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ORIGINAL INVESTIGATION

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Relationships between work-status and leisure lifestyle at the age of 60 years old

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Abstract The tendency to leave work before the formal pension age is reached has increased in most OECD-countries. The societal economical consequences of these circumstances are worrying and knowledge about the mechanisms behind this trend is urgent. Previous research has focused on the role of pension rules, work environments, health and education. In this study, it was investigated if there are differences in personality and in leisure lifestyle between individuals who have retired at the age of 60 and individuals who still work at the same age. The effects of health, work satisfaction, education level and household economy were taken into account. The sample was drawn from the SNAC-Blekinge database and the participants were 184 randomly selected individuals aged 60 years. The variables were measured using standardised questionnaire data. The results show that early retirement due to health problems was negatively related to visiting museums and art expositions and positively related to number of symptoms of disease. Retirement due to other reasons than disability was negatively related to reading books and to number of symptoms. The study suggests there is a possible stress-reducing effect of participation in cultural/intellectual activities. This effect may strengthen the ability and motivation to continue working at the age of 60 years old.

Keywords Work · Leisure activities · Personality · Retirement

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Introduction

In Sweden the formal pension-age is 65 years old. There is, however, no evidence that the ability to work is reduced at that age. On the contrary, people at 65 are more functional vital and socially active today than 20 years ago and the work-capacity is in many ways maintained. After reviewing 22 years published studies, McEvoy and Cascio (1989) found no general relationship between age and performance, with the exception that very young employees increase their performance as they get older. Thus, changes due to age are sometimes in a positive direction. Knowledge based on long experience within a professional area results in effective problem solving. Older people often have a wealth of concrete experiences from their working-life and are likely to be better than younger co-workers at focusing on relevant aspects of work-related problems. They are good at discerning structures and understanding relationships and, often, they make good use of meta-cognitive abilities; that is, they use their knowledge about their own possibilities strategically and this can compensate for shortcomings in the ability to learn from new information and the speed of thought processes (Salthouse 1997; Warr 2000). Baltes and Baltes (1990) have labelled this ability "selective optimisation" and according to their view, this is a key function in successful aging.

In spite of this, the tendency to retire from work before the age of 65 has increased. In addition, today we enter the labour market later in life and live longer than in earlier days. The societal economical consequences of these circumstances are worrying.

The growing tendency to retire early is a problem that most OECD-countries have in common (Reday-Mulvey 1997). To understand the mechanisms behind the problem, diverse perspectives must be considered. Höög and Stattin (1997) illustrated the problem by labelling the factors involved as *push-*, *pull- and individual factors*. *Push factors* are economic, structural, technical and

labour-market changes, increasing unemployment levels, migration, bad work-environments and demographic changes. These factors may force people to retire. *Pull factors* refer to generous pension-schemes, implementation of rules that gives opportunities to retire under economically acceptable circumstances and the way these rules are used. These factors may give people opportunities to retire and by that balance their life between work and private interests without getting economical or social problems. *Individual factors*, finally, are age, gender, occupational injuries, social background, education and occupation. It could also be individual interests that are perceived as more important than work and the economical resources to actualise these interests. Kilbom et al. (1994) have investigated the role of these three types of factors in the inclination to leave work before the formal pension age. They found that work disability was related to monotonous work-environments with chemical exposure and hard physical demands and to stressful environments. It is also of interest how disability pensions are related to the diagnosis of disability. During the time period of 1999–2002, the most common reason to be eligible for the disability pension was musculoskeletal problems (38.4%), followed by mental health problems (26%) and cardiovascular problems (8.5%) (Skogman Thoursie et al. 2004). Solem (1997) found that work disability was related to a low professional training. As an example of pull-factors, a study by Lund et al. (2001), indicated that having a spouse could be a pull-factor from work in later career years among blue collar, male workers.

Even if many people leave work-life for the reasons mentioned above, there are always people who, in spite of negative circumstances, continue working as well as people who prefer to leave work even if they are not pushed to retire and have good health. In order to understand the mechanisms behind this variation in behaviour more fully, further individual factors need to be taken into account. Previous research has shown that personality and leisure lifestyle are related to a variety of health related behaviours (Costa and McCrae 1985; Peterson et al. 1988; Ranchor and Sandeman 1990; Fitzpatrick et al. 2001; Herch 1990; Patterson and Carpenter 1994; Pondé 2000).

The aim of this study is to investigate the role of these individual factors in early retirement, controlling for push and pull factors.

The research question of this study is:

Are there, at the age of 60, differences between individuals who are still working and,

- Individuals who have left work due to disability
- Individuals who have left work due to other reasons than disability.

In personality and participation in leisure activities, when the effects of low work satisfaction, management of the household economy, educational level and health are controlled for?

Methods

Sample

The sample was drawn from the SNAC-Blekinge database. The Swedish National Study on Aging and Care (SNAC) is a national, longitudinal, multi-disciplinary study that involves four research-centres (Lagergren et al. 2004). In a suburban community with 61,000 inhabitants in Blekinge, a rural part of Sweden which constitutes one of the four research-centres, 1,402 men and women were medically examined, participated in cognitive tests and answered survey questions in a baseline data-collection. The participants were randomly selected from the age cohorts 60, 66, 72, 78. In the age-cohorts 81, 84, 87, 90, 93, 96, 99, 102 years all inhabitants of the population were selected. The data-collection was carried out in 2001–2003.

In this study, cross-sectional data from the 60 years old participants were included. Initially 256 individuals were contacted. Sixty-one (23.8%) declined to participate, 4 (1.6%) could not participate due to illness and 7 (2.7%) were excluded due to incomplete answers. Totally, the response rate was 72% (n = 184). The participants were divided into three groups based on their work-status: the ''a-group'' consisted of those who still worked (n = 122), the ''b-group'' was those who had left work due to health problems (n = 29) and the ''c-group'' was those who had left work for other reasons than disability (n = 33).

Measures

Leisure activities were measured by survey items, asking whether the respondents had participated in social, physical and cultural/intellectual activities during the last year. Social activity items were for example visiting restaurants and pubs, participation in private parties and visiting relatives. Physical activity items were for example walking in the nature, gardening and fishing/hunting. Cultural/intellectual activity items were for example visiting museums or art expositions, playing an instrument or reading books. Leisure activities that were assumed to be representative for the leisure habits of the sample were chosen.

Symptoms were measured by using a symptom checklist, consisting of 30 questions about symptoms of illness during the last 3 months, previously used by Tibblin et al. (1993) and Rennemark and Hagberg (1999).

Personality was measured by a Swedish version of the NEO–FFI questionnaire (Costa and McCrae 1989). The questionnaire consists of 60 items that describe personality traits and are answered on a Likert-scale with alternatives from 1 (do not agree at all) to 5 (agree completely). The higher the total score on a specific

personality-factor, the more likely it is that the individual behaves in line with the description of that factor.

Management of household Economy was measured by a survey question, as to whether it had happened, in the last year, that the respondents had difficulties in managing their everyday budget.

Work satisfaction was measured by a survey question, as to what degree the respondents were satisfied with their work.

Education was measured by a question about educational level. Based on the question and in order to get a sufficient number of individuals in each group, the respondents were divided into two groups: compulsory school ($n = 121$), which includes 7 years, or higher education ($n = 63$).

Classification of *illness diagnoses* was made using medical protocols.

Analyses

Differences between the groups in each leisure activity were tested by the χ^2-test. Variation in personality and total number of leisure activities and symptoms between the 3 groups (the a-group, the b-group and the c-group) were tested by the Kruskal-Wallis test. When such variance was found, the Mann Whitney test was used to investigate differences between each retired group one by one and the working group. In the next step, all the variables that were assumed to be related to work-status (i.e. leisure activities, symptoms of illness, work satisfaction, introversion, educational level and economical situation) were included as predictor variables in two hierarchical logistic regression analyses. In the first analysis, the dependent variable was work disability versus being still working. In the second analysis, the dependent variable was retirement for other reasons than disability versus being still working. In the initial hierarchical step of the logistic regression analyses, introversion and the control variables were entered. In the second hierarchical step, the leisure activity variables that were bivariately related to work status were entered. In the following steps, insignificant leisure activity variables were excluded one by one until only the significantly or borderline significantly related variables remained (the inclusion criteria for leisure activity variables were $P = 0.07$).

Results

Bivariate relationships

Leisure activities

The frequency of participation in leisure activities varied significantly between the three groups as measured with the Kruskal-Wallis test ($\chi^2 = 17.7$ $P < 0.001$) (see Table 1). Further analyses, using the Mann Whitney test, showed that it was the b-group that participated less often in leisure activities than the other two groups ($P < 0.001$).

Personality

The variation in personality between the three groups was investigated using the Kruskal-Wallis test, with the result that extraversion/introversion varied significantly ($\chi^2 = 7.3$, $P < 0.05$) (see Table 1). The Mann Whitney test revealed that the b-group differed from the other two groups by being more introverted ($P < 0.01$). No other personality differences were found.

Symptoms

Also, the report of symptoms varied between the groups ($\chi^2 = 14.9$, $P < 0.01$) (see Table 1) and just as in the cases of leisure activities and extraversion, only the b-group were different. They reported more symptoms than the other two groups ($P < 0.001$).

Background variables

There were no differences between the groups in regard to management of the household economy, work satisfaction, nor educational level. In order to reveal objective information about those who had left work due to health problems, the distribution of medical diagnoses was investigated. In the b-group, 38% suffered from a cardiovascular disease, 31% had high blood pressure, 31% had problems with muscles, skeleton or joints and 21% suffered from depression.

Possible interrelationships between the predictor variables were investigated, giving that intellectual/

Table 1 Mean values, standard deviations and differences between the a-group, the b-group and the c-group in leisure activities, extraversion and symptoms

	a-Group ($n = 122$) 1		b-Group ($n = 29$) 2		c-Group ($n = 33$) 3		Kruskal-Wallis test χ^2
	M	SD	M	SD	M	SD	
Number of leisure activities	17.4	4.2	13.5	4.2	16.2	3.7	17.7***
Extraversion/introversion	30.5	5.7	26.7	5.5	29.5	7.1	7.3*
Number of symptoms	6.4	4.9	10.3	6.7	4.6	4.6	14.9**

*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

cultural activities were related to education-level ($\chi^2 = 10.28$, $P < 0.01$). Higher education was connected to higher levels of these activities.

Specification of leisure activities

In order to investigate how the different leisure activities were distributed in the three groups, frequencies were investigated and differences in each leisure activity between the a-group and the two other groups were tested by χ^2-tests. When the a-group was compared to the b-group, participation in the following activities differed significantly: movie, theatre and concert visits, museum and art exposition visits, restaurant and pub visits, participation in study-circles, participation in voluntary organisations, reading books and using the web (see Fig. 1). In all these cases, the a-group was more active than the b-group.

In the same way, the a-group was compared to the c-group. The result showed that the a-group more often read books. No other differences between these groups were found (see Fig. 2).

Multivariate relationships

The variables that were assumed to be related to work-status (i.e. leisure activities, symptoms of illness, work satisfaction, introversion, educational level and economical situation) were included as predictor variables in two Hierarchical logistic regression analyses using the backward stepwise function in the second hierarchical step. In the first analysis, the dependent variable was work disability. In the second analysis, the dependent variable was retirement for other reasons than disability (see Table 2).

As can be seen in Table 2, two variables were significantly related to work-disability when interrelationships between the predictor variables were taken into account: the more symptoms and the less cultural leisure activities, (visiting museums and art expositions), the stronger was the probability to be retired due to work disability. The table also shows that two variables predicted retirement for other reasons than disability, namely less symptoms and intellectual activities (reading books).

Discussion

The main finding of the present study was the strong relationship between participation in cultural/intellectual leisure activities and work-status. As far as we know, this relationship has not been studied earlier, although connections have been found between leisure activities and health-related variables such as reduced stress (Thune et al. 1998; Fitzpatrick et al. 2001), life satisfaction (Herch 1990; Patterson and Carpenter 1994), and mental health

	b-group	a-group
movies/ theater***	39	76
sport event	32	53
museum/art-expo***	21	66
restaurant/pub visits**	79	96
bingo	18	27
dance	32	46
church visit	39	47
study-circle**	14	44
voluntary organisation*	21	44
club membership	29	45
writing letter to press	7	12
demonstration	4	11
visiting relatives	39	47
private party	75	86
gardening	71	84
walking in the nature	93	90
picking muchrooms	57	72
hunting/fishing	18	25
needlework	39	38
painting/drawing	11	12
repairing in the home	57	76
repairing the car	57	76
reading newspaper	96	99
reading periodicals	79	90
reading books**	54	80
watching tv	96	98
playing cards etc.	39	36
playing an instrument	14	16
listening to music	89	95
using the web*	29	54

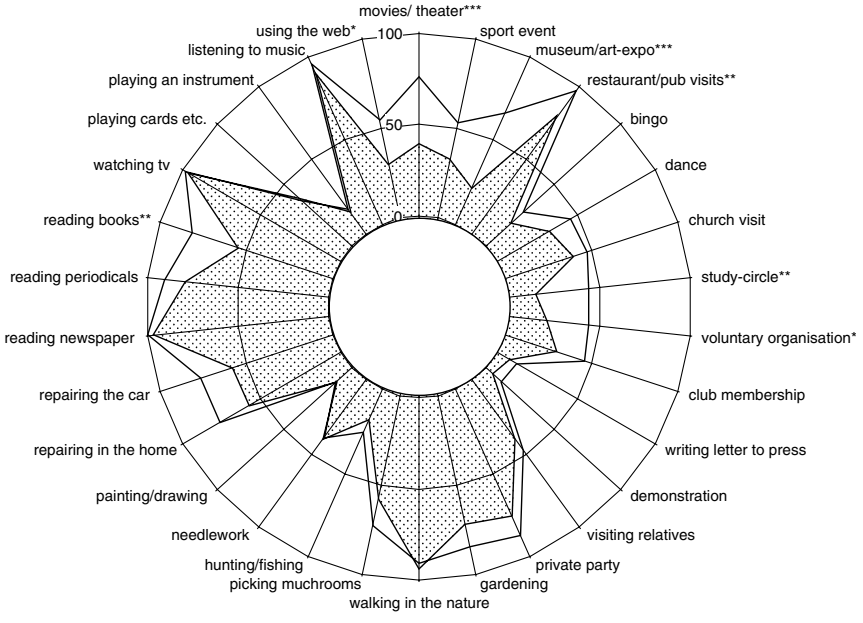

Fig. 1 Differences in percentages between the a-group (*not shadowed*) and the b-group (*shadowed*) in leisure activities. Note: *$P < 0.05$, **$P < 0.01$, **$P < 0.001$

	c-group	a-group
movies/ theater	67	76
sport event	33	53
museum/art-expo	64	66
restaurant/pub visits	93	96
bingo	24	27
dance	36	46
church visit	42	47
study-circle	39	44
voluntary organisation	39	44
club membership	36	43
writing letter to press	9	12
demonstration	0	11
visiting relatives	33	32
private party	88	86
gardening	97	84
walking in the nature	94	90
picking muchrooms	70	72
hunting/fishing	36	25
needlework	36	38
painting/drawing	9	12
repairing in the home	67	76
repairing the car	42	39
reading newspaper	94	99
reading periodicals	85	99
reading books*	61	80
watching tv	94	98
playing cards etc.	27	36
playing an instrument	9	16
listening to music	91	95
using the web	45	54

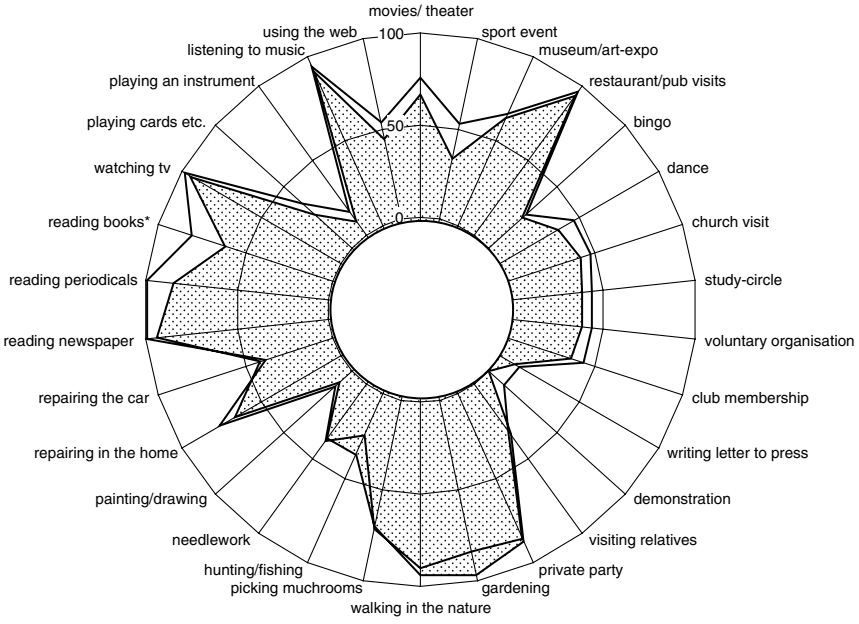

Fig. 2 Differences in percentages between the a-group (*shadowed*) and the c-group (*not shadowed*) in leisure activities. Note: $*P < 0.05$, $**P < 0.01$, $**P < 0.001$

(Pondé 2000). In this study, specifically low probability of visiting museums and art expositions were related to work disability at the age of 60, although low probability of participating in study circles and reading books were borderline significant. In line with this, Wikstrom et al. (1993) found that looking at a work of art decreased the systolic blood-pressure in elderly women and Konlaan (2001) found that the visiting museums and art expositions even co-varied with survival. The still working group was more often reading books than those who had retired due to other reasons than disability. One can only speculate about the mechanisms behind these relationships, but since biological processes obviously are involved, psycho-neuroimmunological processes as explained by McEwen and Stellar (1993) can be assumed to be a part of the explanation. Participating in cultural/intellectual activities may be stress reducing and thereby it could decrease the total allostatic load. That is, it could decrease physiological responses to long term stress such as changes in blood-pressure, metabolism, and

Table 2 Backward stepwise logistic regression analyses for variables predicting work disability ($n = 29$) and having left work for other reason than disability ($n = 33$), final step

Predictor-variables	(The a-group vs. the b-group) Prediction of work disability				(The a-group vs. the c-group) Prediction of having left work for other reasons than disability			
	Odds-ratio	Wald *T*-ratio	*P*-value	95% CI	Odds-ratio	Wald *T*-ratio	*P*-value	95% CI
Introversion	1.08	2.93	0.08	0.98–1.19	1.04	1.50	0.22	0.97–1.12
Low work satisfaction	1.61	3.34	0.06	0.96–2.68	1.30	1.27	0.26	0.82–2.07
Problems with household economy	1.27	0.11	0.74	0.29–5.49	2.36	1.98	0.15	0.71–7.84
Low education	1.55	0.62	0.42	0.52–4.66	1.04	0.01	0.91	0.43–2.53
Number of symptoms	1.09	3.75	0.05	1.00–1.19	0.88	5.55	0.02	0.80–0.98
Low probability of visiting museums and art expositions	3.34	4.32	0.03	1.07–10.42				
Low probability of participation in study-circles	3.81	3.33	0.06	0.90–16.06				
Low probability of reading books	2.75	3.20	0.07	0.99–8.32	2.46	4.02	0.04	1.02–5.97
	Model χ^2 39.31($df=8$) $p < 0.001$				Model χ^2 12.74($df=6$) $P < 0.05$			

The b-group reported more symptoms than the a-group while the c-group reported fewer symptoms than the a-group

cholesterol levels (Sapolsky et al. 1987). Due to the cross-sectional design of the present study, however, the result also may be an effect of selection bias. That is, individuals who continue working could be more inclined to participate in cultural/intellectual activities. Based on these interpretations, we suggest a reciprocal causal relationship between work-status and leisure lifestyle. The group who had retired due to other reasons than disability had fewer symptoms than those who still worked. This result could be understood in terms of positive effects of retirement, such as more time to rest and more opportunities to increase their quality of life. On the other hand, like mentioned before, selection bias may be involved.

No background variable (work satisfaction, education level, gender, or managing the household economy) was related to the ability to work at the age of 60, however, low work satisfaction was very close to be significantly related to work disability. A significant relationship between work-status and work satisfaction was expected, as previous studies have found that early retirement is related to working conditions, which can be assumed to be related to work satisfaction. Lund and Villadsen (2004) have found that high conflict in work and uncomfortable work positions increases the risk for early retirement and also monotonous work-environments, with exposure to chemicals, hard physical demands and stressful environments, have been shown to increase the risk for early retirement (Kilbom et al. 1994).

Previous studies indicate that low education and low paid work is related to early exit from working-life. Solem (1997) found that a low professional training was related to an early exit from work and Lund and Villadsen (2004) have found a relationship between low socioeconomic status, as well as low skill discretion and early retirement. Thus, the power of the measurements of education and economy in the present study could be questioned. Especially since each variable was estimated by only one question and the education question was dichotomised. Even though we found no relationship between education and work-status, it could be assumed that there are education differences within each of the two categories, which are related to both work status and cultural activities. If this is the case, the relationships between work status and cultural activities could be an effect of an underlying relationship between education and cultural activity, which is lost in this study due to the dichotomised measure of education level. It is, however, not probable that there are differences within the group with only compulsory school or less ($n = 121$), so the possible difference is probably to be found within the higher educated group ($n = 63$).

A causal relationship between cultural activities and health has been suggested and experimental studies have supported that position (Johansson et al. 2001; Wikstrom et al. 1993). It is, however, not possible to conclude there is a causal direction in the relationship between work-status and leisure activities from the results of the present study.

The participants of this study represent individuals living in suburban and rural areas. The main finding, that participation in cultural/intellectual activities is related to being still working at the age of 60 is, as has been shown above, supported by previous research. This indicates that the variation in the time for retirement cannot be understood by looking at work-environmental aspects and pension rules only. Individual's leisure lifestyle also needs to be studied. In order to investigate if a decrease in the total allostatic load due to leisure lifestyle may explain differences in work status, future research should replicate this analysis in a longitudinal design, including allostatic load parameters.

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