

INFLUENCE OF VOLUNTARY WORK INTERVENTION ON THE
MOOD STATUS OF OLDER VOLUNTEERS

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ABSTRACT

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The aim of this study was to investigate the positive and depressive mood changes in older volunteers after a three-month voluntary work intervention through a one-group experimental research design. The participants were drawn from the Volunteering, access to Outdoor activities and Wellbeing in older people (VOW) project. The participants were recently retired group, aged 50 and above (N=47, 42 female). Prior training sessions were arranged for the participants before the intervention period. Pre and post assessment of depressive mood was measured through applying the original form of Center for Epidemiologic Studies Depression Scale (CES-D) and positive mood was measure through the positive affect items of the CED-D sub-scale. Data was analyzed with descriptive statistics, paired t test, general linear model-repeated measure and multiple response frequency analysis.

Our main finding observed a non-significant change in positive and depressive mood in the pre-post intervention period. At both measurement levels, the participants had an high level of positive mood and low level of depressive symptoms. Alternative objectives manifested a non-influence of previous voluntary work experiences on mood changes and “meeting new peoples, help others and improve their mood status” were the top motivation factors influencing older adults towards voluntary work. Further experimental research is required to investigate the relationship between voluntary work and mood changes.

Keywords: Older volunteers, voluntary work, depressive mood, positive mood, motivation factors

CONTENTS

ABSTRACT

1.0 INTRODUCTION4

2.0 VOLUNTARY WORK AND OLDER ADULTS6

2.1. Global trend in voluntarism.....6

2.2 Voluntary work6

2.3 Motivational factors and barriers in voluntary work.....7

2.4 Theoretical view on voluntarism8

2.5 Individual benefits of voluntary work.....9

3.0 POSITIVE MOOD10

3.1 Consequences of positive mood10

3.2 Enhancing positive mood11

4.0 DEPRESSIVE MOOD12

4.1 Risk factors for depression.....12

4.2 Voluntary work and depression12

5.0 ASSESSMENT OF MOOD STATUS.....14

6.0. INTERIM SUMMARY.....15

7.0 AIMS AND RESEARCH QUESTIONS.....16

8.0 PARTICIPANTS AND METHODS17

8.1 Study design and participants17

8.2 Data acquisition and variables.....18

8.3 Statistical analysis.....19

9.0 RESULTS19

10.0 DISCUSSION.....27

REFERENCES.....31

1.0 INTRODUCTION

Voluntarism is considered as a foundation of productive aging as it provides services that are economical and of social value (Morrow-Howell et al., 2003). It is a free activity, engaged by an individual without any compensation or regular payment or rewards to produce goods and services for an organization and for other individuals (Burr et al., 2005). There are various motivation factors influence older people towards voluntary work such as own helping attitude, desire for active life, sharing skills and knowledge, intellectual development, self-esteem, productivity, moral obligation, interaction, companionship, peer support and personal growth (Brown et al., 2011; Okun & Schultz, 2003; Petriwskyj et al., 2007). However, there are certain hindrances which might prevent older people from voluntary work i.e. lack of opportunity, health problems, lower education, low social economic status, time commitment and organization culture (Brown et al., 2011; Independent Sector, 2000; Li & Ferraro, 2005; Timonen et al., 2011;). Moreover, from a bio-psycho-social aspect, individual benefits gained from voluntary work are increased subjective and objective health, reduced functional dependency and cardio-vascular diseases, decline in mortality, improvement in cognitive and social activity, increased life satisfaction, self-esteem and self-efficacy, decreased depressive and negative symptoms, improved happiness and sense of control (Burr et al., 2011; Fried et al., 2004; Harris & Thoresen, 2005; Hunter & Linn, 1981; Lum et al., 2005; Morrow-Howell et al., 2003; Oman, 1999; Thoits & Hewitt, 2001; Willigen, 2000). However, the main focus in this study deals with mood and voluntary work, particularly, the positive mood and depressive symptoms.

Mood is a fundamental psychological state that can create a response to a situation and a less intense feeling that lacks a definite cause or stimulus. The mood can be positive or depressive. Positive mood is a feeling that reflects a level of pleasurable engagement with the environment, such as happiness, joy, excitement, enthusiasm, and contentment (Cohen & Pressman, 2006) whereas depression is characterized as an unhappy mood, low interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration (World Health Organization, 2011). Therefore, assessing the status of

mood helps to define the individual's wellbeing, whereas, the level of positive mood and depressive symptoms determine, whether individual enjoys a maximum level of pleasurable engagement (e.g. happiness, joy) or maximum level of depressive symptoms (e.g. unhappy mood, low pleasure, low energy, and poor concentration). Hence, it is important to analyze whether participating in voluntary work activities could bring changes in the level of mood. In fact, this might consequently describe the effect of voluntary work on mood status.

Previous observational studies have founded that voluntary work enhance the level of positive mood (Jimenez & Fuertes, 2005; McIntosh & Danigelis, 1995) and reduce the level of depressive symptoms (Hong et al, 2009; Hunter & Linn, 1981; Isaac et al., 2009; Li & Ferrano, 2005; Lum & Lightfoot, 2005; Musick & Wilson's, 2003; Windsor et al., 2008). However, to the best of my knowledge, there were no experimental or intervention studies to confirm the acquired knowledge. Therefore, an uncertainty still exists about whether mood directly correlates with voluntary work, i.e. whether voluntary work improves mood or whether people with lower depression are more likely gravitated towards voluntary work. Hence, this study would be the first one-group pretest-posttest experimental design to investigate the changes that occur in positive and depressive mood after a three month intervention period. In addition, this study sought to identify whether previous voluntary experience and socio-economic status had any influence on mood status, and baseline motivation factors which direct older adults towards voluntary work activities.

2.0 VOLUNTARY WORK AND OLDER ADULTS

2.1 Global trend in voluntarism

A general review on voluntarism has found that it is most popular in the United States, when compared with rest of western world (Bonsdorff et al. 2010). According to the Volunteering in the United states-2010 report released by the Bureau of Labour Statistic, between September 2009-2010 about 62.8 million people volunteered through or for an organization at least once a year, and among them 25 percent of the population are aged 55 and above. In Europe, the rate of voluntarism differs from country to country. Erlinghagen et al. (2005) analyzed the data from Survey of Health, Aging and Retirement in Europe (SHARE) which showed a higher participation rate of voluntarism in Northern Europe and significantly lower in Mediterranean countries. In addition, age groups above 75 are more active volunteers in Nordic countries when compared with other European nations. According to Volunteering in the European Union - National report of Finland, there is no official data on the exact number of volunteers in Finland. The report however highlighted a survey conducted in 2002 which showed that 37 percent of the Finnish population aged between 15 – 74 years actively participated in volunteering over 12 months preceding the survey. The report has drawn attention to another survey conducted by Eurobarometer (2006) on European Social Reality, which stated that half of the Finnish population participates actively in voluntary work. The report underscored that there is no significant gender difference in the level of volunteering and the revealed age group between 50-74 years spent 22 hours in voluntary activity per month.

2.2 Voluntary work

Voluntary work is an activity carried out by an individual according to his or her choice for the benefit of another individual, group or common cause without rewards or financial benefit. According to Wilson & Musick (1997) voluntary work is defined as “an activity that involves spending time, unpaid, doing something that aims to benefit the community

in general or its individuals or specified subsets of community members who are in need, such as older home bound persons". The South Australian Compact Advancing the Community Together: A Partnership between the Volunteer Sector and the South Australian Government (May 2003) (ACT) defined *volunteering as an activity that is of benefit to the community, is done of one's freewill and is undertaken without monetary reward*. Therefore, voluntary work can be possible either within the framework of community organizations or groups or as individuals working outside structured organizations. Voluntary work may be categorized in to formal and informal voluntary work. When an individual engages with a recognized organization or establishment, then it is referred to as formal voluntary work. For example, volunteering in non governmental organization (NGO's), church, school or other established settings with a monitoring system to supervise and evaluate the performed activity would be considered as formal voluntary work. Meanwhile, informal voluntary work refers to individuals undertaking work outside an organized setting such as providing care and support to family, friends and neighbors. Voluntary work varies on several dimensions, which include time dedicated, organization setting, service type, interaction between staff and other volunteers, and support from the organization (Morrow-Howell, 2010).

2.3 Motivational factors and barriers in voluntary work

Clary et al. (1998) identified six motives for volunteering: Values (concerns for the welfare of others); Understanding (opportunity to learn) Social (strengthen social relationships) Career (increase job prospects); Protective (to reduce negative feelings, or to escape from one's own problems); and Enhancement (increase self-esteem, self-confidence, and self-improvement). However, the common practices engaged by older volunteers are religious activities, health, social/community service, tutor, mentor and friendly visitor (Morrow-Howell, 2007; Musick & Wilson, 2008). Moreover, older volunteers are motivated by their own helping attitude and desire for active life rather than developing knowledge/skills and advancing careers (Okun & Schultz, 2003). Petriwskyj et al. (2007) suggested that older adults are not only motivated through helping attitude but also have focus in improving and sharing skills and knowledge and to be intellectually stimulated. Other key motivation

factors cited in Brown et al. (2011) are self-esteem, productivity, moral obligation, interaction, talent utilization, companionship, peer support and personal growth. In addition, happiness and joy received through previous voluntary work might become a possible motivation for practicing further voluntary work activities (Erlinghagen et al., 2005).

However, there are potential hindrances which may limit older people from voluntary work activities such as lack of opportunity (Independent Sector, 2000), health problems (Li & Ferraro, 2005; Petriwskyj et al., 2007) low level of education, low income and low social integration (Timonen et al., 2011). Previous studies suggested that time commitment; financial constraints and organization culture are other common hindrance (Brown et al., 2011). While, age and gender create certain impacts on volunteering, it is evident that the age group between 65-74 years old, volunteered more frequently than other group (Timonen et al., 2011) and women's participation is higher than men's (Wahrendorf et al., 2008).

2.4 Theoretical view on voluntarism

Activity theory which posits that to maintain a previous lifestyle and activity level, older adults either engaged themselves in their previous activities or found a substitute to compensate (e.g) engaging themselves with alternative hobbies, voluntary work or other stimulating pursuits (Sigelman & Rider, 2009). Continuity theory, on the other hand, explains that older adults construct adaptive choices without disturbing existing internal (personality, values, morals, preferences, and behavior pattern) and external structure (physical environment and social activities) and they prefer to accomplish it through strategies of their past experiences and their social world. (Atchley, 1989) In addition, older people employ their past experience to visualize their future and structure their choices in response to normal aging (Atchley, 1989). Previous studies have suggested that level of education, income and previous voluntary experience had greater influence in late-life voluntary work activities (Caro & Bass, 1997; Chambré, 1984; Okun, 1993).

2.5 Individual benefits of voluntary work

Various indicators of wellbeing are at higher level among those who volunteer when compared with the non-volunteer and had been verified through various research studies. Cross-sectional research findings suggested that people engaged in voluntary work activities had good physical health, psychological health, improved quality of life, fewer symptoms of depression, anxiety, and somatization (Souza et al, 2011, Wu et al, 2005, Hunter & Linn, 1981). Meanwhile, the longitudinal studies have also indicated that voluntary work activities would enhance individual wellbeing such as increased or improved objective and subjective health, functional capacity, psychological wellbeing, life satisfaction and decreased or reduced depression symptoms, functional dependency, cardio vascular diseases and mortality (Burr et al., 2011; Harris & Thoresen, 2005; Lum et al., 2005; Morrow-Howell et al., 2003; Oman et al., 1999; Thoits & Hewitt, 2001; Willigen, 2000; Wilson, 2000). However, there are limited experimental and intervention research studies which explains the association between voluntary work and wellbeing among older adults. Most of the studies had been conducted in physical activities and voluntary work; which demonstrated a significant positive association (Tan et al., 2006). Moreover, other interventional studies have suggested that voluntary work activities would enhance significant improvement in physical health, psychological health, social activity and individual wellbeing (Fried et al, 2004; Yuen et al. 2008; Glass et al, 2004).

Doing voluntary work may have different benefits among male and female, different age group, different organization setting, ethnicity and number of hours. The scholars had discovered that volunteers spending more than 100 annual hours had more positive effects than spending less than 100 hours per year. People engaged in more than 100 hours of voluntary work had an independent and significant protective effects, with lower risks of poor health, daily living limitation and mortality (Luoh & Herzog, 2002), slower declines in self-reported health and physical functioning, slower increases in depression level, and lower mortality rates (Morrow-Howell et al, 2003). According to a previous study, ethnicity and gender have also been found to have different beneficial effect from voluntary activities (McIntosh & Danigelis, 1995).

3.0 POSITIVE MOOD

Positive mood is defined as feelings that reflect a level of pleasurable engagement with the environment, such as happiness, joy, excitement, enthusiasm, and contentment (Clark, Watson & Leeka, 1989, Cohen & Pressman, 2006). When an individual experiences a positive mood, he or she may have one or more positive characteristics like confidence, optimistic, and good self-efficacy; likability and positive construal of others; sociability, energetic; pro-social behavior. It also helps to improve health condition, immunity and physical well-being; effective coping with challenge and stress; and originality and flexibility (Lyubomirsky et al., 2005). Moreover, a positive mood indicates a feeling that a person is enjoying a high peak of happiness and self-satisfied life. Empirical study (Jimenez & Fuertes, 2005) have showed that when people experience positive mood, their likelihood of feeling increases, creates more resistance to adversity, facilitates in establishing relationship, increases social support network, coalitions etc., and it also undoes the psychological effects caused by negative emotions.

3.1 Consequences of positive mood

According to earlier studies, positive mood has been associated with reduced morbidity, decreased symptoms and pain, and increased longevity among older adults (Pressman & Cohen, 2005). According to a prospective study (Huppert, 2006), people with higher level of positive mood are more productive and socially engaged and have increased self-reported health, physical health, healthier lifestyles and social integration. Meanwhile, increase in the level of positive mood eventually increases the quality of sleep, improves physical activity, standard dietary habits and lower stress hormones (Pressman & Cohen, 2005). Database search on cross-sectional studies revealed that positive affect had a significant positive association with self-construal, sociability, pro-social behavior, healthy behavior, high immune functioning and coping with stress (Lyubomirsky et al., 2005). In this scenario, the above research investigation illustrated a strong base for positive mood

and its effects on older volunteers, with the strong assertion that positive mood could reflect a revolution in an individual's life.

3.2 Enhancing positive mood

When we think about enhancing factors for positive mood, the research inquiries disclose a strong evidence for physical activity (Fox, 1999; McAuley et al., 2006; Pierce & Pate, 1994). A prospective study (Jimenez & Fuertes, 2005) carried out in 109 volunteers belonging to 26 different organizations aged between 17 to 68 years (mean age =30 years) disclosed a significant relationship ($M=5.85$, $SD= .87$) between positive mood and voluntary work. On the other hand, a weighted sub-sample from Americans' Changing Lives Panel Study explored that formal religious, non religious and informal volunteer practice among older American people age 60 and above had helped to increase positive mood and decrease negative symptoms (McIntosh & Danigelis, 1995).

However, while analyzing, we should consider certain confounding factors which may manipulate positive mood. Earlier studies had accounted that positive mood in older adults are influenced by stress, duration of sleep, climatic condition, employment status, social interaction and social support (Aquino et al., 1996; Bower et al., 2010; Dijkstra et al., 2009 Howarth & Hoffman,1984; Walen & Lachman, 2000), Meanwhile, other studies had suggested that gender, race, education, and marital relationship, geographical living, physical activity, mental disorders, health condition and disability might influence positive mood among older people (McIntosh & Danigelis, 1995; Mroczek & Kolarz, 1998; Oswald et al., 2003; Bartholomew et al., 2005; Kendig et al., 2000). Taking this in to account, it is understandable that any internal or external interaction can influence mood, that is, interaction can fluctuate high positive mood to a low positive or negative mood or vice versa. An empirical study (Bower et al., 2010) carried out among persons with major depression ($n = 35$), minor depression ($n = 25$) and healthy controls ($n = 36$), whereby, positive affect (PA) and negative affect (NA) were assessed 10 times daily for three consecutive days. The result showed that more impaired sleep quality was associated with lower level of positive affect ($\beta =-0.54$, $SE = 2.68$, $P < 0.001$) which predicts that poorer

sleep quality leads to lower ambulatory positive affect. A further study reported that women had lower positive affect than men whereas educated and married respondents had higher positive affect (Mroczek & Kolarz, 1998).

4.0 DEPRESSIVE MOOD

Depression is a common mood disorder widely seen in older adults. It is defined as a common mental disorder which shows a depressed mood, low interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration (World Health Organization, 2011). According to Diagnostic and Statistical Manual of Mental Disorders- IV (DSM- IV), depression consists of symptoms like extreme low mood, sadness, lack of interest and pleasure in almost all activities for at least a period of two weeks. Normally in older adults, mild and situational depressions are frequent rather than severe or major depression (Beekman et al., 1997). Depression is common in all age categories but with successive aging, there is a probability of higher level of depressive symptoms. Mirowsky & Ross (1992) found that prevalence of depression was lowest among the middle aged, higher among younger and older adults, and highest among the oldest. Later studies support the finding that depressive symptoms increase with age without any gender difference (Van't Veer-Tazelaar et al., 2008).

4.1 Risk factors for depression

According to a longitudinal study among 1457 aged residents, disability and declining health are the major risk factors for depression (Kennedy et al., 1990). This finding was supported by other scientific studies (Harlow et al., 1991; Schoevers et al., 2000; Tsuboi et al., 2004). A Meta analysis conducted by Cole & Dendukuri (2003) on research articles published between 1966 and 2001 ascertain major risk factors for depression are bereavement, sleep disturbance, disability, previous depression and female gender in the community resident population.

4.2 Voluntary work and depression

There are some studies which suggested that doing voluntary work may correlate with lower prevalence of depressive symptoms. A psychosocial study performed among volunteer and non-volunteer elderly divulged a significantly higher degree of life satisfaction, fewer symptoms of depression and anxiety among active volunteers than non-volunteers (Hunter & Linn, 1981). These outline a positive effect of voluntary work on depression among active volunteers in later life than non-volunteers. According to an eight year longitudinal study (Li & Ferrano, 2005), disclosed a beneficial effect on depression; through formal voluntary work, a sharp decline in depression was observed among older adults. It highlights voluntarism as a long-term antidote to depressive episodes. In addition, an empirical study conducted by Hong et al. (2009) confirmed that long term social participation/ activities decrease the level of depressive symptoms. Moreover, a community based study shows that higher social activity has an association with a lower risk of late-life depressive symptoms at baseline (Isaac et al., 2009).

According to Musick & Wilson's (2003) eight year follow-up study from the Americans' Changing Lives ascertains a positive effect on depression among 65+ groups. The study further reveals that volunteers engaged more in church related activities than secular activities. It disclosed a significant association between social interactions and reduced depressive symptoms, and at the same time, it reveals the fact that attending organized meetings helped to reduce depressive symptoms. This demonstrates strong evidence that interaction during voluntary work had an influence in reducing the depressive symptoms.

A wide understanding discloses that an increased number of hours in voluntary work has a significant effect on depressive symptoms. Previous longitudinal data from the 1993 and 2000 panels of the Asset and Health Dynamics among the Oldest Old Study (AHEAD) illustrated that more hours of voluntary work engagement reports a higher level of well-being, where well-being is captured by three variables: self-rated health, functional dependency, and depressive symptomatology (Lum & Lightfoot, 2005). Thus it established that increasing hours in voluntary work has a significant effect on decreasing depressive symptoms among older adults.

5.0 ASSESSMENT OF MOOD

Assessing the level of positive mood and depressive symptoms is a crucial task. However, there are various structured tools/ scales to assess the level of depression in older adults, among them, the most popular ones are the Geriatric Depression Scale (GDS) and Center for Epidemiologic Studies Depression Scale (CES-D). The Geriatric Depression Scale is 30 items scale with dichotomous response (yes or no) to the questions. Each item scores one point and the collective score is calculated. It is concluded that, with a total score of 0-9 there is no depression, in-between 10-19 a mild depression and above 20 established a severe depression. While reviewing the Geriatric Depression Scale, it shows 92% sensitivity and 89% specificity and the validity and reliability is cross-checked through clinical practices and researches. At the same time, however, certain limitations confirm non substitution utilization for a diagnostic interview by mental health professionals (Kurlowicz, 1999).

The Center for Epidemiologic Studies Depression Scale (CES-D) is a 20 items scale, applied to assess depressive symptoms in the general population. The total score of the scale ranged from 0-60, with a score of 16-26 considered as mild depression and score of 27 and above represents a major depression (Radloff, L.S., 1977). The CESD-D scale consists of four sub-scales, which represent positive affect, negative affect, somatic and interpersonal affect. However, number of subscale items in the CES-D varies from each other, whereas four items for positive subscale, seven items each for the negative affect and somatic subscales, and two items for the interpersonal subscale. A diverse range of clinical trials and researches disclose a positive outcome on the validity and reliability of CES-D (Fisher, 2009; Radloff, 1977), but certain respondent bias on two items of the CES-D with the responded age, gender and race is found (Yang & Jones, 2007). This suggested that we cannot totally rely on CES-D, but it could be used as an important tool in primary assessment on depression.

The Positive and Negative Affect Schedule (PANAS) is a popular tool used to measure emotional response, which includes ten negative and ten positive adjectives that describe the ways people may feel (Watson, Clark & Tellegen, 1988). In this study, the positive mood was assessed through the CES-D sub-scale of positive affect, where there are four items for positive affect with a total score range from 0–12. The items are “I felt I was just as good as other people, I felt hopeful about the future, I was happy and I enjoyed life.”

6.0 INTERIM SUMMARY

In a nut shell, voluntarism receives worldwide attention because of its beneficial effect on individuals’ especially in older adults. The most common practices of older volunteers are religious, health, social/community service, tutor, mentor and friendly visitor (Morrow-Howell, 2007; Musick & Wilson, 2008). Previous studies have explained a significant positive impact of voluntarism on physical, psychological and social wellbeing (Petriwskyj et al., 2007; Willigen, 2000). In addition, other studies have also established a significant positive association between voluntary activities and positive and depressive mood. Jimenez & Fuerttes (2005) and McIntosh & Danigelis (1995) pointed out that voluntary work activities increases the level of positive mood and at the same time, other studies outlined a decline or decrease in the level of depressive symptoms (Hunter & Linn, 1981; Musick & Wilson’s, 2003; Li & Ferrano, 2005; Lum & Lightfoot, 2005; Windsor et al., 2008; Hong et al., 2009; Isaac et al., 2009). Although, most of studies’ appraisals are observational methodology whereas no randomized control trail or interventional research was founded. Therefore, this raise a question of whether mood directly correlates with voluntary work, whether voluntary work improves mood or people functioning with higher level of positive mood gravitate towards these tasks. Consequently, this present intervention study would explain whether there is any association between voluntary work and positive and depressive mood.

7.0 AIMS AND RESEARCH QUESTIONS

The purpose of this study sought to investigate the mood changes in older volunteers following a three months of intervention in voluntary work. In detail the specific aims were:

1. To define baseline motivation factors which direct older adults towards voluntary work activities?
2. To investigate changes which occurred in positive and depressive mood after a three month intervention period?
3. To identify whether previous voluntary work experience, gender and socio-economic status had any influence on positive and depressive mood?

8.0 PARTICIPANTS AND METHODS

8.1 Study design and participants

This study followed an intervention methodology adopting one-group experimental design. The data used in this study were drawn from Voluntary work, Outdoor activities and Well-being of older people (VOW) project. Volunteers were recently retired people from the age group of 50 and above. They were recruited through newspaper announcements, local media, personal contact and agency visits. All volunteers were educated in their responsibilities and tasks. They had 10 hour training sessions during three days before the voluntary work was started. The training sessions comprised the purpose of the project, principles of voluntary work, social interaction and safety issues. A contract outlining the responsibilities and tasks was signed prior to starting the voluntary work. All ethical issues were considered throughout the study. An approval from the ethical committee of Central Finland for Vow project was obtained.

During the three-day training course, the supervisors evaluated each candidate's availability for the task. In addition, clear description of the future tasks helped the candidates to evaluate whether they themselves considered the current tasks to be good match for their interests and abilities.

Based on interest and availability, a few volunteers received a chance to carry out voluntary work activities with more than one person. Duration of voluntary work intervention was about two to three hours per week. Normal activity ranged from accompanying older people for an outdoor walk and other outdoor activities of the people's interest. Once in a month, a brief support session for volunteers was held, where their experiences and questions were discussed.

8.2 Data acquisition and variables

Depressive symptoms were measured through applying the original form of the Center for Epidemiologic Studies Depression Scale (CES-D) . It is a well established instrument for measuring depressive symptoms in general population surveys reflecting reduced emotional well being (Radloff, 1977). It is a 20 items four-point Likert scale in which items, ranged from 0-60, and a score with 16-26 considered as mild depression and score of 27 or above as major depression (Radloff, 1977). This instrument cannot be utilized as a physician-based diagnosis of depression, but it has shown to be a consistent indicator of elevated levels of depressive symptoms (Wahrendorf, et al., 2008). The CESD-D scale has four sub-scales, which represent positive affect (range 0–12), negative affect (range 0–18), somatic (range 0–18), and interpersonal affect (range 0–4), with item response from 0 “rarely or none of the time” to 3 “most or all of the time or reverse in positive affect items”. The number of items differs by subscale, with four items for positive effect, seven items each for the negative affect and somatic subscales, and two items for interpersonal subscale. The positive mood was measured through the CES-D positive affect subscale. The positive items were combined to one scale with a score measure from 0-12. Increasing score indicates a decrease in positive affect.

Motivation factors of voluntary work were measured with a 37 item multi response question. Participants circled their top priority factors which influence them to partake in voluntary work activity. The encircled items were ranked according to the number of participant positive response. Self reported health was measured through five point scale, where 0- very poor to 5 very good. Participants were asked to rate their educational status (Primary school/ Middle school/ High school/ College& university) and their income status (€ 0-1050/ € 1050-1400/ € 1400 and above).

8.3 Statistical analysis

Descriptive statistics were used to portray the baseline characteristics mean and frequency. To examine pre and post assessment difference, paired t-test was applied with significant level at $p < 0.05$. CES-D scale and its sub scales score were applied with paired t-test to identify the potential difference. To measure change in positive and negative affect (subscales in CES-D score) in groups stratification according gender, education and income, general linear model-repeated measure was employed with significant level at $p < 0.05$. The same statistical analysis was used to analyze previous voluntary experience and expectation of providing and receiving positive mood variables. Multiple response frequency analysis was used to analyze motivation factors variable. All data were analyzed with PASW statistics 19 version /IBM.

9.0 RESULTS

Baseline characteristics according to participants are presented in Table 1. The mean age of the participants was 66.1 years (SD=5.8) with an average of 13 years of educational background (M= 13.6, SD=4.1). Almost an equal distribution in education level was observed. A majority of participants rated their health as very good or good (75%), while others avoided the extreme choices (very poor & poor), which highlight an overall good health condition in the participants.

TABLE 1. Baseline characteristics of participants (N=47)

		N=47
		Mean±SD
Age		66.1 ±5.8
Education (yrs)		13.6 ± 4.1
		n (%)
Female		42 (90)
Marital status		
	Married	29 (62)
	Single ^a	18 (38)
Education level		
	Primary school	15 (32)
	Middle school	10 (21)
	High school	10 (21)
	College/ university	12 (26)
Monthly Income		
	€ 0-1050	9 (19)
	€ 1050-1400	13 (28)
	€ 1400 and above	25 (53)
Self reported health		
	Very good-good	35 (75)
	Moderate	12 (25)

SD= Standard deviation

^a Unmarried, divorced, widowed

Figure 1 point up top fifteen motivation factors influencing older adults in voluntary activities. Nearly, eighty percent of the participants reported their reason for voluntary work to be “meeting new peoples, help others and improve their mood status”. The least frequent response in the figure was “promote social interaction and develop a feeling of belongingness”. Previous voluntary experience, learning new knowledge and social integration were also major motivation factors.

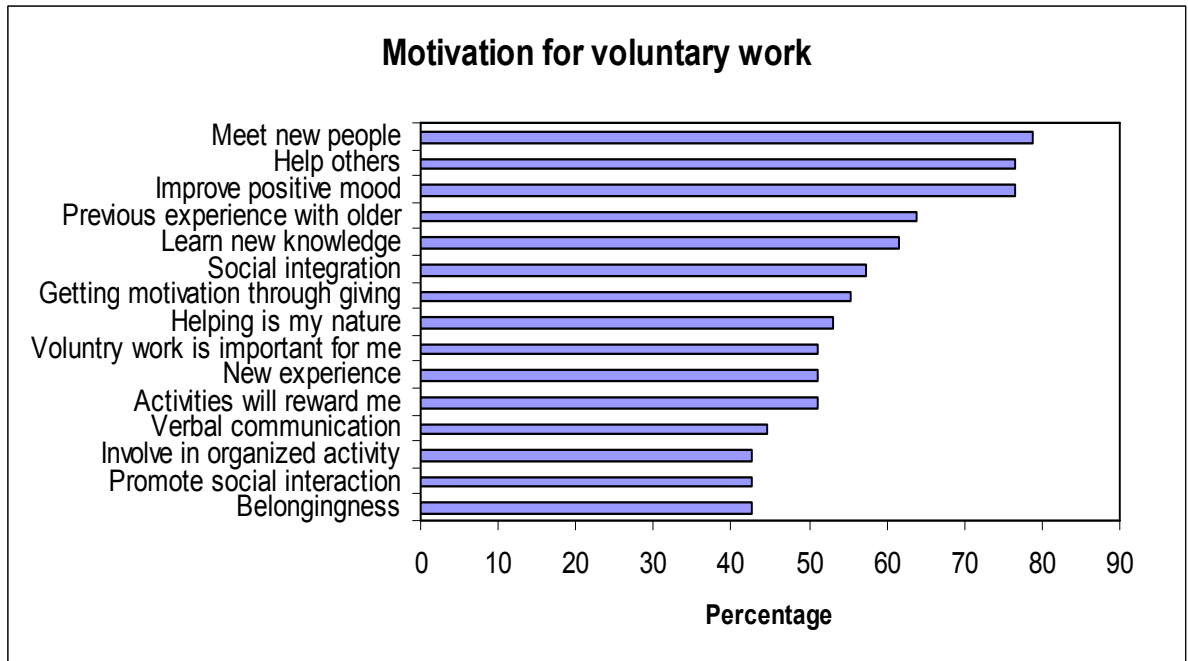


FIGURE 1. Motivation factors influencing participants involvement in voluntary activities (N=47). Multiple response frequency analysis.

Majority of the participants CES-D score ranged from 0-15, however few exceeded the range >16. Before the intervention, five participants had assessed their score >16 and in the post intervention seven participants had their score >16. Only one participant exceeded the score range of > 30 in pre-post assessment, which indicates a major depressive symptom. There was a significant positive correlation $r(46) = 0.64, p < .01$, which symbolized a higher possibility of participants who had low depressive symptomatology in the beginning usually have that in the post-intervention. The plot highlights that eighty five percent of participants had extremely low depressive symptom during pre-post intervention period.

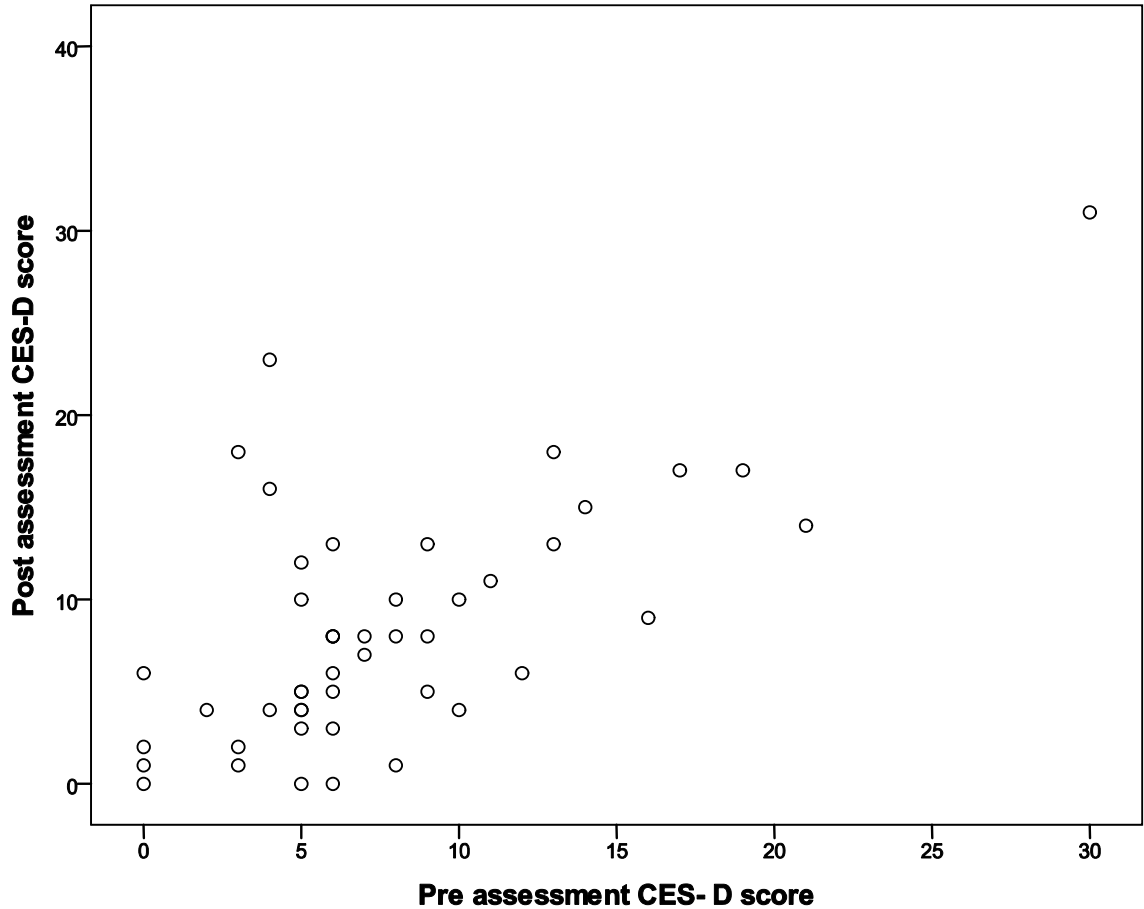


FIGURE 2. Scatter plot of CES-D pre assessment versus post assessment score (N=47)

Table 2 illustrates the mood difference in older volunteers before and after the intervention condition. The differences were assessed through mean comparison of pre-post assessment of CES-D sub and total scales. The result pointed out a non-significant difference; positive affect scale $t(46) = -0.79, p > 0.05$; negative affect $t(46) = -0.44, p > 0.05$; CES-D total score $t(46) = -0.94, p > 0.05$. In addition, the somatic and interpersonal affect also had a non-significant difference in the pre-post assessment $P > 0.05$. A close resemblance of mean and variance in CES-D scales measurement at baseline and post intervention condition was observed.

TABLE 2. Changes in subscales and total CES-D score following a three months voluntary work intervention (n=47). Paired t-test

	Mean	SD	t	p
CES-D subscales				
a. Positive affect ^a				
Pre- assessment	2.89	1.99		
Post- assessment	3.19	2.40	-0.79	0.432
b. Negative affect ^b				
Pre- assessment	1.89	2.37		
Post- assessment	2.02	2.56	-0.44	0.660
c. Somatic ^c				
Pre- assessment	2.46	2.09		
Post- assessment	2.63	2.23	-0.55	0.581
d. Interpersonal ^d				
Pre- assessment	0.44	0.74		
Post- assessment	0.57	0.90	-1.18	0.347
Total CES-D score ^e				
Pre- assessment	7.70	5.81		
Post- assessment	8.43	6.52	-0.94	0.347

a. The positive affect was a four-item scale with sum score ranging from 0-12, with an increasing score indicating a decrease in positive affect.

b. The negative affect was a seven-item scale with sum score ranging from 0-21, with an increasing score indicating an increase in negative affect

c. The somatic affect was a seven-item scale with sum score ranging from 0-21, with an increasing score indicating an increase in somatic affect

d. The interpersonal affect was a two-item scale with sum score ranging from 0-6, with an increasing score indicating increases in interpersonal affect

e. Total CES-D was a twenty-item scale with sum score ranging from 0-60, with an increasing score 16 and above indicates mild depression and major depression

f. SD= Standard deviation

Table 3 demonstrated the prior expectation of participants in providing and receiving positive mood through voluntary work. Participants said “yes” and those who said “no” illustrate a non-significant change in mean and variance. The result shows no difference between group $p>0.05$ and between time $p>0.05$ in the positive affect and a similar non-significant difference was observed with the negative affect during pre-post assessment. Meanwhile, a similar observation was found in previous voluntary work experience with

the positive affect at group $F(1,1) = 2.44$, $p > 0.05$ and time $F(1,1) = 0.915$, $p > 0.05$ and negative affect at group $F(1,1) = 0.485$, $p > 0.05$ and time $F(1,1) = 0.313$, $p > 0.05$. Changes in different variable and positive affect and negative affect are highlighted in table 4. This table reveals a sub-category mean and variance of gender, educational level and income with pre-post assessment score of positive and negative affect. The result shows no significant changes in mean and variance of mood in the sub-category groups. The overall results of all the variables are not statistically significant.

In a nutshell, the result reveals a non-significant change in positive and depressive mood in the pre-post intervention period. At both measurement levels, majority of the participants had a high level of positive mood and low level of depressive symptoms. Key motivation factors which direct older people towards voluntary work are “meeting new peoples, help others and improve their mood status”. Moreover, other alternative objective highlights a non-influence effect of previous voluntary work experiences on mood changes during the pre-post intervention. On the other hand, gender and socio-economic status also highlighted a non-significant change in the pre and post intervention period.

TABLE 3. Change in mood (subscales in CES-D score) following a three month voluntary work intervention with prior expectation of providing and receiving positive mood and influence of previous voluntary experience (N=47). General linear model-repeated measure.

	Positive affect (0-12 Score)						Negative affect (0-21 Score)										
	Pre- assessment		Post- assessment		Group		Time		Pre- assessment		Post- assessment		Group		Time		
	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	F	p	F	p	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	F	p	F	p	
Provide and receive positive mood																	
No (n= 11)	2.90±1.70	3.63±3.17			0.23	0.631	0.39	0.534	1.81±2.22	2.36±2.73			0.04	0.826	0.638	0.429	
Yes (n= 36)	2.88±2.09	3.05±3.17							1.91±2.45	1.91±2.54							
Previous voluntary experience																	
No (n= 25)	3.44 ±1.80	3.40 ±2.46							1.60 ±2.56	1.88 ±2.45							
Yes (n= 22)	2.27 ±2.05	2.95 ±2.35			2.44	0.125	0.91	0.344	2.22 ±2.15	2.18 ±2.73			0.48	0.490	0.313	0.578	

a. The positive affect was a four-item scale with sum score ranging from 0-12, with an increasing score indicating a decrease in positive affect.

b. The negative affect was a seven-item scale with sum score ranging from 0-21, with an increasing score indicating an increase in negative affect

c. SD= Standard deviation

TABLE 4. Change in positive and negative affect (subscales in CES=D score) following a three month voluntary work intervention in groups stratification according gender, education and income (N=47). General linear model-repeated measure.

	Positive affect (0-12 Score)						Negative affect (0-21 Score)					
	Pre- assessment		Post- assessment		Time		Pre- assessment		Post- assessment		Time	
	Mean \pm SD	F	p	Mean \pm SD	F	p	Mean \pm SD	F	p	Mean \pm SD	F	p
Gender												
Male	3.00 \pm 2.54			2.40 \pm 3.28	0.20	0.656	1.40 \pm 2.07			0.40 \pm 0.54		
Female	2.88 \pm 1.98			3.28 \pm 2.30	0.20	0.656	1.95 \pm 2.42			2.21 \pm 2.64	1.22	0.275
Education level												
Primary school	3.53 \pm 1.84			2.93 \pm 1.70			1.80 \pm 2.14			2.26 \pm 2.52		
Middle school	2.20 \pm 1.75			2.60 \pm 2.45			2.20 \pm 2.29			2.50 \pm 2.95		
High school	2.90 \pm 2.37			4.30 \pm 3.12			1.50 \pm 2.12			1.50 \pm 1.64		
College/ university	2.66 \pm 2.01			3.08 \pm 2.40	0.83	0.482	2.08 \pm 3.08	1.24	0.304	1.75 \pm 3.07	0.23	0.875
Income												
€ 0-1050	3.11 \pm 2.20			3.33 \pm 1.87			3.00 \pm 2.54			3.11 \pm 3.17		
€ 1050-1400	2.46 \pm 1.26			3.07 \pm 2.75			1.23 \pm 1.83			1.23 \pm 1.53		
€ 1400 and above	3.04 \pm 2.24			3.20 \pm 2.46	0.21	0.809	1.84 \pm 2.51	0.13	0.876	2.04 \pm 2.70	1.77	0.181

a. The positive affect was a four-item scale with sum score ranging from 0-12, with an increasing score indicating a decrease in positive affect.

b. The negative affect was a seven-item scale with sum score ranging from 0-21, with an increasing score indicating an increase in negative affect

c. SD= Standard deviation

10.0 DISCUSSION

The result show that no significant changes have occurred in the positive or depressive mood during the intervention period. The mood tended to be constant at baseline level during the intervention period. Majority of the participants were at high level of positive mood and low level of depressive symptoms.

Previous cross-sectional studies have pointed out that participating in voluntary work activities increases the level of positive mood among older people (Jimenez & Fuerttes, 2005; McIntosh & Danigelis, 1995) and at the same time, decreases the level of depressive symptoms (Hong et al., 2009; Hunter & Linn, 1981; Isaac et al., 2009). Meanwhile, longitudinal studies have also highlighted that voluntary work activities decreases the level of depressive symptoms (Li & Ferrano, 2005; Lum & Lightfoot, 2005; Musick & Wilson, 2003). However, there were no experimental or intervention studies to support acquired knowledge. Therefore, this could be the first intervention research study to describe the mood variation in a three month voluntary work intervention period.

Meanwhile, generalizing of this result has certain constraints. We considered certain possible explanations for the unchanged mood phenomenon. A simple justification was that all participants had a higher level of positive mood and lower level of depressive symptoms. Therefore, possibilities of mood changes are limited. While justifying, why majority of the participants had a higher level of positive mood? There are evident to suggest that, people with high level of wellbeing are more likely to be volunteers (Thoits & Hewitt 2001). There might be another reason that participants having higher level of depressive symptoms excluded themselves from the study. Another possibility of the unchanged mood phenomenon was an intervention cannot bring changes beyond limits; this represents the 'ceiling effect'. The main cause could be that the participants had a comparatively healthy condition or a relatively short intervention period. For instance, majority of the participants in the present study had a higher level of positive affect and lower level of depressive mood and their reported self-rated health was relatively good.

Therefore, we can conclude that changes are unattainable beyond certain limits. Moreover, the intervention period of the present study was three months with one or two hours per week, despite a previous study explained that spending more than 100 annual hours has a more positive effect than spending less than 100 hours per year (Luoh & Herzog, 2002).

At baseline, CES-D score demonstrated a higher level of positive affect and lower level of depressive symptoms. Only five participants had a score > 16 , which indicating a mild depressive symptom. This supports a fact that people with lower level of depressive symptoms are more likely to gravitate towards voluntary work than people with higher level of depressive symptoms. Previous observational studies also outlined that people with a high level of wellbeing are more likely to be volunteers (Thoits and Hewitt, 2001). The correlation between pre-post assessments was relatively high. Therefore, this predicted a fact that there is a higher chance (around fifty percent) of explaining post assessment score through the pre assessment score. In addition, correlation validates a constant trait, predicting a certain level of unchangeable characteristic in pre-post assessment score.

Baseline characteristics replicated the existing knowledge “women outnumbered men in voluntary work activities (Wahrendorf et al., 2008)”, whereby ninety percent of the present study were female. The participants’ self-reported health was relatively good, which supports the previous facts that older adults, who are in good health condition are more likely to participate in voluntary work (Li & Ferrano, 2005). In addition, an equal distribution in education level and good economic situation was observed in the study: people with better off socio-economic status tend to volunteer more than those of low socio-economic status (Thoits & Hewitt, 2001), however a reversed version was observed in education level. In other words, we could say, people with low education background partake largely in voluntary work. There could be many reasons to explain the scenario. Perhaps this could be explained through another research study.

Previous studies have illustrated that people with prior voluntary experience were more likely to be involved in further voluntary activities (Caro & Bass, 1997; Okun, 1993), but only a slight difference was visible in the present study. However, individual motivation

and opportunity would be the reason for older volunteers to engage in voluntary activities even though they had previous voluntary experience or not. Nevertheless, the mood changes did not differ between experienced and inexperienced participants. The subsequent reason could be the participant's higher level of positive affect and lower level of depressive symptoms. However, if the study population was larger in size and a crucial scale or tool was used to assess the mild mood difference, then the probability of observing mood changes could be apparent.

In the thirty-seven multiple response question, on what makes the participants engage or involve in voluntary activities, the top results reported a similar correlation with the previous studies stating "meet new peoples, help others and improve their mood status" (Brown et al., 2011; Morrow-Howell, 2007, Okun & Schultz, 2003). This also exemplifies relationship with the Clary et al. motives for volunteering like *Values* (concerns for the welfare of others), *Understanding* (opportunity to learn) and *Protective* (to reduce negative feelings, or to escape from one's own problems). There are other motivation factors where forty percent and above participants accepted as their venture "to learn new knowledge, social interaction, new experience, prior experience with older people, involve in an organized activity and belongingness". The least reported items were "extension of my employment and get self-identity" with a fifteen percent response. The overall results are in line with the *activity theory*, whereby, "to maintain a previous lifestyles and activity level, older adults either engaged themselves in their previous activities or find a substitute to compensate" and *continuity theory*, "older adults construct adaptive choices with out disturbing existing internal and external structure and they accomplish it through strategies of their past experiences and their social world".

No experimental or intervention studies related with voluntary work and mood status was found during the database search. Relevant studies published through February 27, 2012, without a start date was searched using the following databases: PubMed, EBSCOhost, Sage Journals, Google Scholar, PsycINFO, Ovid MEDLINE, ISI Web of Knowledge. Depending on the database, search terms included combinations of *voluntary work*; *volunteerism*; *older people*; *adults*; *positive mood*; *happiness*; *depressive symptoms*;

depression; negative symptoms; wellbeing. In addition, the reference lists of identified papers and reviews were searched to identify the potential intervention or experimental studies. The database search results showed that no previous experimental or intervention research study had been conducted on this area. Meantime, another possibility of *publication bias* can not be deniable, whereby the non-significant studies were unpublished or unavailable in electronic form. Therefore, the present study could be among the first intervention study. Even though this was not a randomized control trail, this would be the first one-group experiment design in the field of expertise.

The findings are limited by the necessarily non-random nature of a volunteer sample and one group pre experimental design since the extraneous variables are largely uncontrolled. The sample size was relatively small (N=47) and a non equal distribution in gender (whereas female are quite high in number) was detected, with a wide range of age group. The CES-D subscale for positive affect might not be a potential scale to measure positive effect. Therefore, the weakness of a crude tool might have caused an inability to capture slight changes in positive and depressive mood. The positive mood of the participants was at high level, whereby the changes beyond limits were impossible. However, those wishing to pursue further research would be well advised to consider the limitations of this study, particularly the sample size, distribution of gender, longer intervention period, randomized selection process with different baseline mood status and experimental design with control group.

In conclusion, the present study was noteworthy for many reasons. First, this study appears to be among the first to conduct experimental design relating voluntary work and mood status in older volunteers. Second, this is, to our knowledge, to reveal a non significant change in positive and depressive mood after the intervention, whereas, previous studies have explained a constructive effect on mood. Finally, it highlights different motivation factors influencing older adults in voluntary work activities. There is a requirement for further study to reveal more information on voluntarism and mood changes.

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