. What rating would your ideal be?	1	2	3	4	5	6	7
4. a. Can he/ she spend time with you socially?	1	2	3	4	5	6	7
4. b. What rating would your ideal be?	1	2	3	4	5	6	7

Significant Others Scale- Significant Other Retrospective

Think of the person who gave you this form. This time consider the help and support you gave them before they moved into a residential home. Again circle a number from 1-7 to show how well you feel you provided the type of help listed:

Before they moved into a residential home	Never		Sometimes			Always	
1. a. Could he/ she trust, talk freely and share your feelings with you?	1	2	3	4	5	6	7
1. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7
2. a. Could he/ she lean on and turn to you in times of difficulty?	1	2	3	4	5	6	7
2. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7
3. a. Did you give him/ her practical help?	1	2	3	4	5	6	7
3. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7
4. a. Could he/ she spend time with you socially?	1	2	3	4	5	6	7
4. b. At that time what rating would your ideal have been?	1	2	3	4	5	6	7

APPENDIX 5: Network mapping procedure

Hierarchical Network Maps- Interview Schedule (based on Antonucci, 1986)

The following will be used as a guide for completing the network map. Participants will be given the circles diagram and asked to write in names or initials as follows.

Current Network

Using this diagram will help us measure how close you feel to those in your social network.

1. In this central circle, closest to you, please place people so close and important it is hard to imagine life without them.
2. In this next circle please place people to whom you may not feel quite that close but are still very important to you.
3. In the outer circle please place people who are close enough and important enough in your life that they should be placed in your personal network.

I am now going to ask you a few questions about the first 10 people you have named (*or if named less than 10 about those you have named*).

(Give prompt sheet.)

1. What is your relationship to them?
2. How often do you have face to face contact with them?
3. How often do you have telephone contact?
4. How often do you send and/or receive letters from them?

Previous Network

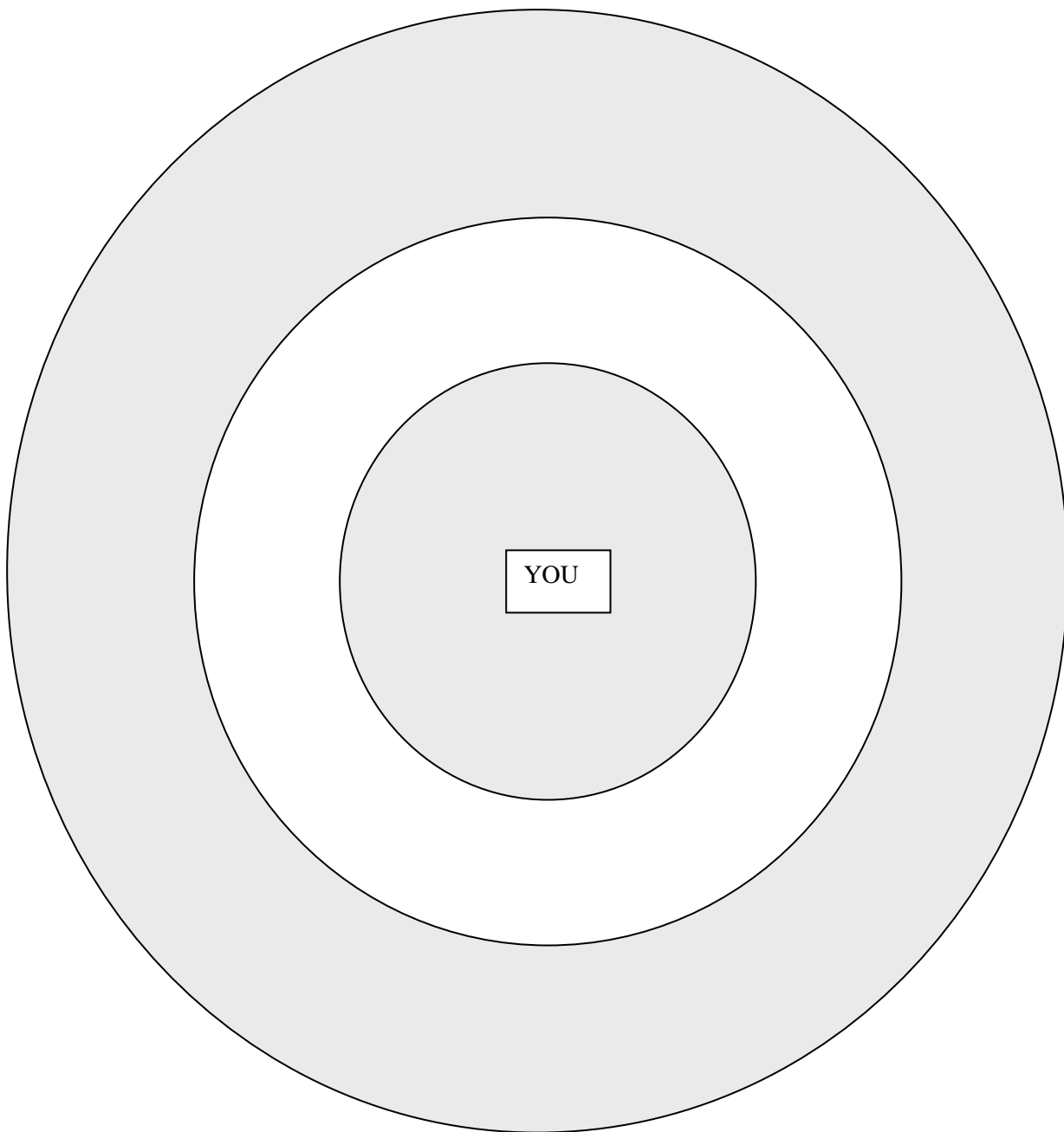
Now I would like you to think back to before you moved into residential care. We are going to repeat the diagram for how your network was at that time.

1. In this central circle, please place people so close and important it was hard to imagine life without them.
2. In this next circle please place people to whom you may not have felt quite that close to but were still very important to you.
3. In the outer circle please place people who were close enough and important enough in your life that they should be placed in your personal network.

I am now going to ask you a few questions about the first 10 people you have named (*or if named less than 10 about those you have named*).

(Give prompt sheet.)

1. Was this person named in your current network? (Y/N)
2. If no what is the reason for this?
3. What is/ was your relationship to them?
4. How often did you have face to face contact with them?
5. How often did you have telephone contact?
6. How often did you send and/or receive letters from them?



APPENDIX 6: Ratings of contact**Contact**

daily

3 or 4 times per week

weekly

every 2 weeks

monthly

a few times a year

once a year

less than once a year

never

APPENDIX 7: Demographic questionnaire**SOCIO-DEMOGRAPHIC INFORMATION**

1 Your gender:

- Male
 Female

2 Your age: _____

3 Your current marital status:

- Single (never married)
 Married
 Partnered (other than married)
 Separated/Divorced (not currently partnered)
 Widowed

4 Living arrangements prior to moving into residential care:

- Living at home (supported by family/carers or partner)
 Living with family but not in own home
 Living at home (unsupported by family/carer or partner)
 Living in sheltered housing/community care
 Living in a long-stay patient ward (hospital)
 Other (please give details below)

5 How long have you been living in residential care?
Current home:

- Less than 6 months
 6 months - 1 year
 1 – 2 years
 more than 2 years

Total time in residential care (including other homes):

- Less than 6 months
- 6 months - 1 year
- 1 – 2 years
- more than 2 years

6. Why did you move into residential care?

- Following a fall/ fracture
- Deterioration in physical health
- Deterioration in mental health
- Following an acute illness
- Pressure on informal carer
- Loneliness
- Other (please give details below)

7. In general do you consider yourself to be currently healthy or unhealthy?

- Healthy
- Unhealthy

8. Please provide details of any medical condition(s) you have which you feel might affect your quality of life

9. Do you currently take any medication?

- Yes
- No

If yes how many medications are you prescribed?

10. Education

What is the highest level of education you have received?

- None at all
- Primary school
- Secondary school
- Tertiary

11. Quality of Life

A. How would you rate your current quality of life?

Very poor	Poor	Neither poor nor good	Good	Very good
1	2	3	4	5

B. How would you rate your quality of life prior to moving into care?

Very poor	Poor	Neither poor nor good	Good	Very good
1	2	3	4	5

Help and support from important people in your life

Please read each question and tick the most appropriate response from those listed. Please try to answer every question.

12. Who would you consider to be the person in your life who gives you the most help and support? (please just chose one person for the purpose of this study).

13. How is this person known to you?

- Husband
- Wife
- Brother
- Sister
- Son
- Daughter

- Grandchild
- Other family member (please give details below)
- Friend
- Other (please give details below)

--

14. How long have you known this person for?

- 0-6 months
- 6 months – 1 year
- 1-5 years
- 5-10 years
- over 10 years

15. For how long has this person been giving you the most help and support?

- 0-6 months
- 6 months – 1 year
- 1-5 years
- 5-10 years
- over 10 years

16. How would you rate the quality of your relationship with this person?

Very poor	Poor	Neither poor nor good	Good	Very good
1	2	3	4	5

17. How would you rate the quality of your relationship with this person prior to you moving into care?

Very poor	Poor	Neither poor nor good	Good	Very good
1	2	3	4	5

18. About how long would it take this person to visit you from where they live? (Door to door)

- Less than 15 minutes
- Between 15 and 30 minutes
- Between 30 minutes and one hour
- Between one and two hours
- More than two hours
- Lives abroad
- Don't know

APPENDIX 8: Significant other demographic questionnaire**Help and support provided**

Please read each question and tick the most appropriate response from those listed. Please try to answer every question.

1. How do you know the person who gave you this form?
I am their (please tick as appropriate)

- Husband
- Wife
- Brother
- Sister
- Son
- Daughter
- Grandchild
- Other family member (please give details below)
- Friend
- Other (please give details below)

2. How long have you known this person for?

- 0-6 months
- 6 months – 1 year
- 1-5 years
- 5-10 years
- over 10 years

3. For how long have you been providing help and support to this person?

- 0-6 months
- 6 months – 1 year
- 1-5 years
- 5-10 years
- over 10 years

4. About how long would it take you to visit this person from where you live? (Door to door)

- Less than 15 minutes
- Between 15 and 30 minutes
- Between 30 minutes and one hour
- Between one and two hours
- More than two hours
- Don't know

5. How much contact do you have with this person?

Do you visit or have visits from them:

- daily
- 3 or 4 times per week
- weekly
- every 2 weeks
- monthly
- less than monthly

Do you have telephone conversations with them:

- daily
- 3 or 4 times per week
- weekly
- every 2 weeks
- monthly
- less than monthly

Do you send and/ receive letter from them:

- daily
- 3 or 4 times per week
- weekly
- every 2 weeks
- monthly
- less than monthly

6. Think about the contact you had with this person before they moved into residential care. Since the move has this contact (please tick):

	Increased a lot	Increased a little	Stayed the same	Decreased a little	Decreased a lot
Visits					
Telephone conversations					
Letters					

7. How would you rate the quality of your relationship with this person?

Very poor	Poor	Neither poor nor good	Good	Very good

8. How would you rate the quality of your relationship with this person prior to them moving into care?

Very poor	Poor	Neither poor nor good	Good	Very good

APPENDIX 9: Information sheet**Information sheet**

We would like to invite you to take part in a research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Talk to others about the study if you wish.

Title of Project: The changing eye of the beholder.

Moving into a residential home involves many changes. Previous studies have shown that relationships with family and the amount of contact with others can alter following a move.

What is this study looking at?

Those living in residential care and:

- The help and support they receive from important people in their lives.
- How satisfied they are with this.
- The help and support received before moving into a residential home.
- Contact with friends and family and how this compares pre and post move.

Why have I been invited?

People from a number of residential homes across are being invited to take part.

What will participating involve?

If you agree to help with this research you will be interviewed briefly about those people who you feel close to. You will be asked about:

- Your contact with important people in your life.
- The help and support you currently receive.
- The help and support you received before you moved into residential care.
- Your mood.
- Your memory.
- General questions (e.g. how long you have lived in a residential setting, your age, your current health).

This should take about an hour. It can be done either all at once or over two meetings. This will be arranged at a time to suit you.

You will also be asked to identify someone who you feel provides you with a lot of help and support. They will then be asked to complete a brief questionnaire. This should take them a maximum of 20 minutes.

Do I have to take part?

It is up to you to decide. Participation is entirely voluntary. This information sheet is for you to keep and will help you decide if you would like to take part.

If you decide to participate you are free to withdraw at any time, without giving a reason.

Will my taking part in the study be kept confidential?

Yes. We will follow ethical and legal practice and all information about you will be handled in confidence. All the information will be anonymous. You will not need to put your name on the questionnaires.

We will write your GP to inform them that you are participating in the study. You will be asked to complete a questionnaire looking at your memory. If this highlights difficulties then, with your permission, we will write to your GP to inform them. If

memory difficulties are highlighted then you will not be asked to participate in the rest of the study.

Did anyone else check the study is OK to do?

Before any research is allowed to happen, it has to be checked by a group of people called a Research Ethics Committee. They make sure that the research is fair. Your project has been checked by the..... Research Ethics Committee. Research approval has also been given by Health and Social Care.

What next?

If you would be willing to participate please tell a member of staff. I will then arrange to meet briefly with you to explain things further and answer any questions you have. After this if you are still interested you will be asked to sign a consent form to show you have agreed to take part. If you are happy to take part I will then arrange a time to complete the interview.

If you wish to discuss this further the main researcher (Anna Everatt) can be contacted on:

If you would prefer to talk to somebody not involved in the study then please contact Pauline Thompson on

What happens when the research study stops?

After the study is completed a leaflet summarising the results will be sent to your residential home for you to look at. We cannot promise the study will help you but the information we get from this study may help other people who are considering moving into residential care.

Sometimes thinking about the past or your current situation can stir up difficult feelings. If you find this happens please talk to a member of staff in your home

APPENDIX 10: Consent form**Consent Form****Title of Project: The changing eye of the beholder.****Name of Researcher: Anna Everatt**

Please initial box

I confirm that I have read and understand the information sheet for
above study.

I have had the opportunity to consider the information, ask
questions and have had these answered satisfactorily.

I understand that my participation is voluntary and that I am free to
withdraw at any time without giving any reason.

I agree to my GP being informed of my participation in the study.

I agree to taking part in the above study.

 Your name

 Date

 Signature

 Name of person
taking consent

 Date

 Signature

APPENDIX 11: Hypothesised sample size

Previous studies used parametric statistics. To compensate for the fact non-parametric tests have lower power efficacy Clark-Carter (2004) recommends the sample size is adjusted by multiplying the sample size predicted based on parametric data by 1.05.

Port et al (2001)

Pre-admission contact positively correlated with post-admission contact.

$$r = 0.35 \Rightarrow \text{medium to large effect size}$$

for $\alpha = 0.05$ would therefore need sample size of between 28 – 85.

Using G POWER with $\alpha = 0.05$, power = 0.8 \Rightarrow total sample size of 46.

Total sample size: $46 \times 1.05 = 48.3$

van Tilberg (1998)

Instrumental support received

Multilevel regression of network characteristics on time (years) and age at T1

Multiple regression with 2 independent variables using Cohen table 2

$$R^2 = 0.056 \Rightarrow f^2 = 0.059 \Rightarrow \text{large effect size}$$

Alpha = 0.05 would therefore need a sample size of 30.

Total sample size: $30 \times 1.05 = 31.5$

Emotional support received

Multilevel regression of network characteristics on time (years) and age at T1

Multiple regression with 2 independent variables using Cohen table 2

$$R^2 = 0.098 \Rightarrow f^2 = 0.109 \Rightarrow \text{medium effect size}$$

Alpha = 0.05 would therefore need a sample size of 67.

Total sample size: $67 \times 1.05 = 70.35$

Pilot study data

Change in total network size

$$d = 0.67$$

Using G POWER with $\alpha = 0.05$, power = 0.8 \Rightarrow total sample size of 58.

Total sample size: $58 \times 1.05 = 60.9$

Change in practical social support

$$d = 0.68$$

Using G POWER with alpha = 0.05, power = 0.8 => total sample size of 56.

$$\text{Total sample size: } 56 \times 1.05 = 58.8$$

Change in emotional social support

$$d = 0.32$$

Using G POWER with alpha = 0.05, power = 0.8 => total sample size of 244.

$$\text{Total sample size: } 244 \times 1.05 = 256.2$$

APPENDIX 12: Tests of normality**Network size unfiltered**

Variable	Skewness	Kurtosis	Visual inspection of histogram	Kolmogorov-Smirnov	<i>p</i>
total network current	3.168	9.17	floor effect	2.27	<.001
total network retrospective	2.582	6.121	floor effect	2.00	.001
Inner network current	1.047	1.598		0.98	.29
inner network retrospective	0.922	0.826		0.89	.41
peripheral network current	3.246	9.602	floor effect	2.48	<.001
peripheral network retrospective	2.679	6.651	floor effect	2.16	<.001

Network size filtered

Variable	Skewness	Kurtosis	Visual inspection of histogram	Kolmogorov-Smirnov	<i>p</i>
total network current	0.596	-0.517		1.02	.25
total network retrospective	0.683	0.075		0.73	.66
Inner network current	1.047	1.598		0.98	.29
inner network retrospective	0.922	0.826		0.89	.41
peripheral network current	1.141	0.733	not normal- outliers at both extremes	1.15	.14
peripheral network retrospective	1.022	0.264	not normal- outliers at both extremes	1.09	.19

Current Contact

Variable	Skewness	Kurtosis	Visual inspection of histogram	Kolmogorov-Smirnov	<i>P</i>
Total weekly or more	1.741	3.318	Floor effect	1.22	.10
Total monthly or more	0.746	-0.474	Floor effect	1.16	.14

Retrospective Contact

Variable	Skewness	Kurtosis	Visual inspection of histogram	Kolmogorov-Smirnov	<i>p</i>
Total weekly or more	0.864	-0.447	Bimodal distribution	1.41	.04
Total monthly or more	0.705	-0.139	Bimodal distribution	1.18	.12

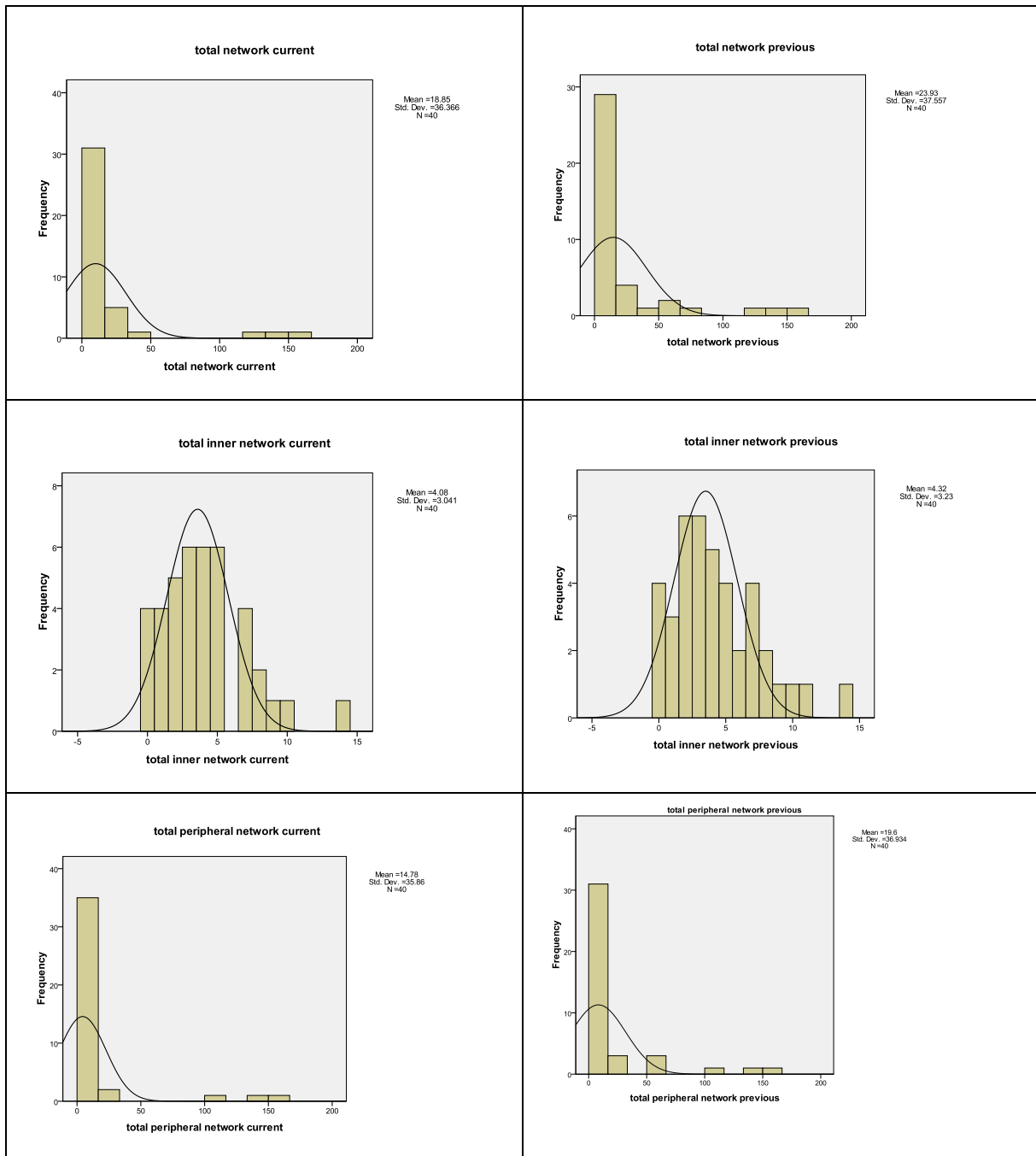
Significant others scale- participant ratings

Variable	Skewness	Kurtosis	Visual inspection of histogram	Kolmogorov-Smirnov	<i>p</i>
current emotional	-1.285	1.435	ceiling effect	1.54	.02
current practical	-0.782	0.484	ceiling effect	0.82	.51
current actual	-0.743	< 0.001	ceiling effect	0.70	.71
current ideal	-0.859	0.53	ceiling effect	1.05	.22
retrospective emotional	-1.724	4.238	ceiling effect	1.44	.03
retrospective practical	-0.294	0.778	ceiling effect	1.18	.12
retrospective actual	-2.293	8.247	ceiling effect	1.23	.10
retrospective ideal	-2.611	9.805	ceiling effect	1.17	.13

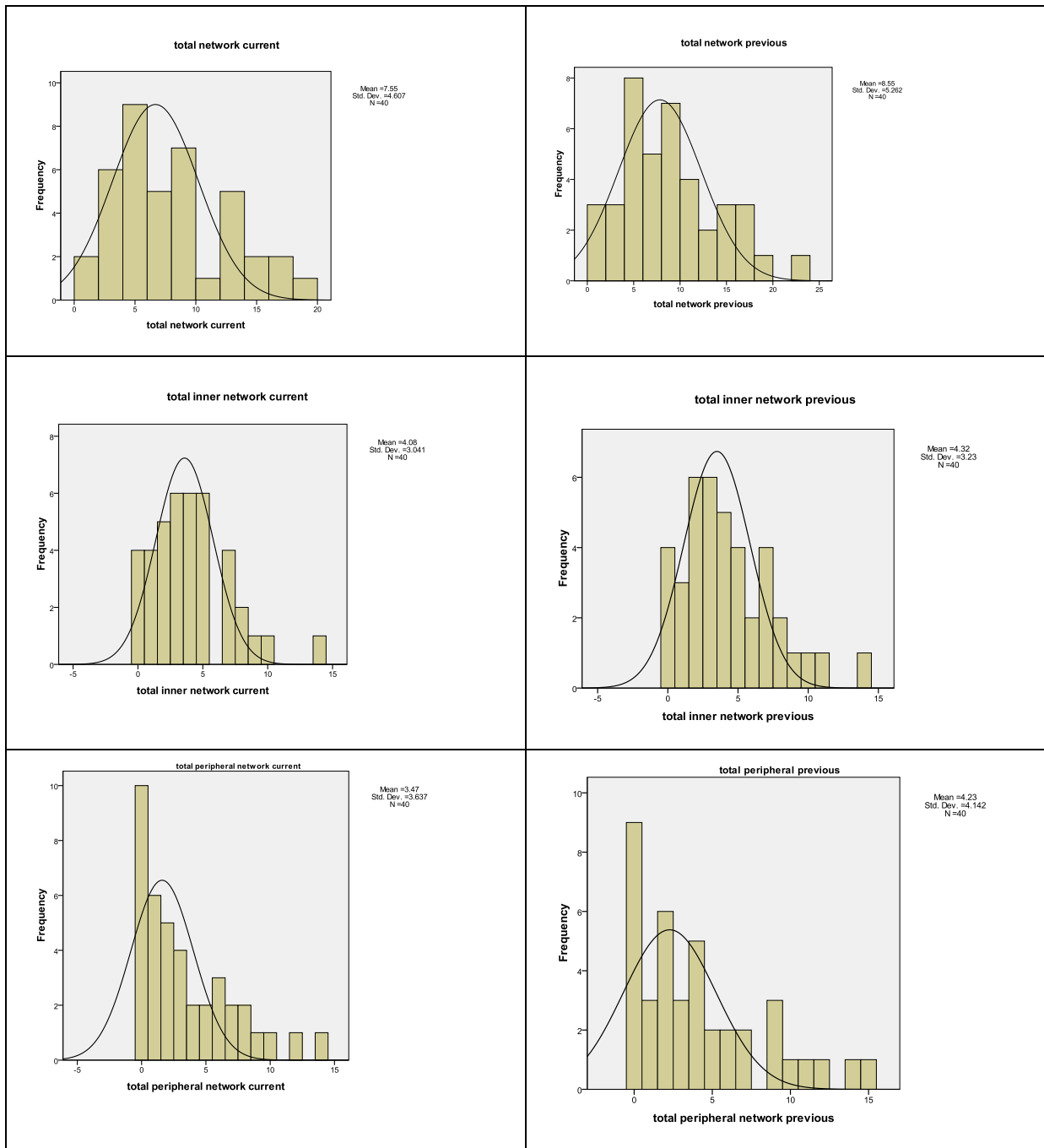
Significant others scale- significant other ratings

Variable	Skewness	Kurtosis	Visual inspection of histogram	Kolmogorov-Smirnov	<i>p</i>
current emotional	-2.016	4.36	ceiling effect	1.36	.05
current practical	-1.305	0.403	ceiling effect	1.21	.11
current actual	-1.663	2.198	ceiling effect	0.94	.34
current ideal	-1.648	2.839	ceiling effect	0.99	.28
retrospective emotional	-0.928	-0.776	ceiling effect	1.05	.22
retrospective practical	-0.804	-1.067	ceiling effect	1.04	.23
retrospective actual	-0.927	-0.958	ceiling effect	0.89	.40
retrospective ideal	-0.808	-0.54	ceiling effect	0.86	.46

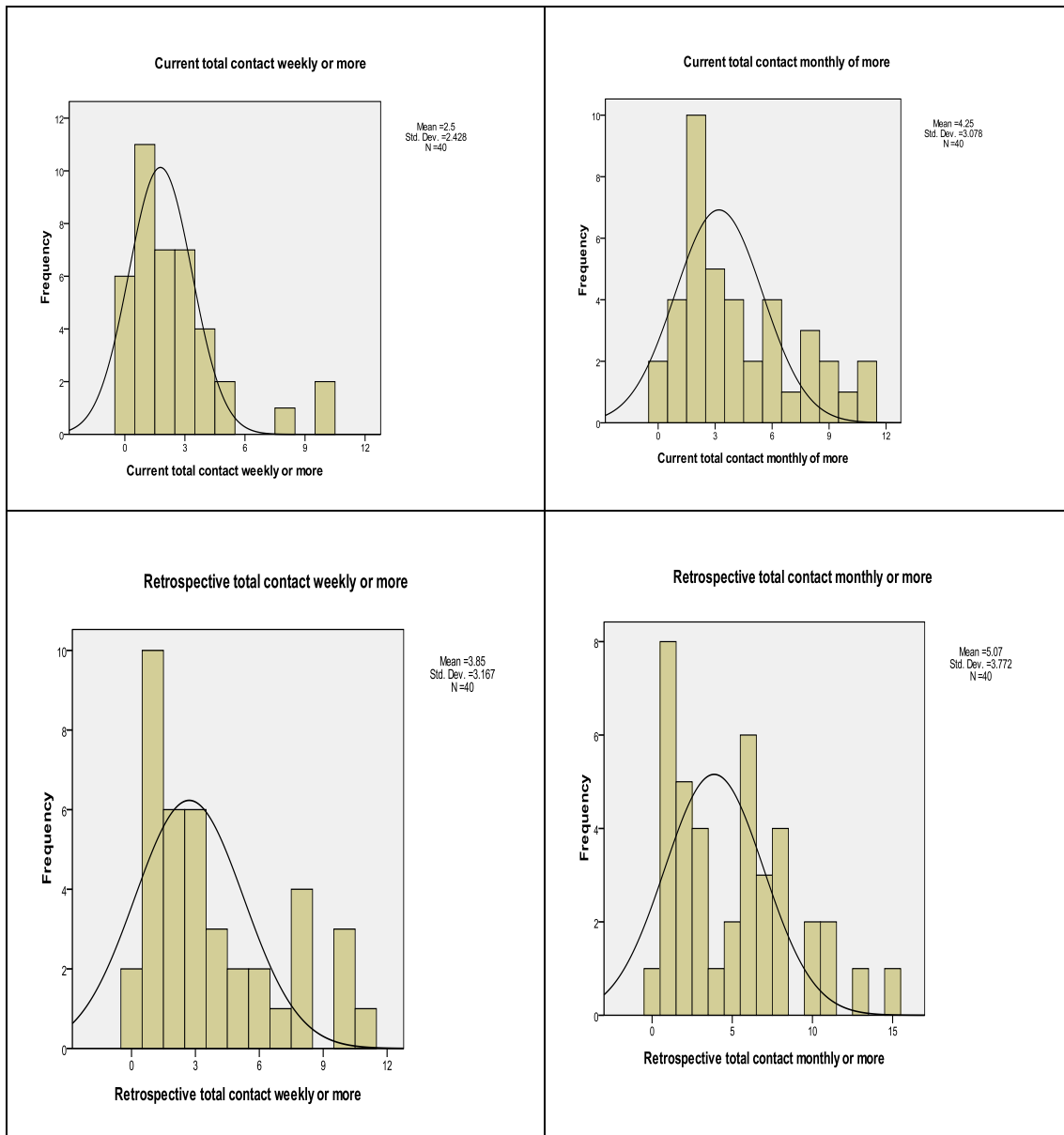
Histograms- network size (unfiltered)



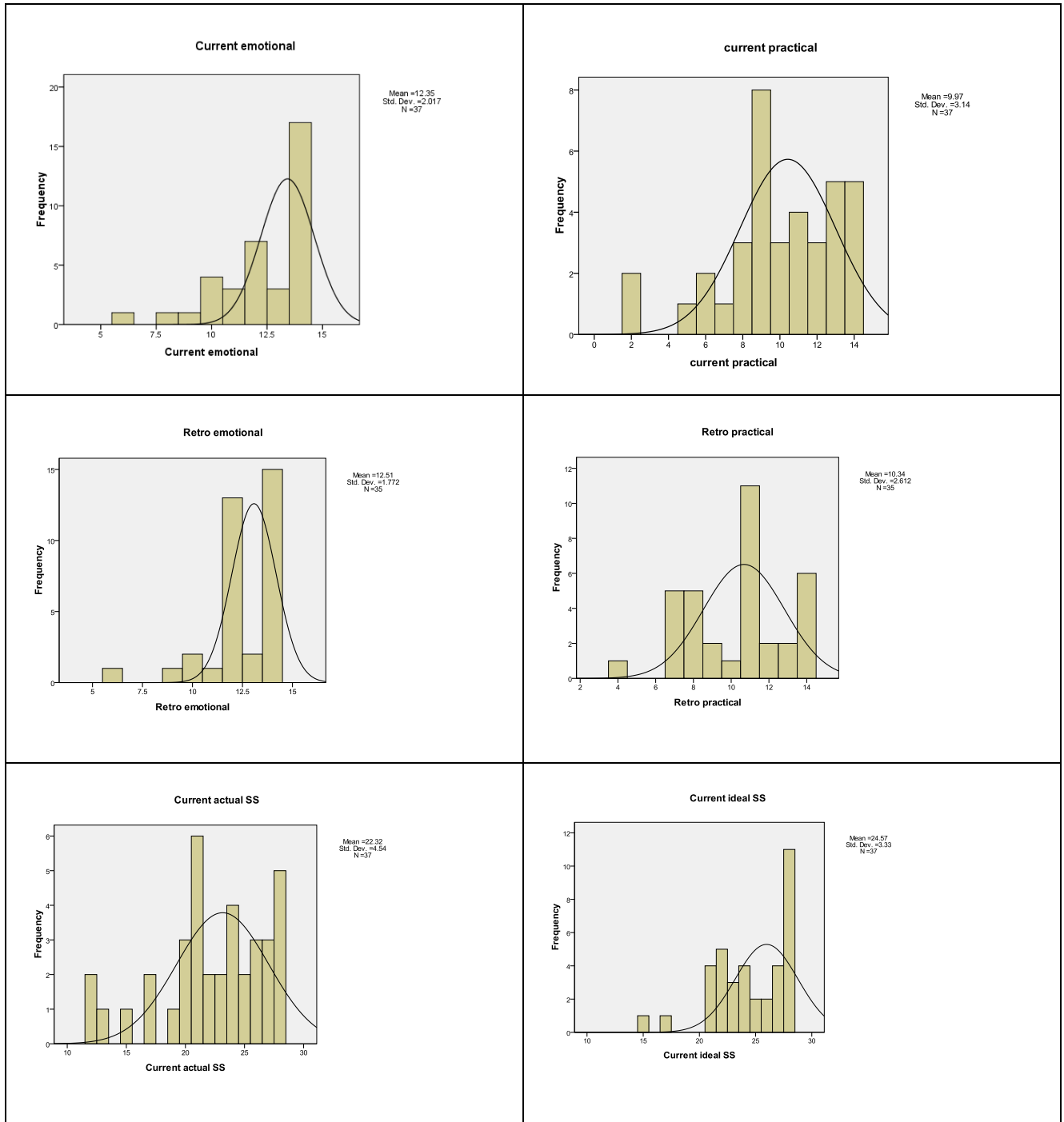
Histograms- network size (filtered)



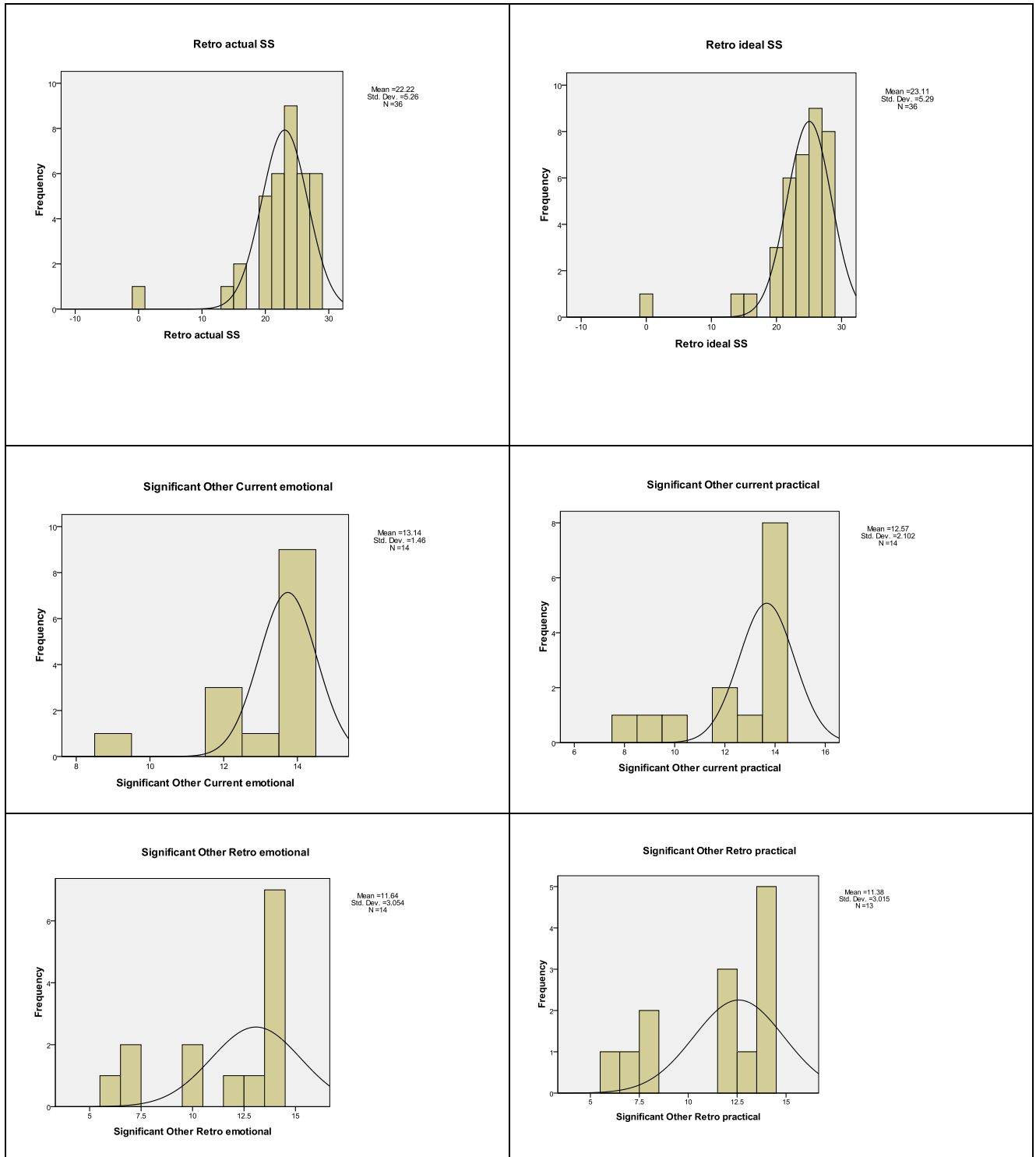
Histograms- contact



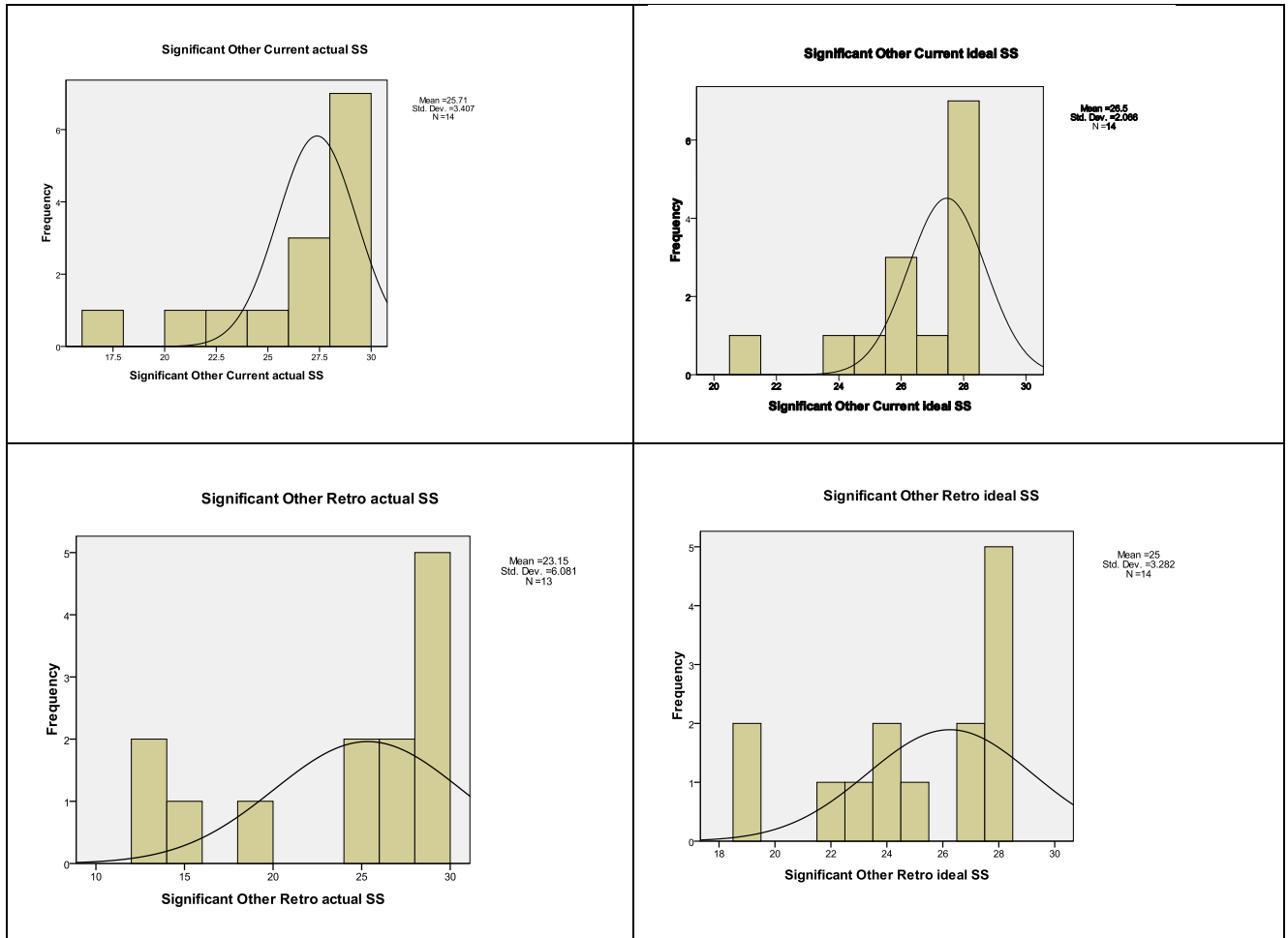
Histograms- Rating on SOS



The Changing Eye of the Beholder



The Changing Eye of the Beholder



APPENDIX 13: Unfiltered data (network size)

Perceived change in size of :	Time	Median (inter-quartile range)	z-score	<i>p</i>	Effect size ($r=z/\sqrt{N}$)
Total network	Current	7 (4- 13.75)	Z= -2.811	.005	0.444 **
	Retrospective	9 (5- 19.75)			
Inner network	Current	4 (2- 5)	Z= -1.730	.084	0.274 *
	Retrospective	4 (2-6.75)			
Peripheral network	Current	3 (1 – 8)	Z= -2.524	.012	0.399 **
	Retrospective	5 (2 – 14.75)			

*small effect size, ** medium effect size (Cohen, 1992).

APPENDIX 14: Unfiltered data (network members included by participants)

Participant	Details of those filtered out (not explicitly named but given as a group)
A	21 shopkeepers 10 carers 30 neighbours
B	10 friends
C	6 staff
D	100 country and western club members 12 at day centre
E	14 Christmas cards
F	25 see at weekly meetings
G	50 Probus group 10 bowling club
H	13 friends
I	60 friends 80 acquaintances
J	18 neighbours
K	132 acquaintances
L	25 at keep fit class 25 at dancing class