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The Effects of Social Support, Substance Abuse and Health Care Supports on Life Satisfaction in Dementia

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Abstract This study aimed to determine predictability of life satisfaction by focusing on social support, substance abuse, socio-demographic factors as well as received health services from medical and traditional centers in the elderly with dementia. The subjects were 1,210 non-institutionalized Malaysian elderly with cognitive problems. In addition, age, ethnicity, sex differences, marital status, educational level, social support, substance abuse and receiving health services were evaluated to predict the risk of falls in samples. Social support was measured by Lubben score. Substance abuse was referred to smoking per day, addiction to alcohol consumption as well as dependency to medications. Health care supports, which were received by individuals included medical and traditional treatments. Life satisfaction was measured by asking in general 'Are you satisfied with your current life'. The multiple logistic regression analysis was used to determine the effects of contributing variables on life satisfaction in respondents. Approximately 83 % of subjects reported that they were satisfied with their current life. The results of multiple regression analysis showed that marital status (OR = 1.98), traditional treatments (OR = 0.43), social support (OR = 2.28) and educational level (OR = 1.79) significantly affected life satisfaction in samples ($p < 0.05$). Furthermore, age, ethnicity, sex differences, substance abuse and medical treatments were not significant predictors of life satisfaction ($p > 0.05$). It was concluded that social support, being married and education increased life satisfaction in subjects but traditional treatments decreased life satisfaction.

Keywords Dementia · Elderly · Life satisfaction · Social support · Substance abuse · Health

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1 Introduction

Dementia is a chronic degenerative disease (Graff et al. 2008), which is on the rise worldwide (Graff et al. 2008; Hoe et al. 2006; Keating and Gaudet 2012). It is one of the three major diseases in the elderly that would increase health care consumption as the disease progresses. It can cause disability, memory decline and behavioural problems (Graff et al. 2008) with additional depletion in socialization, social relations, social activities (Graff et al. 2008; Keating and Gaudet 2012), basic services and material resources (Keating and Gaudet 2012).

Dementia decreases well-being of the patients and their caregivers due to the problems such as elevated pressure on the family relationships and friendships as well as healthcare costs (Graff et al. 2008). So far no cure has been found for dementia, therefore, the key issue in caring for demented patients is to promote well-being and obtaining optimal quality of life (QOL; Ettema et al. 2005).

QOL is a concept defined as provision of expectancies and motivations based on the resources and opportunities in the social environment (Carr and Higginson 2001) but well-being describes one's general functioning and health (Wahrendorf and Siegrist 2010) that is based on objective and subjective dimensions and their relationship (Hombrados-Mendieta et al. 2012; Smith and Clay 2010).

Objective well-being is defined in terms of having basic human needs and rights (Sarvimaki 2006), which involves individual and social factors. These factors are basic, such as health, education, occupation or income level; psychological such as intelligence and personal qualities as well as socio-environmental such as housing, environment, culture, and social climate (Diener 1994). It is measured by external indicators that are observable criteria (Hombrados-Mendieta et al. 2012). Subjective well-being is an essential part of well-being for a person to evaluate his/her life (Diener 2009) that is measured by self-perception (Hombrados-Mendieta et al. 2012) and the feeling of life satisfaction (Diener and Chan 2011). It is referred to one's feelings of life and happiness that is associated with emotions, moods, cognition status and the background of a person (Diener 2009).

The effects of many factors such as economy, education, healthcare, family situation and socio-culture on health (Dolan and Peasgood 2008) and life satisfaction (Borg et al. 2006) suggest the relationship between the subjective and objective aspects (Gartaula et al. 2012). The indicators such as poor health, poverty, disability, loneliness and anxiety could affect life satisfaction in the elderly. For instant, limited income can have a great impact on life satisfaction in older people by influencing their ability to pay for treatments, medicines and the other needs such as glasses (Borg et al. 2006).

Economic, social and cultural parameters can influence one's perception of life satisfaction and individual's well-being (Hombrados-Mendieta et al. 2012). It was established that these factors may facilitate subjective well-being but there is no guarantee (Diener 1994). Diener and Biswas-Diener reported that development and economic growth are not only necessary and sufficient factors to increase subjective well-being in inhabitants of a country (Diener and Biswas-Diener 2002). Several studies in developed nations showed that there was no significant difference in subjective well-being between middle-income and upper income individuals (Diener et al. 1993; Ehrhardt et al. 2000). It was confirmed by a study conducted by Gartaula et al. (2012), who reported that higher income increased the objective well-being among immigrant women but did not increase their subjective well-being. The paradox is further highlighted by Diener et al. (1993) where higher income sometimes decreased well-being.

Overall, well-being and life satisfaction are associated with the environmental, demographic and personality factors (Zullig et al. 2001) such as basic human needs (Delhey et al. 2002; Gough 2004), social factors (Borg et al. 2006; Gough 2004; Huppert and Whittington 2003), culture (Gough 2004; Schimmack et al. 2002), health (Borg et al. 2006; Huppert and Whittington 2003), income (Borg et al. 2006; Ettema et al. 2005; Gasper 2005; Kaufman et al. 2010; Keating and Gaudet 2012), substance abuse (Zullig et al. 2001), educational level, sleep disturbances and spiritual thoughts. Thus, well-being is comprised of objective and subjective well-being and their relationship (Hombrados-Mendieta et al. 2012) in which having meaningful goals, social network and control over the environment enhance subjective well-being (Diener and Biswas-Diener 2002).

Social connections increase QOL in the elderly (Dickens et al. 2011; Keating and Gaudet 2012) by providing continuity, support and potential care (Keating and Gaudet 2012). Social support and social activities preserve cognitive levels (Wang et al. 2002; Zunzunegui et al. 2003), health (Stevens-Ratchford and Cebulak 2004), meaningful activities and emotional well-being (Lang 2000), which promote ageing well and successful ageing. Healthy life-span (Waweru et al. 2004), chronic illnesses, expectations and own perception of ageing process (Bond 1999) influence the personal evaluation of life (Gilman and Huebner 2003; Zullig et al. 2001), which in turn affect the perception of life satisfaction and quality of life (Strawbridge et al. 1996).

1.1 The Current Study

According to the previous studies, life satisfaction is strongly associated with social support and health status. It seems that age related physical, psychological and social changes in the elderly affect their health, QOL (Zullig et al. 2001) and life satisfaction (Kapıkıran 2012). Health status in the elderly states the functional ability to perform activities in daily life (Keating and Gaudet 2012). The diminution in health among older adults is associated with deficiency of basic needs and abilities to generate resources, which consequently causes care and health seeking behaviors (Waweru et al. 2004). It has been reported that the rate of growth of older people and demented elderly is increasing (Keating and Gaudet 2012). Apparently, the characteristics of demented and non demented elderly differ in the behavioural, psychological, biological, economical and social characters, therefore, a broad understanding of the factors affecting life satisfaction is crucial to improve care and well-being in the elderly with dementia. There are many studies about factors influencing life satisfaction and well-being in the elderly but there are limited attempts to study factors influencing life satisfaction among demented older persons. Another aspect to emphasise is that dementia is not curable, therefore, improving life satisfaction and well-being are optimal targets for health care. Hence, this study aimed to investigate the effects of social support, substance abuse as well as medical and traditional treatments on life satisfaction after adjusting for socio-demographic factors in demented elderly.

2 Methods

The project was registered in the National Medical Research Register (Project Code: NMRR-09-443-4148). Approval and permission for conducting the study were received from the Ethical Committee of the Ministry of Health. The project was a national cross sectional survey titled “Determinants of Health Status among Older Malaysians” and carried out in co-operation with Institute for Health Behavioral Research, National Institute

of Health, Ministry of Health and Institute of Gerontology, Universiti Putra Malaysia (UPM).

The present research included 1,210 elderly with dementia who were Malaysian individuals aged 60 years and above residing in non-institutional places. The elderly living in institutions and bedridden were excluded. The samples represented the Malaysian population in terms of age and were collected from Peninsular Malaysia that was divided into four zones of North, South, West and Central. The collection of data by trained interviewers for each person lasted approximately 60 min.

This current study determined the effects of age, ethnicity, marital status, educational level, sex differences, social support, substance abuse as well as medical and traditional treatments on life satisfaction in respondents. The subjects with mini-mental score less than 26 were considered as demented using the mini–mental state examination (MMSE) (Folstein et al. 1975).

Life satisfaction was measured through asking in general 'Are you satisfied with your current life' on a 4-point Likert scale including very satisfactory, satisfactory, not satisfied and not very satisfactory. The respondents who reported not satisfactory and not very satisfactory were placed in a group of not being satisfied with life and those with the answers of satisfactory and very satisfactory were designated as the second group and marked as life satisfaction. The Lubben Social Network Scale 6 (LSNS-6) was utilized for marking social support. The cut point of 12 was used to identify isolated and socialized subjects (Crooks et al. 2008; Lubben and Gironda 2003).

Substance abuse was defined as smoking per day, addiction to alcohol consumption as well as dependency to medications (Simoni-Wastila and Yang 2006). Furthermore, the data were self reported based on dependency to a single substance or a combination of substances. In addition, the data related to medical and traditional treatments were self reported that were collected from respondents.

2.1 Statistical Analysis

The prevalence of life satisfaction was computed for whole samples with regard to their age, ethnicity, marital status, sex differences, educational level, social support, substance abuse as well as medical and traditional health supports in the elderly with dementia. The association of life satisfaction with each variable was examined by bivariate analysis via a series of Chi square tests. The multivariate logistic regression analysis tested the effects of independent contributing factors on life satisfaction in subjects. Odds ratios (OR) with 95 % confidence intervals (95 % CI) were computed. The critical level for rejection of null hypothesis was a p value of 5 %, two-tailed. All analyses were done using the Statistical Package for the IBM Social Sciences (SPSS) software version 20.0 (Chicago, IL, USA).

3 Results

Analysis was run on data collected from 1,210 respondents who were the Malaysian elderly with dementia. The prevalence of life satisfaction was 83.1 % (95 % CI 80.93–85.14) in respondents (Table 1). It was found that the percentage of life satisfaction was 88.4 % in socialized subjects and 77.6 % in isolated subjects. The prevalence of life satisfaction in respondents with substance abuse (83.4 %) was approximately close to that in those without substance abuse (83 %). The findings indicated that the percentage of life satisfaction was 82.8 % in subjects with medical treatments and 85.2 % in those without

Table 1 Prevalence of life satisfaction among 1,210 elderly with Dementia

Character	n	n (%)	95 % CI
Life satisfaction			
Yes	1,006	83.1	80.93–85.14
No	202	16.7	14.7–18.9

medical treatments. In addition, the prevalence of life satisfaction was 70.8 % in respondents with traditional treatments and 84.2 % in those without traditional treatments. Furthermore, the results showed that males had a higher percentage of life satisfaction (86.3 %) compared to females (81.6 %). The prevalence of life satisfaction was found to be as high as 88.4 % in married subjects and 79 % in single subjects. Moreover, the prevalence of life satisfaction was 88.8 % in samples with education and 80.3 % in those without education. Among the samples, 86 % of Malay and 81.1 % of non-Malay ethnicities reported being satisfied with life.

Bivariate analysis established the association of life satisfaction with each variable by Chi square tests. The results showed that ethnicity ($\chi^2 = 5.06$, $p = 0.015$), social support ($\chi^2 = 25.19$, $p \leq 0.001$), educational level ($\chi^2 = 14.41$, $p \leq 0.001$), traditional treatments ($\chi^2 = 10.71$, $p = 0.002$), sex differences ($\chi^2 = 4.51$, $p = 0.020$) and marital status ($\chi^2 = 18.77$, $p \leq 0.001$) significantly affected life satisfaction. Furthermore, the findings indicated that life satisfaction was irrelevant to substance abuse and/or medical treatments ($p > 0.05$) (Table 2).

The results of multiple logistic regression analysis showed that traditional treatments ($p = 0.001$), social support ($p < 0.001$), marital status ($p < 0.001$) and educational level ($p = 0.003$) significantly affected life satisfaction in subjects ($p < 0.01$). Furthermore, the findings indicated that social support (OR = 2.28, 95 % CI 1.65–3.16), educational level (OR = 1.79, 95 % CI 1.23–2.62) and being married (OR = 1.98, 95 % CI 1.38–2.85) significantly increased life satisfaction ($p < 0.01$). It was found that traditional treatments (OR = 0.43, 95 % CI 0.26–0.73) significantly decreased life satisfaction in respondents ($p < 0.01$). The results showed that age, ethnicity, substance abuse, sex differences and medical treatments were not significant predictors of life satisfaction ($p > 0.05$) (Table 3).

4 Discussion

Life satisfaction is an individual's subjective well-being and a representative of QOL (Kaufman et al. 2010). QOL is a personal perception of own position in life about goals, concerns, cultures, expectations, standards, living places and value systems (Netuveli and Blane 2008). In addition, life satisfaction is a multi-dimensional issue that is associated with many factors such as being independent, cognitive functions, physical condition, emotional status, social support and socio-demographic parameters (Onishi et al. 2009).

As dementia is a common disease in the elderly that is without a cure, further investigations are needed to enhance life satisfaction in the patients. This study was designed to identify the effects of age, ethnicity, sex differences, marital status, educational level, social support, substance abuse as well as medical and traditional treatments on life satisfaction among the Malaysian elderly with dementia. The results showed that the effects of marital status, educational level, social support and traditional treatments were statistically significant on life satisfaction among subjects.

Table 2 Prevalence of life satisfaction and associations with socio-demographic factors

	Whole	n	n (%)	95 % CI	χ^2	*p* value*
Social support						
Socialized	631	558	88.4	85.7–90.7	25.19	<0.001
Isolated[a]	577	448	77.6	74.06–80.85		
Substance abuse						
No	507	421	83	79.53–86.06	0.03	0.463
Yes	699	583	83.4	80.46–85.97		
Medical treatments						
No	229	195	85.2	79.97–89.17	0.73	0.226
Yes	977	809	82.8	80.31–85.04		
Traditional treatments						
No	1,117	941	84.2	81.99–86.26	10.71	0.002
Yes	89	63	70.8	60.64–79.22		
Sex differences						
Male	438	378	86.3	82.76–89.21	4.51	0.020
Female	770	628	81.6	78.67–84.14		
Marital status						
Non-married[a]	663	524	79	75.77–81.96	18.77	<0.001
Married	543	480	88.4	85.43–90.83		
Ethnicity						
Malays	549	472	86	82.81–88.63	5.06	0.015
Non-Malays	657	533	81.1	77.96–83.94		
Education						
No	773	621	80.3	77.39–82.99	14.41	<0.001
Yes	430	382	88.8	85.51–91.48		

* Significant at the 0.05 level using the Chi square test

[a] Reference group in multiple logistic regression analysis

Table 3 Prevalence of life satisfaction and associations derived by logistic regression analysis

	B	SE	*p* value*	OR	95 % CI for OR	
					Lower	Upper
Social support	0.826	0.17	<0.001	2.28	1.65	3.16
Substance abuse	−0.068	0.17	0.696	0.94	0.67	1.31
Medical treatments	−0.096	0.22	0.656	0.91	0.60	1.39
Traditional treatments	−0.834	0.26	0.001	0.43	0.26	0.73
Sex differences	0.052	0.20	0.792	1.05	0.72	1.55
Educational level	0.583	0.19	0.003	1.79	1.23	2.62
Marital status	0.69	0.19	<0.001	1.98	1.38	2.85
Ethnicity	−0.254	0.17	0.132	0.78	0.56	1.08
Age	0.022	0.12	0.059	1.02	1.00	1.05

Hosmer–Lemeshow test: $\chi^2(8) = 13.35$, $p = 0.100$

* Significant at the 0.05 level using the logistic regression analysis

The results confirmed the reports documenting the effect of being married on the feeling of life satisfaction (Davies et al. 1998; Diener et al. 2000; Stadler et al. 2012; Troxel et al. 2007). It seems that marriage and a close relationship could improve QOL by covering basic and universal human needs. Furthermore, marriage provides a strong sense of identity due to enhancing self-esteem, self-worth and mastery (Diener et al. 2000). In addition, interpersonal intimacy and emotional support are additional factors to enhance well-being and QOL in a close relationship (Diener et al. 2000; Troxel et al. 2007).

As expected, education increased life satisfaction in subjects. Such effect is possibly due to the positive impact of education on QOL. Education could improve a person's future by providing health, a higher income, wealth abilities, personal relationships as well as career opportunities (Sweetland 1996). Furthermore, the results showed that social support increased life satisfaction. Among the variables, social support was the most important factor to elevate life satisfaction. It has been well documented that life satisfaction is positively associated with social support (Chen 2001; Diener and Seligman 2002; Edwards and Lopez 2006; Yoon and Lee 2007; Young 2006). Social support can increase the capability of coping with problems (Cohen 2004) and adaptation (Malecki and Demaray 2006; Rueger et al. 2010), which promote a positive perspective to life (Edwards and Lopez 2006). In addition, social connections and social activities positively affect health, cognition, lifestyle, behaviours, stress levels, sleep quality, emotional reactions and physiological responses (Cacioppo and Hawkley 2003). Such effects help to live a healthier life, which preserves or improves life satisfaction in subjects. It was found that traditional treatments decreased life satisfaction. Such effect possibly correlates with the limitations of traditional medicine such as charlatanism, imprecise dosage, exaggerated claims of abilities, poor diagnosis as well as inadequate knowledge of anatomy, hygiene and disease transmission. Moreover, safety, efficacy, the quality of traditional treatments as well as conflicts with each other and conventional medicine (Payyappallimana 2010) may reduce life satisfaction. Furthermore, the reduction of life satisfaction among respondents may be explained by differences in health, social environments and spiritual health (Hillenbrand 2006).

The findings showed that age, ethnicity, sex differences, substance abuse and medical treatments were unrelated factors to life satisfaction in subjects. Dissociation found between life satisfaction and variables such as age, ethnicity, sex differences (Zimmerman et al. 2005), substance abuse and medical treatments possibly correlates with moderating factors such as income (Ettema et al. 2005; Keating and Gaudet 2012), marriage, social support, educational level and seeking helps from traditional medicine to treat co-morbidities. The effect of ethnicity on life satisfaction could vary by religious beliefs, lifestyle and cultures (Jean-Louis et al. 2001).

However, life satisfaction is more likely associated with cognitive performance, feelings, actions, belongings, attachments to the others and identity (Ballard et al. 2001). In the absence of a cure for dementia and in light of difficulties to obtain a valid and reliable information on QOL among those patients (Ettema et al. 2005), our main focus is now to elevate primary care as well as to promote life satisfaction among the patients.

5 Conclusions

We concluded that social support, traditional treatments, educational level and marital status were significant contributing factors affecting life satisfaction in subjects. Furthermore, social support, being married and educated significantly increased life satisfaction.

Accordingly, our findings showed that traditional treatments reduced satisfaction in life in subjects. Our results found that age, ethnicity, medical treatments, sex differences and substance abuse had no significant effects on life satisfaction in respondents. As dementia is not curable, life satisfaction becomes an important issue among those patients, therefore, further investigations are needed to identify potential factors affecting QOL and life satisfaction among them.

5.1 Limitations and Implications

There were some limitations in this study. The first problem was difficulty in collecting accurate self reported data about life satisfaction in samples, which was not without bias. Second, was the high prevalence of co-morbidities in subjects. The third limiting factor was the dependency of reported life satisfaction to the mood status of the respondents. Finally, because the study was a cross sectional study, thereby finding effective and non effective factors was difficult. Despite above limitations, this study can serve as a base to address life satisfaction in the elderly with dementia and the surrounding risk factors.

However, this study sheds some lights on factors influencing subjective well-being. The findings showed the effects of some social and personal factors on life satisfaction in the elderly with dementia. This research indicated that the parameters of social support, traditional treatments, educational level and marital status could affect life satisfaction. Eventually, the evaluation of contributing factors to life satisfaction helps to improve well-being, healthy life and productive activities in demented elderly. This knowledge gives an opportunity for health-care professionals and social policy makers to have more suitable intervention plans, which includes rehabilitation, meaningful activities, health-care education, participation in a health care support, preserving or increasing functional ability and reducing the sources of unhappiness.

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