Quality Of Life And Effective Variables In Elderly Women In Central Anatolian Rural Region Sample

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Citation

Abstract

Objective: Aim of the study is to determine the relationship of quality of life with physical activity and effective sociodemographic factors in elder women in rural areas of central Anatolian.

Methodology:This cross-sectional study was carried out in central Anatolian rural region. Sample size of the study was estimated to be 500 subjects. The stratified sampling method was used. All residences falling under the sample were visited one by one and all women aged over 60 years were invited to participate in the study. The questionnaire consisted of sociodemographic characteristics, medical history, World Health Organization Quality of Life Instrument-Older Adults Module and International Physical Activity Scale. Results:The standardized mean quality of life score was 63.92 ± 16.4 (range, 23-120) in the study group. The mean scores of domains were significantly different between each other, with the maximum score was taken in "death-die" domain and minimum score was taken in "social participation" domain. Multivariate linear regression analysis showed that total score on the Quality of Life Instrument increases with increasing education level, income, physical activity and decreases in women not living with their husband and children.

Conclusions: Physical activity of elder women should increase to improve their quality of life.

INTRODUCTION

In aging, the course of life gets difficult due to social isolation, economic constraints and general health problems. Because of longer life-span, more difficult economic conditions and higher possibility of loneliness, the aging is relatively more difficult for women than men.[1]Therefore,aging should be considered as a distinct entity in terms of women's health.[2] The health of an older woman should be examined with considering physiological, psychosocial and demographic features affecting the health status as well as social perspective to gender. Thus, the area of elder women's health will expand and collection and analysis of more relevant data will be warranted.

Although health-related quality of life (HRQOL) is defined as a whole of conscious and emotional processes and subjective perception that is based on the self-assessment of life quality by the individual, it is also an expression of individual well-being and comprises satisfaction statements related to the individual's life concerning various aspects of the life. [3] Thus, because studies of quality of life assess the satisfaction of individuals from their domestic and social lives and from physical and mental health and well-being, these studies should constitute the focus of the studies of elder women's health.[4]A wide variety of life style factors are associated with both aging and quality of life. Physical activity is one of the important factors affecting them, too. Besides ensuring psychological competence, physical activity also improves cardiovascular capacity, coordination and flexibility and decreases the risk of cardiovascular disease.[5]

Despite the numerous studies on health and quality of life in menopausal and postmenopausal women, there is limited number of studies conducted in elder women residing in rural areas. However, like the women from other developed countries, women residing in rural areas of Turkey have many difficulties to access the health services because of the poor quality of health services, arrival difficulties due to economic constraints, lower education level and poverty.[6] Therefore, researches on quality of life of elderly women living in rural areas is needed. The present study was conducted on women aged over 60 and residing in rural areas of central Anatolian with the aim of determining the relationship between quality of life with physical activity and related sociodemographical factors.

METHODOLOGY

Study population

The study was a cross-sectional study conducted on geographic areas with rural characteristics, located in the central Anatolian region of Eskisehir. In addition to its identity as a developed province of Turkey, Eskişehir is also considered to be a region with a developing rural area. The main source of income for this population is farming and livestock breeding. The number of people in the rural area is 271,732.7 Eskişehir city has an area of 1,365,200 ha, of which 657,263 ha consists of fields and forests. The literacy rate in the region is 95%, and the proportion having social security is 93%. The population has access to medical facilities and there is also one medical school (Eskisehir Osmangazi University Medical School, ESOGU) in area. In addition, The Education and Research Regions of The Public Health Department of ESOGU Medical School has five settlements (Sivrihisar, Beylikova, Mahmudiye, Alpu, Kaymaz) in rural Eskişehir.

At the beginning of the study, we determined that the necessary sample size for each research settlements was 246, assuming the use of 95% confidence intervals, the detectable difference in percentage of interest=5%, and that the frequency of poor quality of life is 20%. The stratified sampling technique was used in the present study. Two settlements (Alpu, Beylikova) were selected from Education and Research Regions by randomized sampling method. To start with, researchers made a list of the streets in each targeted settlements. They determined the first house to visit in the street from a random number table, and then reached the targeted number of people for each area by choosing every fifth house. Approval of the local Ethics Committee (certification number: 2011/137) and verbal consent of the participants were obtained. All residences entered into the sample were visited and 500 women aged over 60 years were invited to participate to the study. The pre-designed questionnaire was administered by "face to face interview" technique to all women who accepted to participate in the study. The remaining 26 women did not participate in the interview due to their absence from home at the time of the visit (n=19) or an inability to obtain informed consent (n=7). For individuals who did not participate in the interview, their next door neighbors were selected instead of them.

Survey instruments

The questionnaire form consisted of the following parts; Sociodemographic characteristics(age, marital status, educational level, household income per month, living situation), medical history, (symptoms, clinician-diagnosed diseases and the presence of regular (at least 1 drug daily)

drug usage). The household monthly income was calculated by the total annual income. Participants were asked to complete World Health Organization Quality of Life Scale for older people (WHOQOL-OLD) and The short form of International Physical Activity Questionnaire (IPAQ), respectively. The WHOQOL-OLD used in the present study is an instrument that can be used in the populations over 60 years and it was developed and validated with testing simultaneously in 22 countries throughout the world. Turkey was one of these 22 centers.8 WHOQOL-OLD module consists of 24 Likert-scaled items grouped into six domains. The "sensory abilities" domain assesses sensory functioning and its impact on quality of life, the "autonomy" domain refers to being able to live autonomously, the "past, present, and future Activities" domain describes satisfaction about achievements in life and feelings about the future life, the "social participation" domain assesses participation in activities of daily living in the community, the "death and dying" domain is related to concerns, worries, and fears about death and dying and the "intimacy" domain assesses the ability of having personal and intimate relationships. The score of each item ranges from a minimum value of 1 to a maximum value of 5. Each of the domains has 4 items and thus the overall score can range from 4 to 20, with higher values representing higher quality of life.9 The validity and reliability in Turkish of the scale were performed by Eser et al. in 2010.10

The IPAQ helps to assess the physical activity level in the last 7 days. The form consists of 7 items related to the time spent during sitting, walking, and moderate and vigorous activities.11 The Turkish version of the questionnaire was translated by Ozturk M; the test-retest reliability and criterion validity were reported to be 0.69 and 0.30, respectively.12 For the estimation of energy expenditure in physical activities, the weekly duration of each activity (minute x day) was multiplied by the standard MET (Metabolic Equivalent Task) value. The values of <600 MET-min/week, 600-3000 MET-min/week and >3000 MET-min/week were categorized as physically inactive, and low and sufficient levels of physical activities, respectively.

Statistical analysis

All statistical analyses were performed using the Statistical Package for the Social Sciences for Windows, version 13.0 (SPSS Inc., Chicago, IL, USA). Among statistical tests, t-test and one-way variance analysis were used and frequencies were compared by chi-square test. Logistic regression analysis was used for univariate analysis to determine the variables associated with physical activity. In

this analysis, a multivariate logistic regression model was created from the variables that have a significance level of p<0.10. Linear regression analysis was used to determine the variables associated with domains and overall score of quality of life questionnaire. A multivariate linear regression model was created from the variables that have a significance level of p<0.10. A p-value < 0.05 were considered to be significant.

RESULTS

Study population

The mean age of the 500 women, who accepted to participate in the study, was 68.5±6.6 years (range, 60-96). The sociodemographical characteristics of participants are shown in Table I. Among these women, 34.4% were aged between 60 and 64 years, 28.8% were illiterate, 58.4% were married, 37.2% had an income level less than 320$ per month and 60.6% were living with their husband and child(ren). All of them were housewives.

While 50.2% of the women had at least one clinician-diagnosed chronic disease, 49.4% had to take a drug everyday. Some symptoms observed among the elderly women in the study group were related to joint and muscle 85.0%, heart disease 65.8%, malaise 71.2%, sleeping disorders 69.0%, nervousness 75.8%, anxiety 69.4%, physical and mental fatigue 81.0%, sexual disorders 57.4%, incontinence 65.4% and vaginal dryness 61.8%.

Table 1

Sociodemographic characteristics of the study population

Variables	Value n(%)
Age groups	
60-64	172 (34.4)
65-69	138 (27.6)
70-74	97 (19.4)
75 +	93 (18.6)
Educational level	
Illiterate	144 (28.8)
Primary school	337 (67.4)
Secondary school or more	19 (3.8)
Marital status	
Married	292 (58.4)
Unmarried	2 (0.4)
Widowed	202 (40.4)
Separated	4 (0.8)
Household income	
≤320 $	186 (37.2)
>320 $	314 (62.8)
Living situation	
Alone	107 (21.4)
With a husband and/or child(ren)	303 (60.6)
With children and other/s	90 (18.0)

International Physical Activity Questionnaire (IPAQ)

Among the 500 women, 250 (50%) were physically inactive, 115 (23%) had a low level of physical activity and 135 (27%) had a sufficient level of physical activity. Results of univariate and multivariate analysis that determine the variables associated with the sufficiency of physical activity are shown in Table-II. Univariate analysis revealed that the level of physical activity is low in subjects aged over 70 years, while subjects who have an educational level of secondary school or more, are living with their husband and child(ren), are married, have a monthly income level more than 320 $, and have not any chronic diseases, had a sufficient level of physical activity. In multivariate analysis, the variables associated with the level of physical activity were age, income level and the presence of chronic disease.

Table 2

Independent predictors for the sufficient level of physical activity by univariate and multivariate analysis

Variables	Participants with sufficient level of physical activity N (%)	Univariate analysis OR (95%CI)	Multivariate analysis OR (95%CI)
Age groups			
60-64	60 (34.9)	1	1
65-69	52 (37.7)	1.13 (0.71-1.80)	1.15 (0.70-1.90)
70-74	14 (14.4)	0.32 (0.17-0.60)	0.34 (0.17-0.67)
75+	9 (9.7)	0.20 (0.09-0.43)	0.31 (0.14-0.71)
Educational level			
Illiterate	32 (22.2)	1	1
Primary school	93 (27.6)	1.33 (0.84-2.11)	0.77 (0.45-3.81)
Secondary school or more	10 (52.6)	3.89 (1.46-10.39)	1.31 (0.55-21.80)
Marital status			
Unmarried	30 (14.4)	1	1
Married	105 (36.0)	3.33 (2.11-5.25)	3.47 (0.55-21.80)
Household income			
≤320 $	24 (12.9)	1	1
>320 $	111 (35.4)	3.69 (2.27-6.01)	2.51 (1.41-4.48)
Living situation			
Alone	15 (14.0)	1	1
With a husband and/orchild(ren)	106 (35.0)	3.30 (1.82-5.98)	0.46 (0.07-3.16)
With children and other/s	14 (15.6)	1.13 (0.51-2.49)	0.81 (0.34-1.92)
Chronic disease			
Present	47 (18.7)	1	1
Absent	88 (35.3)	2.37 (1.57-3.57)	2.43 (1.56-3.79)

World Health Organization Quality of Life Scale for older people (WHOQOL-OLD)

The standardized mean quality of life score was 63.92±16.4 (range, 23-120) in the study group. The mean scores, standard deviations (SD) and range values from each domain of the scale were as follows: sensory abilities, 14.45±4.33 (range, 4-20);autonomy, 13.82±3.54 (range, 4-20);past, present and future activities, 13.41±3.27 (range, 4-20);social participation, 13.29± 3.38 (range, 4-20);death and dying, 15.54± 4.78 (range, 4-20); and intimacy, 14.86±3.52 (range, 8-20). The mean scores of the domains differed significantly and the highest mean score was recorded in the "death and dying" domain (F=26.214; p=0.000). When the mean scores from the domains of the quality of life scale were compared, the highest score was recorded in the "death and dying" and the least score was recorded in the "social participation" domains. The mean scores in the sensory abilities and

intimacy domains were not significantly different; however these scores were lower than those in the death and dying domain but higher than those in all other domains. There were no significant differences between the scores from the autonomy, social participation and past, present and future activities domains.

Risk factors affecting the total scores and individual domain scores of quality of life scale (WHOQOL-OLD) were analyzed by a multivariate linear model. However, a multivariate model could not be developed for the domain, death and dying because of not identifying any variable associated with this domain.

The only variable that has a significant effect on the scores in all domains was the level of physical activity. The variables affecting the autonomy and social participation domains were similar. The scores of these domains increased with increasing in educational level and decreased in women who are not living with their husband and child(ren). The other variable that affects the past, present and future activities domain was the income level. The score of this domain increased with the increasing income level.

The age was negatively associated with only sensory abilities. One of the variables positively associated with the sensory abilities was the income level.

As distinct from other domains, the presence of chronic disease was negatively associated with only the intimacy domain.

With regard to total quality of life scores, the education level, income level and being physically active were positively associated and not living with husband or child(ren) was negatively associated with these scores (R=0.439, R2 =0.183, F=19.666; p<0.001).

Table 3

The multiple linear regression results show the variables related to quality of life domains

	Regression coefficien β	Standard Regression coefficient β	β significance	Confidence interval of β (95%CI)
Sensory abilities				
Constant	15.386		0.000	14.063-16.709
Age	-0.885	-0.227	0.000	-1.232- -0.538
Household income level	1.014	0.113	0.017	0.186-1.843
The level of physical activity	1.361	0.140	0.001	0.537-2.184
Autonomy				
Constant	13.597		0.000	12.822-14.372
Educational level	1.921	0.279	0.000	1.331- 2.511
Living situation	-1.167	-0.207	0.000	-1.630- -0.705
The level of physical activity	0.801	0.100	0.020	0.127-1.475
Activities past- present and future				
Constant	12.274		0.000	11.555 – 12.994
Educational level	1.461	0.230	0.000	0.914 – 2.009
Living situation	-0.590	-0.113	0.007	-1.019 - -0.160
Household income level	0.838	0.124	0.007	0.230 –1.445
The level of physical activity	1.289	0.176	0.000	0.663 –1.914
Social participation				
Constant	12.495		0.000	11.765 – 13.226
Educational level	1.137	0.173	0.000	0.582 – 1.693
Living situation	-0.836	-0.155	0.000	-1.272 - -0.400
The level of physical activity	2.483	0.326	0.000	1.849 –3.118
Death and dying				
Intimacy				
Constant	13.468		0.000	12.700-14.236
Educational level	1.902	0.278	0.000	1.318-2.487
Household income level	0.693	0.095	0.036	-0.843 – 0.073
The presence of chronic disease	-1.946	-0.277	0.026	0.045 – 1.341
The level of physical activity	1.234	0.156	0.000	0.566 –1.901
Total				
Constant	79.806		0.000	76.317-83.295
Educational level	7.950	0.253	0.000	5.295- 10.604
Living situation	-3.196	-0.124	0.003	-5.277- -1.114
Household income level	3.538	0.106	0.019	0.595 – 6.482
The level of physical activity	1.543	0.220	0.000	4.977 – 11.042

The model of domain sensory abilities: R=0.456 Standardized R² =0.197 ; F= 18.479; p<0.001,
The model of domain autonomy: R=0.414; Standardized R² =0.161 ; F= 16.976; p<0.001
The model of domain activities past- present and future: R=0.395; Standardized R² =0.146; F=15.235; p<0.001,
The model of domain social participation: R=0.438; Standardized R² =0.182 ; F= 19.508; p<0.001,
The model of domain death and dying: Could not be calculated,
The model of domain intimacy: R=0.418; Standardized R² =0.164; F= 17.366; p<0.001,
The model of total quality of life scores: R=0.439; Standardized R² =0.183 ; F= 19.666; p<0.001.

DISCUSSION

The Turkey National Disease Burden study indicates that health indices of women residing in rural areas are lower as compared to other women groups.13 The present study, therefore, aimed at determining the effects of physical activity level and other related variables on quality of life of older women residing in rural areas.

World Health Organization (WHO) emphasizes the importance of "self-reported of the health status" for older people.14 As it is known, older people usually have multiple chronic diseases, but they can feel completely healthy if their problems affecting the activities of daily living are eliminated. Health-related quality of life is a very sensitive concept for the assessment of the devastating and detrimental effects of chronic diseases in older people, with focusing on the "health and well-being" perception of the individual.10

The most striking result of this study was obtained with the scores of death and dying domain. 'The domain scores in the present study was similar to that of WHOQOL-OLD study in Turkey and Guedos and Mello15,16 observed results in their studys conducted in Brasilia in 2010 and 2011, with the only difference was present in the Death and Dying domain.

WHOQOL-OLD instrument has been tested only in Izmir, one of the most developed cities of Turkey in the validity study. [10]In this study ,the instrument has been applied to women residing in rural areas. Death and Dying domain was the least scored domain in that study. These inconsistent results might be resulted from the espousal of death among women residing in the rural areas of Eskisehir because of fidelity to religious beliefs.

The least mean score of the scale was recorded from the social participation domain, which may be related to the fact that the scale was applied to the women from rural areas. The social participation domain showed a significantly lower mean score compared to the WHOQOL-OLD Turkey (Izmir) study ($p<0.05$). Although the social participation was the highest scored domain in the study of Mello et al.[16], this discrepancy can be attributed the fact that they have conducted their study on people living in a social facility in an urban area. In a Portuguese study, better social communication abilities and higher social participation scores have been found in individuals residing in rural areas.[17] The lower mean score calculated for women from rural areas in social participation domain, which represents lower participation in activities of daily living in community, might be resulted from being more lonely and not living with their husband and child(ren). Likewise, about 1 out of 5 women (21%) was living alone and 1 out of 5 women (18%) was living with their child(ren) or relatives. In addition to, Turkey is a middle-income country that has a high rate of migration from rural to urban areas. The 65 years and over age group comprises 7% of the total urban population, but 9% in rural areas. Compared with urban areas, rural Turkey is characterised by low education levels and high unemployment rates.[7]

The only variable that has a significant effect on the scores in all domains was the level of physical activity. Among the study participants, only 1 out of 4 women (27%) were physically active. Although a desirable level of ;physical activity was not found in the present study, it was higher in the urban study.[18] The physical activity level can be regarded as an important measure to assess the health and quality of life in older people. The present data showed that age, the absence of chronic disease and higher income level are independent variables associated with the physical activity level. However, the physical activity had a significant effect on quality of life independently from multiple variables including age, income level, presence of chronic disease and the lifestyle. Several studies have also reported a positive influence of physical activity on quality of life independently from age, social activity and health status.[19,20]These studies usually show clustering during and immediately after the menopause stage. However, the frequency of chronic diseases further increases in postmenopausal women.

The relationship between physical activity and influence on quality of life is a complicated concept that includes many alternative mechanisms such as cognitive pathway, the effect on body composition, the thermoregulation, and the interaction of biopsychosocial factors with physical activity through the effects on psychological system.[19] Remarkably, the autonomy and social participation domains of quality of life scale, which assess being able to live autonomously and participation in activities of daily living respectively, were affected from the same variables (education level, living alone and physical activity). It may be surprising, because these two domains address identical features.

Past, present and future activities and sensory abilities domains were commonly affected by the income level. These results are in agreement with the Prague study of WHOQOL-OLD multicenter study. It was highlighted in the Madrid Declaration on Aging that the major problem that brings aging is poverty. Likewise, all the participants in the study were housewives[21] and their income was provided by their fathers, husbands, child(ren) or social security institutions. Therefore, for such individuals, a relatively higher income will improve the quality of life.

Interestingly, the age was associated only with sensory abilities domain. In fact, the unpleasant life experiences such as death of or living far from close relatives, and the risk of diseases increase with the increasing age.

It is noteworthy that the presence of a chronic disease was associated with intimacy domain that assesses the ability of having personal and intimate relationships. The presence of depression has been reported as a problem independently associated with multiple domains in data from most centers included to the WHOQOL-OLD multicenter study.[8] In the present study, depression was not evaluated independently but the medical records of the women were reviewed for clinician-diagnosed diseases and the presence of depression was recorded as having a chronic disease. The results obtained from the present study can be attributed to the fact that the number of women with a diagnosis of depression were lower than that of with a physical disease.

The major limitation of the present study is the cross-sectional nature of the data that does not allow the examination of the relationship between health related

quality of life and physical activity.

CONCLUSIONS

The physical activity level of the women residing in rural areas should be increased to improve the quality of life and the monitorization of the physical activity level may have an important role in the follow-up of these individuals. The program of elderly women-specific 'become youthful' such as walking day should be made. Simultaneously older women should be questioned about the level of physical activity in their health care.

In conclusion, we are recommending endeavors for physical activity and quality life; including collecting data, identifying the best practices, promoting community-based programs and expanding programs and informing the public about these subjects education opportunities.

References

1. Cassel CK. Succesful aging. How increased life expectancy and medical advances are changing geriatric care. Geriatrics 2001;56(1):35-39.
2. Agrawal S, Deo J, Verma AK, Kotwal A. Geriatric health: need to make it an essential element of primary health care. Indian J Public Health 2011;55(1):25-29.
3. Thommasen HV, Berkowitz J, Thommasen AT, Michalos AC. Understanding relationships between diabetes mellitus and health-related quality of life in a rural community. Rural and Remote Health5: 441. (Online) 2005. Available from: http://rrh:deakin.edu.au (Accessed 23.02.2012).
4. Guimaraes ACA, Baptista F. ?nfluence of habitual physical activity on the symptoms of climacterum/menopause and the quality of life of middle-aged women. International Journal of Women's Health 2011;3:319-328.
5. Valadares AR, Carvalho ED, Costa-Paiva LH, Morais SS, Pinto-Neto AM. Association between different types of physical activities and quality of life in women aged 60 years over. Rev. Assoc. Med. Bras. 2011;57(4): 450-455.
6. Metinta? S, Ar?kan ?, Kalyoncu C. Menopause Rating Scale as a screening tool in rural Turkey. Rural and Remote Health.10: 1230. (Online) 2010. Available: http://www.rrh.org.au (Accessed 23.02.2012).
7. TURKSTAT. Turkish Statistical Institute. Adress Based Population Registration System 2010. Available at http://www.tuik.gov.tr (Accessed 23.02.2012).
8. Dragomirecka E, Bartonova J, Eisemann M, Kalfoss M, Kilian R, Martiny K et al. Demographic and Psychosocial Correlates of Quality of Life in the Elderly from a Cross-Cultural Perspective. Clinical Psychology and Psychotherapy, 2008;15:193–204.
9. World Health Organization Quality of Life Group. Final Manuel European Office, Copenhagen 2006.
10. Eser S, Saatli G, Eser E, Baydur H, Fidaner C.The Reliability and Validity of the Turkish Version of the World Health Organization Quality of Life Instrument-Older Adults Module (WHOQOL-Old). Türk Psikiyatri Dergisi 2010;21(1):37-48.
11. The International Physical Activity Questionnaire. (Online) 2005. Available at http://www.ipaq.ki.se/ (Accessed 23.02.2012).
12. Öztürk M, Savc? S, Ar?kan H, ?nal ?nce D, Tokgözo?lu L. Physical activity levels of university students. Arch Turk Soc Cardiol 2006; 34(3):166-172.
13. Ministry of Health, Turkey. Health at a Glance Turkey. Ankara: Refik Saydam Hygiene Center, School of Public Health, Ministry of Health. 2008.
14. WHO. Healthy ageing is vital for development. (Online)2002. Available at http://www.who.int/mediacentre/news/releases/release24/en/index.html (Accessed 23.02.2012).
15. Guedes DP, Hatmann AC, Martini FN, Borges MB, Bernardelli R. 2011. Quality of Life and Physical Activity in a Sample of Brazilian Older Adults. Journal of Aging and Health 2011;20(10):1-15.
16. Mello DB, Verdini MP, Dantas EM, Giani TS, Ferreira MA, Emygdio RF et al. ?mpact of obes?ty on qual?ty of l?fe in the elderly. Medicina Sportiva 2010; 14(2) : 63-66.
17. Poul C, Fonseca AC, Martin ?. Psychosocial profile of rural and urban elders in Portugal. European psychologist Y 2003;8(3):160-167.
18. Metinta? S, Ar?kan ?, Kalyoncu C. Awareness of hypertension and other cardiovascular risk factors in rural and urban areas in Turkey. Transactions of the Royal Society of Tropical Medicine and Hygiene 2009;103:812-818.
19. Elavsky S. Physical Activity, Menopause, and Quality of Life: Rhe Role of Affect and Self-Worth Across Time. Menopause 2009;16(2):265-271.
20. Conroy MB, Simkin-Silverman LR, Pettee KK, Hess R, Kuller LH, Kriska AM. Lapses and Psychosocial Factors Related to Physical Activity in Early Postmenopause. Medicine & Science in Sports & Exercise 2007;39(10):1858-1866.
21. Un?ted Nat?ons, Department of Econom?c & Soc?al Affa?rs D?v?s?on for Soc?al Pol?cy & Development. The Madr?d Internat?onal Plan Of Act?on On Age?ng, Gu?d?ng Framework And Toolk?t For Pract?t?oners & Pol?cy Makers, 2008.

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