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Improvement of family carers' knowledge, skills and attitudes in caring for older people following the implementation of a Family Carers' Training Program in the community in Indonesia.

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TITLE

Improvement of family carers' knowledge, skills and attitudes in caring for older people following the implementation of a Family Carers' Training Program in the community in Indonesia.

ABSTRACT

The purpose of this study was to examine family carers' knowledge, skills and attitudes in caring for older people following the implementation of a Family Carers' Training Program (FCTP). Family carers (n=240) from two villages in Indonesia were randomly selected. All participants were surveyed by questionnaires and their care behaviour observed at baseline, 3 and 6 months. Findings indicated significant increases in knowledge, skills and attitudes in the intervention group over six months compared to those of the control group. Hence, the FCTP demonstrated a positive effect on family carers' capabilities and attitudes in caring for older people living in the community in the study setting.

Key words: experimental, family carers, Indonesia, training program, knowledge/skills/attitudes.

Introduction

Increased life expectancy in Indonesia has resulted in increasing numbers of older people living in the community. However, there are limited health services and resources available for older people compared to those seen for younger people. Institutional care facilities such as nursing homes are not widely available and not commonly used in Indonesia. Consequently, when older people's functional ability declines, the required care is usually provided by their family or relatives.¹ It is still normal practice in Indonesia for older people to stay with their married daughter or daughter-in-law. This trend is now changing as nuclear families are becoming more common, especially in large cities.

In most Asian countries, the family is the traditional social institution providing care for older people.² A family can provide older people with familiar surroundings, love, emotional ties, a sense of belonging and a feeling of being wanted. There are no other institutions that can provide all of these aspects. For many decades, families from Asian countries such as Japan, China, Singapore, Malaysia, Indonesia, Thailand and the Philippines have had strong traditional ties between generations. They all pay full respect and honour to their older relatives and therefore caring for their older relatives is a natural responsibility, and part of their obligation to the people who cared for them.³

Family support is also very important in countries like Indonesia where governments simply cannot afford to provide widespread assistance. In line with World Health Organisation recommendations not to institutionalise older people, it is argued relevant governments should develop policies and programs to strengthen family and community-based support and assist older people by promoting active and healthy ageing.⁴ Caring for older people at home, however, often becomes overwhelming or a burden for some families and so they need additional levels of support.^{5,6}

Family carers often face practical problems related to caring technique, community resource utilisation and lack of adequate knowledge to carry out the caregiving responsibility.⁷ Family carers may also have few opportunities to learn about and prepare for their caring role.⁸ Reports of an evaluation of a family training program in the USA indicated 78% of participants felt much better prepared in providing care for their older relatives following the implementation of the program.⁸ However, very limited statistical data was provided to explain how the skills and attitudes increased following the implementation of the program. It has also been argued that providing support to family carers coming to terms with their newly acquired knowledge was needed if they were to continue their role as carers.⁹ Carers who were more knowledgeable felt more competent and confident in caring for older people. Another intervention study trialled an education program to assist spouses in coping with their partner's Alzheimer's disease and reported that group education sessions resulted in a greater increase in carers' knowledge.¹⁰

Consideration of the unique needs of older people and their family carers living in the community in Indonesia has led to the development of a Family Carers' Training Program (FCTP). In order to evaluate the effectiveness of this program, a number of variables were assessed—including the effect of the program on the family carers' capabilities and the health status of the older people receiving care. This paper will address the effect of the FCTP on the family carers' knowledge, skills and attitudes.

Purpose

The purpose of this research study was to improve the family carers' capabilities and attitudes in caring for older people in the community in Indonesia by implementation of a Family Carers' Training Program.

In order to achieve this purpose, the following objectives were developed:

- 1) To evaluate the family carers' knowledge in caring for older people in the community in Indonesia.
- 2) To test the family carers' skills in caring for older people in the community in Indonesia.
- 3) To examine the family carers' attitudes in caring for older people in the community in Indonesia.

Research Questions

To achieve the purpose and the objectives of this study, the following research questions were developed:

- 1) Is there a difference in family carers' knowledge following the implementation of the FCTP?
- 2) Is there a difference in the family carers' skills following the implementation of the FCTP?
- 3) Is there a difference in the family carers' attitudes following the implementation of the FCTP?

Hypotheses

Based on the research questions, the following hypotheses were developed:

Hypothesis 1. The average score of knowledge of family carers who participated in the FCTP over six months will be significantly increased compared to the average score of knowledge of family carers who did not participate;

Hypothesis 2. The average score of skills of family carers who participated in the FCTP over six months will be significantly increased compared to the average score of skills of family carers who did not participate; and

Hypothesis 3. The average score of attitudes of family carers who participated in the FCTP over six months will be significantly increased compared to the average score of attitudes of family carers who did not participate.

Methods

Design

An experimental design with pre and post-test intervention and control groups was used in this research study.

Participants

The population for this study consisted of all family carers who cared for their older relatives in the six villages in the district of Beiji, Depok, Indonesia. A multistage sampling method was chosen in order to select the villages for this study. Two villages were randomly selected from six villages, and then one village was randomised to become the intervention group and the other became the control group. A total of 240 carers were randomly selected from eligible participants and randomly allocated into each of the intervention group (120) and control group (120). To be eligible for this study, the family carers had to meet the following entry criteria. They had to: 1) have at least an elementary level of education and be able to read and write in the Indonesian language; 2) be involved directly in providing care in their home for an older person over the age of 60 years (as a primary carer); 3) have time to care for the older person; 4) be willing to be involved in this study; and 5) have had no previous training in caring for older people. The sample size was calculated by using the formula comparing two means¹¹ and was based on a significance level of $p= 0.05$ (two-tailed) and power of 80% to detect a 20% or greater difference in means.

Instruments

1. Palmore's Facts on Aging Quiz (FAQ)¹² was chosen to evaluate family carers' attitudes. It is well-validated and has been widely used as a screening tool in many previous research studies to measure caregiver attitudes towards ageing.^{13,14} It has been suggested that one of the purposes of the FAQ was to measure the effect of gerontological training programs.¹³ Test-retest reliability coefficient was .87.

2. Knowledge questionnaire: Following an extensive literature review the researcher developed a knowledge questionnaire to evaluate the family carers' knowledge. The knowledge questionnaire consisted of 15 questions with multiple choice responses with one correct response to each question. The total score was the number of correct responses (scoring 0-15). Topics covered in the questionnaire included normal physiological changes associated with ageing; signs, symptoms and causes of high blood pressure; signs, symptoms and causes of respiratory problems; signs, symptoms and causes of mobility problems; management of urinary incontinence and common health problems in the elderly. Test-retest reliability coefficient was .65.

3. Skills/Care Assessment Tool: This tool was developed by the researcher following an extensive literature review in order to evaluate family carers' care behaviour in caring for older people. This skills assessment tool consisted of 10 items scored on a five-point Likert scale running from 0 to 4. The items included preparation activities (such as explaining the steps of the procedure to the older person), implementation activities (such as performing the skills based on the training package and using appropriate instruments or methods) and termination activities (such as identifying any difficulties or limitations during the procedure). The total skills score was calculated from the mean of five activities or procedures, which were rated simple, moderate or a little complicated and were provided by family carers. For example: a

simple activity was assessing temperature, pulse or respiratory rate; a moderate activity was related to the older person's health problems (such as breathing exercises or Kegel's exercises); and a complicated activity was bathing a bed-bound older person. A test-retest reliability coefficient in the Indonesian population was .81 for the skills tool. Hence, the results were found to be reliable for the study population.

Intervention program

The intervention group undertook the FCTP, which consisted of a three-day workshop followed by two home visits for guiding practice and follow-up support. The control group received usual services and support, however they also received the training package at the end of this study. The training package for the workshop consisted of the trainees' and trainers' guide, and eight education booklets or modules on the following topics:

- Ageing process;
- Mental health of older people;
- Self care/personal care for older people;
- Management of common problems related to "normal" ageing;
- Hypertension in older people;
- Mobility disturbance in older people;
- Respiratory disturbance in older people; and
- Looking after yourself as a carer.

Data collection procedure

As this study was conducted in two different villages, different data collectors collected the data. Data collector training was conducted before gathering the baseline data in order to minimise potential collection bias and information bias across the groups of respondents.

Subsequent to ethical approval being obtained, the eligible family carers were identified from Health Centre records and field educators' records from both villages in the Beiji district, Depok Municipality of Indonesia. Prior to commencement, the participants were fully informed about the research study verbally, given a written plain language statement and asked to provide written consent. The questionnaires were self-administered before the Family Carer Training Program commenced and at 3 and 6 months after the program was completed. A skills assessment was conducted in the carer's home by the nurse data collectors to evaluate care behaviour of family carers in caring for older people. This study was approved by the Human Research Ethics Committee, Queensland University of Technology and the Medical Research Ethics Committee, Faculty of Medicine, University of Indonesia. Approval was also given by the Head of Beiji District, Depok, Indonesia.

Data analysis

Data analysis was undertaken using the Statistical Package for Social Sciences.¹⁵ The data was checked for errors in coding and the assumptions underlying the statistical methods were also checked.

The knowledge, skills, and attitudes of family carers in caring for older people over the three time points and across the groups (intervention and control) and possible influences of other variables (e.g. ethnicity, marital status, levels of education, family income, prior/first experiences, baseline knowledge) were controlled in the analysis. Two-way repeated measures ANCOVA was therefore chosen. Further analyses were conducted to evaluate differences between intervention and control groups by independent pairwise comparisons (bonferroni).

Results

Characteristics of participants

Sixty-four percent of the family carers were aged between 20 and 39 years, and 97% were female. This percentage is understandable given that caring for relatives is often considered a woman's role. Most participants were married (87%), Moslem (99%), and Betawinese (67%). The majority of participants had elementary schooling (40%) and 61% had never been employed, with the family income less than Rp (rupiah) 1,000,000 (AUS \$200) per-month. These data are closely related to their role as housewives. Moreover, most participants reported they had been primary carers for their older relatives for more than five years and 44% had three people or more to help them in caring for their older relatives at home. They also reported little prior experience in caring (64%). Most participants reported more than one reason for taking a caring role. The majority (51%) saw taking a caring role as a family obligation, 27% aimed to provide better care, and 19% reported that no other family or friends were willing. The means and standard deviations for the knowledge, skills and attitudes over the three time points are shown in Table 1.

Insert Table 1.

Knowledge of family carers

An initial two-way repeated measures ANCOVA for the knowledge of family carers was conducted, including ten potential confounders. Knowledge at baseline was the only variable to be significant over the three time points ($F_{2,404}=115.45$, $p<.001$). A second two-way repeated measures ANCOVA was conducted using baseline knowledge as a covariate. There was a significant interaction of time and group ($F_{2,440}=25.48$, $p<.001$) and a significant interaction of time and baseline knowledge ($F_{2,440}=127.83$, $p<.001$). In addition, there was a significant main effect for time ($F_{2,440}=306.55$, $p<.001$) and group ($F_{1,220}=75.84$, $p<.001$). The result of this two-way repeated measures ANCOVA was not different from the unadjusted two-way repeated

measures ANOVA (which did not control for baseline knowledge) which also revealed a significant interaction of time and group, and a significant main effect for time and group. Hence, controlling for baseline knowledge did not influence the outcome on the family carers' knowledge.

To interpret the significant interaction of time and group (See Figure 1), independent pairwise comparisons (bonferroni) were conducted between the intervention and control groups over the three time points. These tests showed that, even after controlling for baseline differences, the intervention group had significantly better knowledge than the control group at 3 months ($F_{1,220}=299.89$, $p<.001$) and 6 months ($F_{1,220}=394.51$, $p<.001$). The effect sizes for time and group were large ($\text{Eta} \geq .35$). This means that after the training program the knowledge scores averaged for family carers in the intervention group were significantly improved compared to the control group.

Insert Figure 1.

Skills of family carers

Similarly to the previous analysis, an initial two-way repeated measures ANCOVA for the skills of family carers was conducted including the ten potential confounders. Level of education was the only variable to be significant between groups ($F_{1,202}=4.59$, $p<.05$). A second two-way repeated measures ANCOVA was conducted using education as a covariate. There was a significant interaction of group and time ($F_{2,440}=335.22$, $p<.001$) and a significant interaction of group and education ($F_{1,220}=5.08$, $p<.01$). In addition, there was also a significant main effect for time ($F_{2,440}=355.09$, $p<.001$) and group ($F_{1,220}=213.01$, $p<.001$). The results of two-way repeated measures ANCOVA was not different from the unadjusted two-way repeated measures ANCOVA (which did not control for education) which also revealed a significant interaction of time and group, and a significant main effect for time and group. Hence, controlling for education did not influence the outcome on the family carers' skills.

To interpret the significant interaction of time and group (See Figure 2), independent pairwise comparisons (bonferroni) were conducted between the intervention and control groups over the three time points. These tests showed that, even after controlling for educational differences, the intervention group had significantly better skills than the control group at 3 months ($F_{1,220}=39.92$, $p<.001$) and 6 months ($F_{1,220}=6548.27$, $p<.001$). The effect sizes for time and group were large ($\text{Eta} \geq .35$). This means that after the training program the averaged scores of knowledge of family carers in the intervention group were significantly improved compared to the control group.

Insert Figure 2.

Attitudes of family carers

Similar to the preceding analysis, a first two-way repeated measures ANCOVA for attitudes of family carers was conducted including the ten potential confounders. Two variables were found to be significant between groups. They were ethnicity ($F_{1,202}= 5.15$, $p<.05$) and global social support ($F_{1,202}=7.58$, $p<.01$). A second two-way repeated measures ANCOVA was conducted using ethnicity and global social support as covariates. There was a significant interaction of group and time ($F_{2,436}=6.24$, $p<.01$), a significant interaction of group and ethnicity ($F_{2,218}=4.07$, $p<.05$), and a significant interaction of group and global social support ($F_{2,218}=3.45$, $p<.05$). In addition, there was a significant main effect for time ($F_{2,436}=18.78$, $p<.001$) and group ($F_{1,218}=113.26$, $p<.001$). The results of this two-way repeated measures ANCOVA were not different from the unadjusted two-way repeated measures ANOVA (which did not control for ethnicity and global social support) which also revealed a significant interaction of time and group, and a significant main effect for time and group. Hence, controlling for ethnicity and global social support did not influence the outcome on the family carers' attitudes.

To perform the significant interaction of time and group (See Figure 3), independent pairwise comparisons (bonferroni) were conducted between the intervention and control groups over the

three time points. These tests showed that, even after controlling for ethnicity and global social support differences, the intervention group had significantly better attitudes than the control group at 3 months ($F_{1,219}=556.15$, $p<.001$) and 6 months ($F_{1,219}=746.97$, $p<.001$). The effect sizes for time and group were large ($\text{Eta} \geq .35$). This means that after the training program the averaged scores of family carers' attitudes in the intervention group were significantly increased compared to the control group.

Insert Figure 3.

Discussion

Ninety-six percent of family carers in the intervention group at 6 months were willing to adopt the contents of the training program as part of their routine activities as a carer. This is consistent with other studies that reported that 87% of carers participated in a longitudinal follow-up program.¹⁶ With regard to the time family carer respondents had been giving care, time in this role ranged from six months to more than five years. The majority were women and had been providing care for more than five years, did not work outside the home and had completed primary high school. In general, traditional Indonesian families with dependent relatives are experiencing longer periods of time caring for their relatives than “modern” families. The responsibility for caring for their older relatives usually falls on the adult children of the family, especially daughters and followed by daughters-in-law, wives and other female relatives. These results are consistent with those of other studies^{17,18} where the majority of caregivers were daughters, followed by wives, other female relatives and male caregivers such as husbands, sons and other male relatives. This means that women tend to become primary carers for their older relatives because culturally–defined gender roles strongly impact on caring practice.

Caring for dependent family members has been the primary role of women in Asian countries such as Japan, Taiwan, Malaysia, Philippines, and Indonesia.^{3,18} It has been reported that cultural issues indicate that the wife, adult daughter or daughter in-law, especially the first daughter in-law, are usually the primary carer for their older relatives.¹⁸ This study found similar trends. One hundred percent of the intervention group and 93% of the control group of the family carers were female, and only 7 % were male family carers. Other variables which were not equivalent for both groups were adjusted (for example, ethnicity and global social support). However, in general, the characteristics of respondents in this study were similar with those of previous studies conducted in Indonesia, including age, gender, education, marital status, and employment status.^{19,20}

In general, the average scores of knowledge, skills and attitudes of the family carer participants in the intervention group were significantly increased over six months compared to those of the control group. However, the increases over the three time points were different. The knowledge of the family carer respondents was significantly increased between time 1 and time 2 ($F=510.78$; $p=.000$), but there was no significant increase between time 2 and time 3 ($F=.20$; $p=.65$). This may be related to the regular interventions through the workshop and close supervision between time 1 and time 2. However, no intervention or new information was given between time 2 and time 3.

Other than those related to older people suffering from dementia, a very limited number of studies have been undertaken regarding the knowledge, skills and attitudes of family carers in caring for older people in the community. One study relating to training family carers of impaired older people in the community reported most participants (78%) felt 'much better prepared' and 22% felt 'somewhat better prepared' to provide care for their older relatives as a result of attending training sessions.⁸ All participants 'strongly agreed' the training program met their goals. Another study of family caregiver training supported this finding in that 78% of participants felt 'well prepared' to provide care after 3 and 6 months.²¹ However, these results

reflect the trainees' perceptions of the training program rather than the real scores of their knowledge related to the training content. The present study reports the knowledge score related to the training content rather than merely examining trainees' perceptions. This is consistent with work that demonstrated an education program increased carers' knowledge about dementia significantly over a six-month period.¹⁶ Family carers who face the necessity and routine of caring for older people need information and education and thus, increased knowledge is generally considered to benefit carers and older people.¹⁶

The average scores of the skills of family carer respondents were not significantly increased between time 1 and time 2 ($F=.36$; $p=.55$), but they were significantly increased between time 2 and time 3 ($F=503.96$; $p=.000$). This may be caused by the limited time for the family carer respondents to practise their skills during the first three months. However, after 6 months their skills level increased significantly. It has been stated that adults are likely to learn more effectively when the learning tasks are seen to be relevant, meaningful, interesting, and useful.²² Trainees are also reported as being able to retain 80% of what they use and do in real life or in learning by doing.²³ It is clear skill improvement is associated with the amount of time available for practice in real settings.

By using Palmore's Facts on Ageing Quiz, the average scores of the attitudes of family carers towards ageing were significantly increased in the intervention group over six months when compared to those in the control group. The increase in the post-test score from the pre-test score in the intervention group was consistent with that of previous studies.^{13,14}

However, the scores from this study were lower than the scores reported in other studies.¹³ The differences may relate to the educational background of the participants as previous studies used student nurses and nurses as participants, whereas the present study had family carers as participants. It is highly likely that nurses or student nurses would have different attitudes towards aged care or gerontic nursing than family carers. This is consistent with Palmore's view

²⁵ which indicates that levels of education affect overall performance. The scores were significantly increased across the three time points ($F= 28.49$; $p= .000$; for the time 1 and time 2 and $F=4.82$; $p= .029$ for time 2 and time 3). Interestingly, family carers' attitudes towards ageing became more positive following the training program intervention.

No previous studies could be found comparing a pre and post-test control group reflecting the knowledge and attitude scores of non-formal carers, such as family carers in caring for older people in the community. The post-test scores at 3 and 6 months after the training program reflects the participants' ability to learn various simple concepts and issues related to normal ageing, age-related changes, and issues concerned with support for older people in the community setting. The improvement of family carers' capabilities in caring for older people and attitudes towards ageing needs to be evaluated and supported.

It has been argued that knowledge does not guarantee quality of care, however, increased knowledge might impact on attitudes towards ageing.¹⁴ In a study of carers' knowledge related to dementia, it was found that carers with higher levels of knowledge related to dementia had significantly lower levels of depression.²⁶ Similar effects were found in that higher levels of caregiver's self-efficacy and problem-focused coping were associated with lower levels of caregiver's burden.¹⁸ Hence, more knowledgeable carers felt more competent and confident in caring for older people and this may increase the family carer's self-efficacy and decrease their risk of psychosocial problems and burden.¹⁸ As a consequence, this influenced the quality of care for older people, and resulted in an improvement in the overall quality of life for older people living in the community.

The results of this study indicated that the knowledge, skills and attitudes of family carers were low before the training program. The training program and follow-up support helped and facilitated family carers to increase their understanding of the ageing process and aged care, and allowed family carers to provide better care for their older relatives in the community. This is

supported by significant increases in family carers' skills in caring for older people six months after the intervention. In addition, there were also large magnitude effect sizes across the three time points and groups for the knowledge, skills and attitudes after the training program ($Eta \geq .35$). The lack of family carers' preparation in caring for older people at home may result in inadequate care for older people,¹⁸ which could influence the quality of life of older people.

The majority of families were found to be willing to care for their older relatives at home but did not clearly understand the ageing process and how to care for older people. This is supported by low scores of knowledge, skills and attitudes before the training program. Some of the family carers could not understand or recognise the changing needs of older people, or the signs and symptoms of degeneration and therefore found difficulties in caring for older people. Without this understanding they were limited in their ability to provide care to meet older people's needs and solve their problems. These issues were compounded by the limited formal support available to assist family carers and older people in the community. Improvement of family carers' capability in caring for their older relatives in the community is crucial, because the family is the main source of assistance to older people in Indonesia and can help to increase the health status of older people living in the community.

Conclusion

In order to promote the quality of life for older people in general, a training program that encompasses knowledge and skills related to normal ageing, changes in older people, and aged care is very important and urgently needed, especially for countries where the government cannot provide adequate support for older people. The FCTP trialled in this study was found to have a positive impact in improving the family capabilities and attitudes in caring for older people in the study population. This program is recommended as an alternative model for the family carers who are willing to care for their older relatives at home, especially for those countries who are unable to provide adequate governmental support for older people.

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Table 1. The mean (sd) of knowledge, skills and attitudes of family carers in caring for older people in the villages Tanah Baru and Beiji, Beiji District, Depok Municipality of Indonesia, February—September 2001

Variables	Range	Intervention group			Control group		
		Mean (SD)			Mean (SD)		
		baseline	3 months	6 months	baseline	3 months	6 months
<i>Knowledge</i>	0-15	5.78(1.79)	12.87(1.16)	13.33(1.07)	7.60(2.19)	7.95(2.50)	8.14(2.34)
<i>Skills</i>	0-40	11.19(1.57)	12.54(1.98)	33.97(2.53)	11.09(1.77)	11.20(1.50)	11.55(1.26)
<i>Attitudes</i>	0-25	9.38 (2.42)	17.92(2.43)	18.94(2.02)	9.48 (2.53)	9.48 (2.12)	9.51 (2.47)

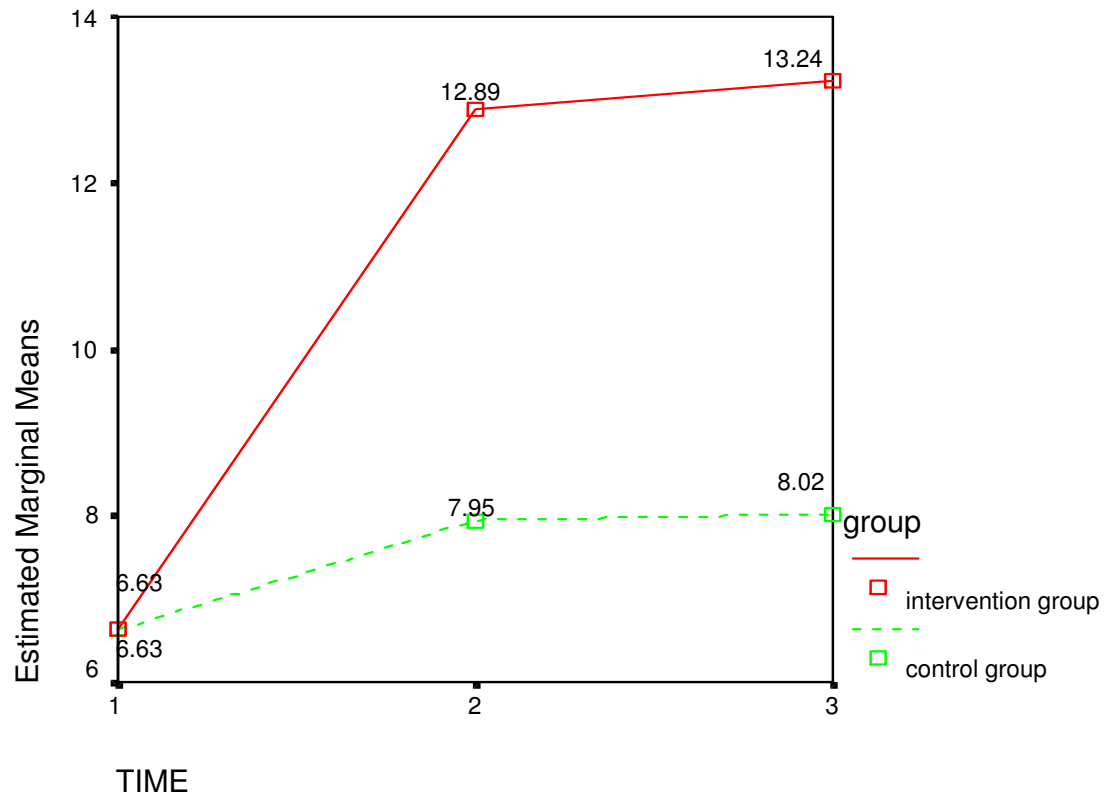


Figure 1: Graph of the interaction between time and group for the knowledge scores of family carers

(Note: means given in this graph have been adjusted for baseline differences)

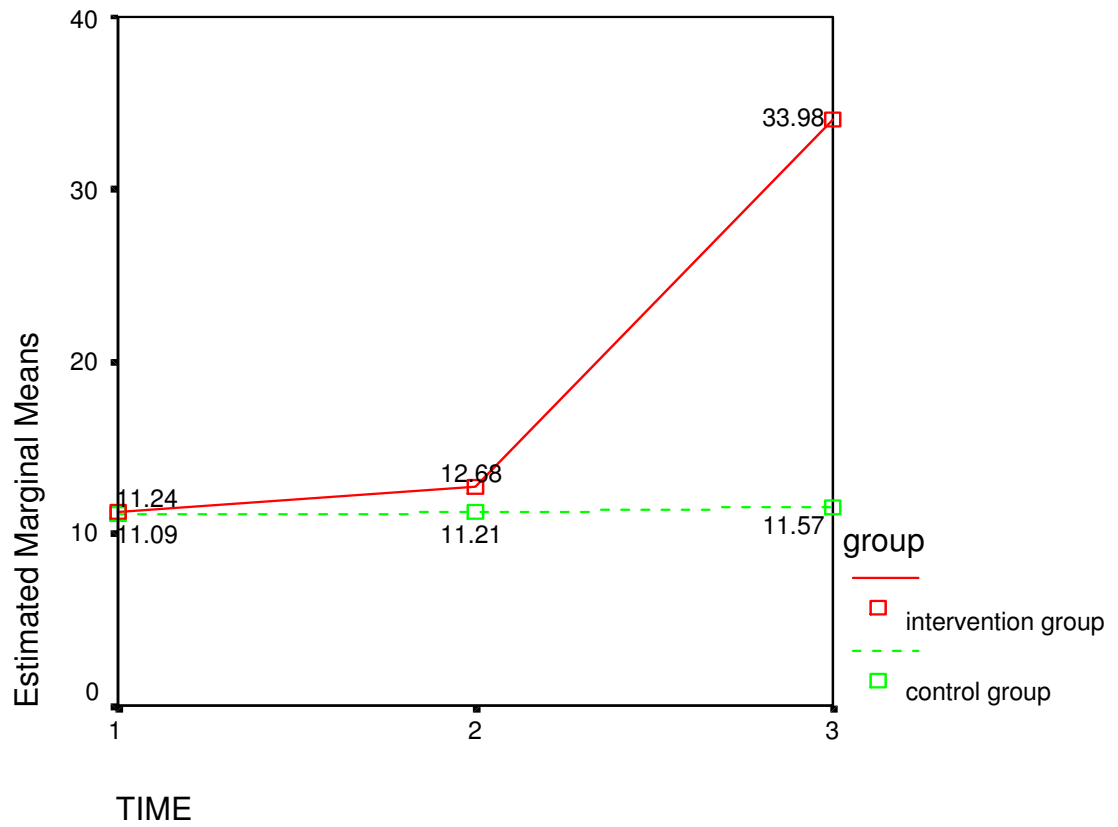


Figure 2: Graph of the interaction between time and group for the skills scores of family carers

(Note: means given in this graph have been adjusted for baseline differences).

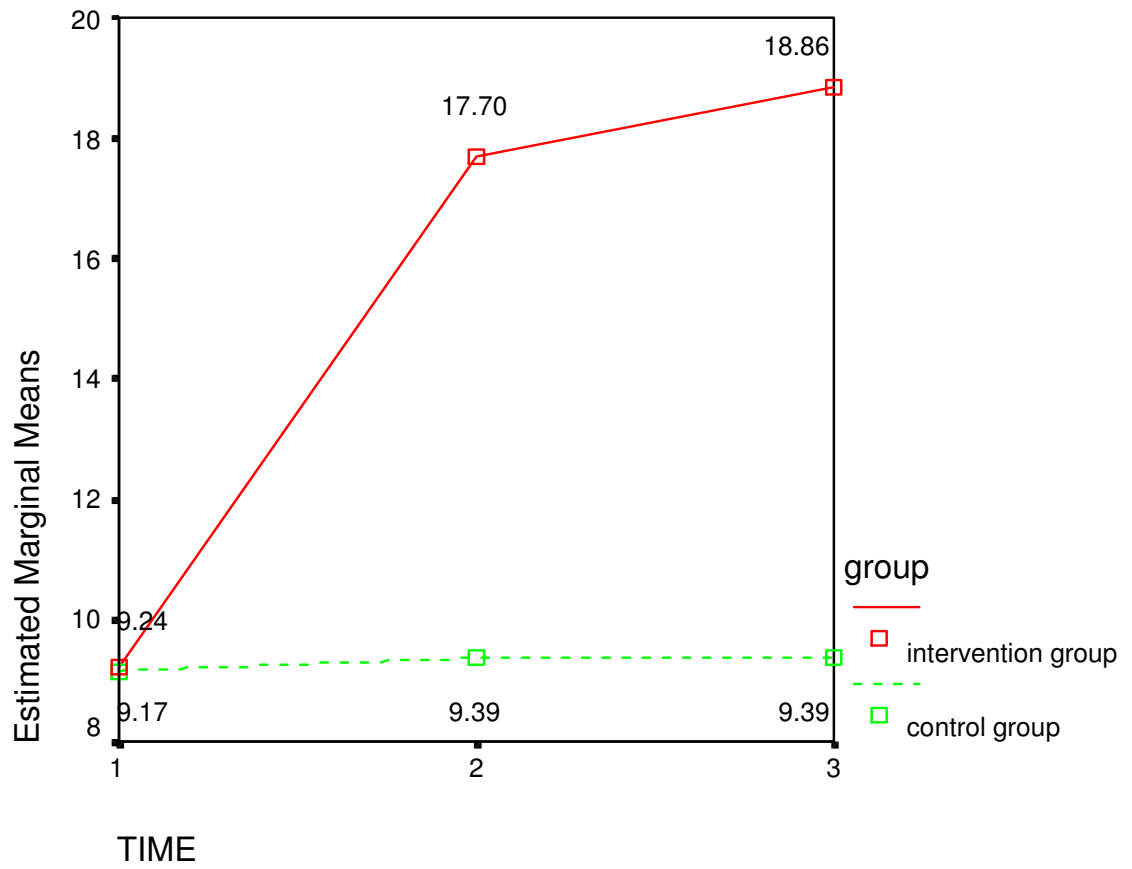


Figure 3: Graph of the interaction between time and group for the attitudes scores of family carers

(Note: means given in this graph have been adjusted for baseline differences).