

Effect of retirement on health and work ability among municipal employees

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TUOMI K, JÄRVINEN E, ESKELINEN L, ILMARINEN J, KLOCKARS M. Effect of retirement on health and work ability among municipal employees. *Scand J Work Environ Health* 1991;17(suppl 1): 75-81. A questionnaire was sent to 6257 active employees, mean age 50.5 years, in 1981, and again in 1985, when 4255 of the workers were still actively working, 402 had retired because of age, and 468 had retired for medical reasons. After retirement, regardless of reason or previous work content, the prevalence of musculoskeletal diseases changed little among the women but increased markedly among the men retired from mental work. Among the men retired from mental work because of age, the prevalence of cardiovascular diseases increased after retirement. After disability pensioning the prevalence of cardiovascular diseases increased for both the men and the women. The prevalence of poor work ability increased in all the work categories irrespective of the type of retirement. Work ability did not improve after old-age pensioning, but health status was improved among the men and women in some occupational groups. Therefore light, part-time work should not be excluded for retired people.

Key words: cardiovascular disease, disability pension, mental disorder, musculoskeletal disease, old-age pension, work content.

The question of whether, and to what extent, retirement can be harmful or beneficial to the health of a retiree has been repeatedly addressed (1-4). Investigations that have described retirement-related changes in health status have usually included cross-sectional studies of epidemiologic data (5), but it has been difficult to control for selection effects (4). Furthermore the outcome of retirement probably has differential effects depending on disability pension legislation for the elderly, social security, timing of retirement, preretirement occupation, and type of retirement (ie, retirement due to age or premature medical retirement). Considerable differences also occur between men and women. Probably because of all these factors, there are reports indicating either a deterioration of health or a beneficial effect on health after retirement, but there are also studies that show no marked changes in health in association with retirement (6).

We have previously shown that health, as well as work ability, among 44- to 58-year-old employees is strongly work-related. The presence of psychological stress, high physical demands at work, poor physical work environment, and the presence of disease all influence work ability (7, 8). We have also shown the importance of individual factors as predictors of work disability (9).

The present study was undertaken to evaluate the effect of retirement on a cohort of 6257 municipal employees during a follow-up period (1981-1985). During this time 13.9 % of the workers retired due to

age or medical disability. Using a questionnaire, we studied the change in the prevalence of musculoskeletal and cardiovascular diseases, the prevalence of certain complaints, and the work ability of these employees in 1981 and 1985.

Subjects and methods

A questionnaire was sent to 6257 active employees (mean age 50.5 years) in 1981. These employees answered a second questionnaire in 1985, at which time 4255 workers (mean age 54.1 years) were still actively working, 402 (mean age 59.2 years) had retired due to age, and 468 (mean age 57.9 years) had retired prematurely because of a medical disability (disability pension).

The number and gender of the employees belonging to the different retirement and work content classes are shown in table 1. Because the age differences between the work content groups were relatively small, the comparisons were done without age standardization. The structure of the questionnaire has been described in another report (8), and the response rate varied from 70 to 90 %. The classification of work content of the different occupations was performed according to the AET (Das Arbeitswissenschaftliche Erhebungsverfahren zur Tätigkeitsanalyse) method and is described in another report (10).

The definition of health and work ability and the grouping of occupations into predominantly physical, mixed physical and mental, and predominantly mental work have also been described in detail in another report (8). For the cohort of retired workers, the work ability was measured with a simplified index derived

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Table 1. Number of men and women and their mean ages according to work content and employment status.

	Physical work		Mixed physical and mental work		Mental work	
	N	Mean age (years)	N	Mean age (years)	N	Mean age (years)
Men						
Active, 1981	1361	51	711	50	725	51
Active, 1985	803	54	432	53	564	54
Retired due to age, 1985	56	59	66	58	19	59
On disability pension, 1985	145	57	62	56	47	58
Women						
Active, 1981	1288	51	1196	50	976	51
Active, 1985	849	54	853	53	754	54
Retired due to age, 1985	69	60	145	59	47	60
On disability pension, 1985	120	57	56	56	38	57

as the sum of the following four variables: (i) subjective estimation of the present work ability compared with the best performance during a lifetime (scale 1–10), (ii) the number of diagnosed diseases (scale 1–7), (iii) present physical condition compared with that of others of own age (scale 1–5), and (iv) psychological resources (eg, enjoying daily tasks, physical activity, life spirit and optimistic about the future) (scale 1–4).

Results

Musculoskeletal diseases

The prevalence of musculoskeletal diseases among the different groups of employees in 1981 and 1985 is shown in figure 1 in relation to work content. Among the women who continued to work during the follow-up period, the proportion of subjects with musculoskeletal diseases in 1981 was highest among those in physical jobs (42 %) and lowest among those in predominantly mental jobs (32 %). Among the women who retired during the follow-up period due to age, the proportion with musculoskeletal diseases in 1981 was 23–47 %, and these diseases occurred the most often in occupations classified as physical or mixed (mixed physical and mental) work. Of the women who retired prematurely because of medical reasons during the follow-up period, 53–65 % reported musculoskeletal diseases already in 1981, and again the subjects in physical work complained the most often.

Among the men the prevalence of musculoskeletal diseases in 1981 was 25–37, 39–58, and 52–53 % for those who continued to work, retired due to age, and received a disability pension, respectively, during the follow-up period.

In general the proportion of subjects with musculoskeletal diseases in 1981 did not differ much between the men and women in comparable groups, but the proportion of disease was highest among those who were granted a disability pension during the follow-up period.

In 1985 the prevalence of musculoskeletal diseases among the women had increased in all the groups, ir-

respective of the type of work. The highest percentage of increase, from 42 to 60 %, occurred among the women who continued to work and whose work was classified as physically demanding.

Among the men the prevalence of musculoskeletal diseases also increased between 1981 and 1985 in all except one group. The highest percentage of increase was seen among the old-age pensioners who had retired from mental work. In this group the presence of musculoskeletal diseases increased from 42 % in 1981 to 74 % in 1985.

Cardiovascular diseases

The prevalence of cardiovascular diseases (CVD) among the different groups of employees is shown in relation to work content in figure 2. Among the women remaining active during the follow-up period, the prevalence of CVD in 1981 was 16–23 %, with the highest prevalence among those in physical work. Similar prevalences (17–29 %) in 1981 were determined for those who retired due to age during the follow-up period. The highest prevalences (32–37 %) in 1981 were found for those who became disabled during the follow-up period. There were no marked differences with regard to work content in any of the different "outcome" groups.

Among the men, the prevalences of CVD in 1981 in the different populations and work categories were close to those determined for the women. Among the men CVD were present particularly among those who were granted a disability pension during the follow-up period and had worked in mentally demanding jobs (45 %).

In 1985, the prevalence of CVD among the women was about the same as in 1981 or slightly increased in all the groups. Among the disability pensioners the prevalence of CVD had increased from 37 to 53 % for those who had done mental work. In general there were few differences in the prevalence of CVD in 1985 with regard to previous work content.

Among the men the prevalence of CVD in 1985 was generally slightly higher than among the women.

Higher prevalences were seen among the men who were granted a disability pension, particularly when retired from jobs with mixed physical and mental demands or from work with predominantly mental demands.

When the prevalences of CVD in 1981 and 1985 were compared, they had increased in all the work content

groups, except among the men who retired on an old-age pension from physically demanding work, whose prevalence decreased from 14 to 11 %. The highest increase was seen among disability pensioners who, in 1981, had done mental work. In this group the prevalence of CVD increased from 45 to 64 %.

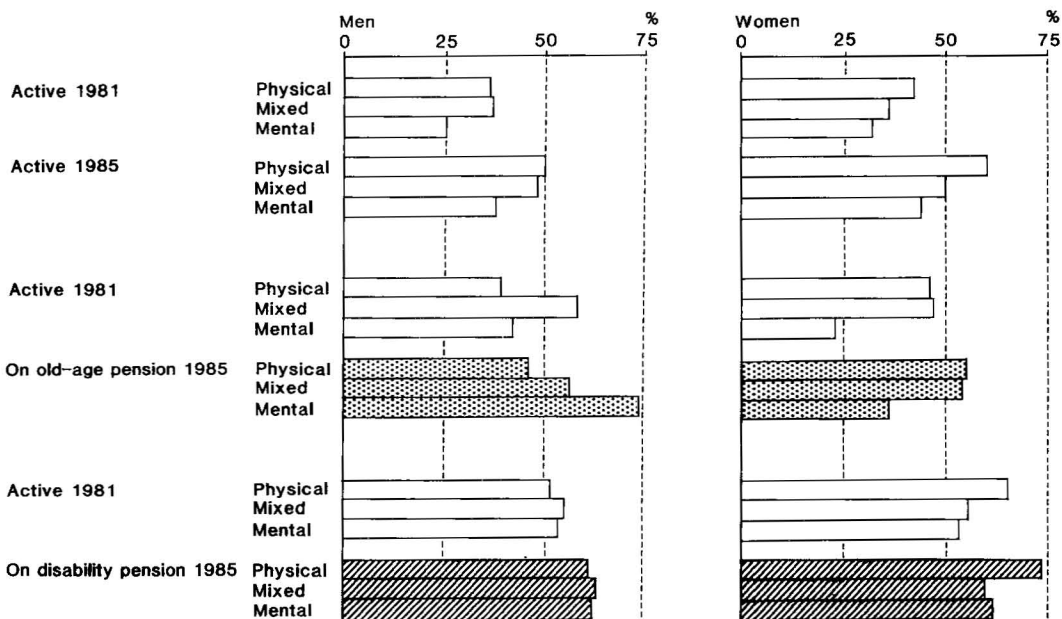


Figure 1. Prevalence of musculoskeletal diseases by work content (physical, mixed physical and mental, and mental) and gender among the active workers, the old-age pensioners, and disability pensioners in 1981 and 1985.

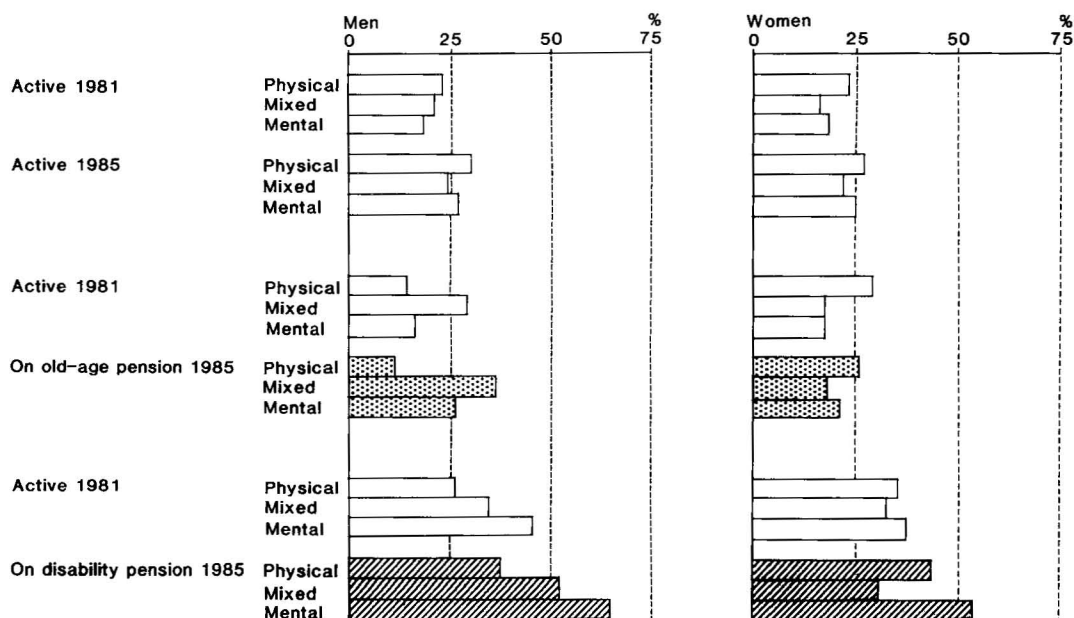


Figure 2. Prevalence of cardiovascular diseases by work content (physical, mixed physical and mental, and mental) and gender among the active workers, the old-age pensioners, and the disability pensioners in 1981 and 1985.

One group with CVD prevalences different from the others in both 1981 and 1985 was that of men who received an old-age pension and who had done mixed physical and mental work. In this group the prevalences (29–36 %) were higher than in the other work content groups of old-age pensioners.

Mental disease

The prevalence of mental disease among the different groups of employees is shown in figure 3 in relation to work content. Among the women the prevalences of mental disease in 1981 were generally low, the highest being found for the women who retired prematurely because of medical reasons during the follow-up period. In this group the highest prevalence in 1981 (16 %) was determined for the subjects in mental work. There were no marked differences in the different work content groups.

Among the men the prevalences of mental disease in 1981 were similar to those of the women. Both among the men and among the women the prevalences of mental disease were the same in 1985 as in 1981, or slightly higher.

Work ability

The prevalence of poor work ability (measured by the work ability index) is shown in figure 4 for the different groups of employees and in relation to work content. Among the women who continued to work during the follow-up period, the prevalence of decreased

work ability in 1981 ranged from 4 to 15 %, being the highest among those in physical work. Among those who were granted an old-age pension during the follow-up period, the prevalence of poor work ability in 1981 was 7–29 %, again with the highest prevalence for those in physical work. For the women who were granted a disability pension, the prevalence of poor work ability in 1981 was 38–63 %.

Among the men the prevalences were 5–13 % for the men who continued to work, 14–25 % for the men granted an old-age pension, and 43–56 % for those who received a disability pension during the follow-up period.

In 1985 the prevalence of poor work ability among the women was higher than in 1981 in all the groups irrespective of the work content. Among the working women, the prevalence of poor work ability was 10–22 %, with the highest prevalence for the women in physical work. Among the old-age pensioners 22–40 % had poor work ability, again with the highest prevalence for women who had done physical work. Among the women who had become disabled during the follow-up, the prevalence of poor work ability was 86–95 % in 1985.

In 1985, among the men continuing to work, the prevalence of poor work ability was 8–19 %, and for the men who had received an old-age pension during the follow-up period the corresponding figure was 49–55 %. The highest prevalences were found for the men who had done physical work. Among those who had been granted a disability pension, 93–97 % had a poor work ability rating in 1985.

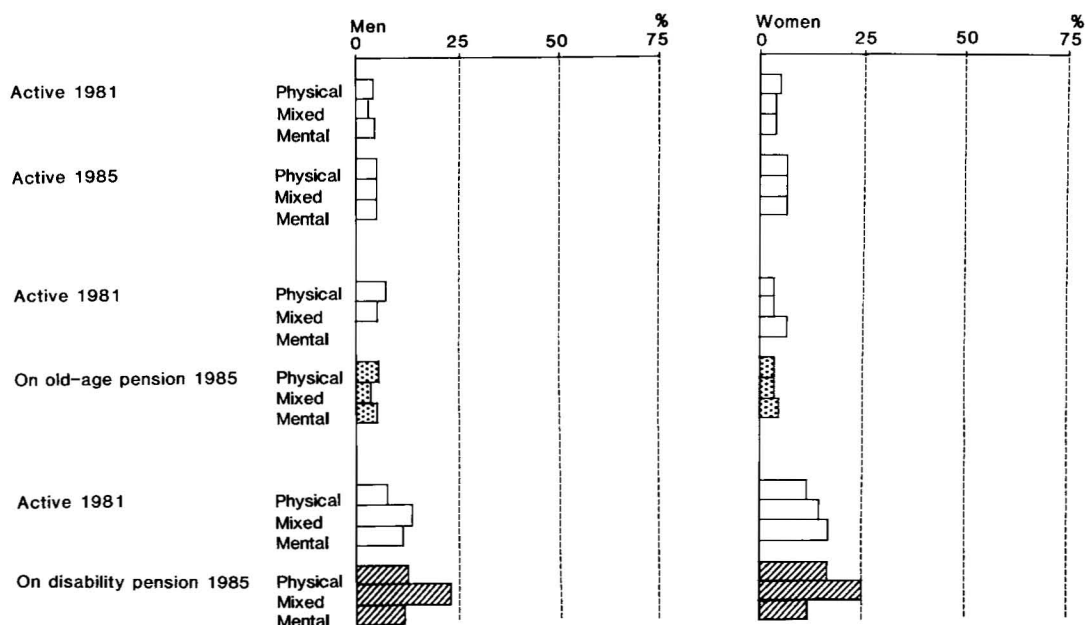


Figure 3. Prevalence of mental disease by work content (physical, mixed physical and mental, and mental) and gender among the active workers, the old-age pensioners, and the disability pensioners in 1981 and 1985.

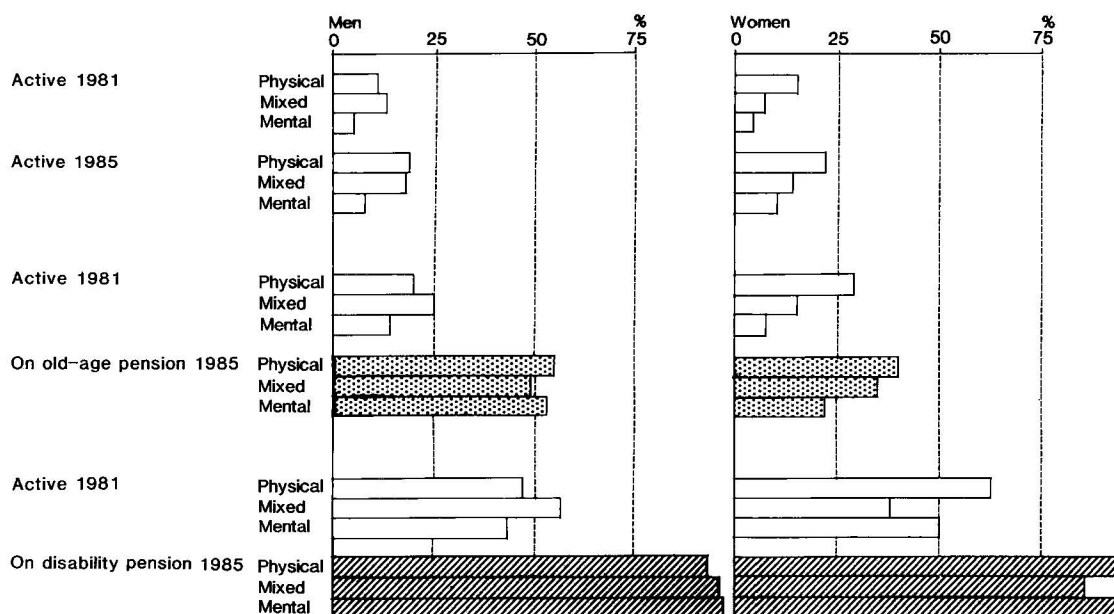


Figure 4. Prevalence of poor work ability by work content (physical, mixed physical and mental, and mental) and gender among the active workers, the old-age pensioners, and the disability pensioners in 1981 and 1985.

When the men and women were compared in 1985, the prevalences were about the same, with the exception of men on an old-age pension, who had markedly higher prevalences than the women.

The prevalences of poor work ability markedly increased between 1981 and 1985 in each group of employees and work content. In many groups the prevalence of poor work ability even doubled, but the highest increments were found for the old-age pensioners, both the men and the women, who had worked in predominantly mental jobs. For the women this increase was from 7 to 22 %, and for the men it was from 14 to 53 %.

Discussion

The present study describes the prevalence of major disability causing diseases and an indexed degree of fitness for work in the preretirement period, and after retirement, in a large cohort of municipal workers. During a four-year follow-up we studied the changes in these prevalences in relation to retirement.

The high prevalences of musculoskeletal diseases among our 44- to 58-year-old workers was similar to previously reported values (11). When the age pattern of our population is taken into consideration, these prevalences are in agreement with results showing that the prevalences of low-back pain increase with age among women and that these figures are particularly common among women in physically demanding jobs (12, 13). On the other hand, among blue-collar workers, the associations between indices of physical work

load and musculoskeletal morbidity have been weak or nonexistent (14).

After retirement, due to either age or disability and regardless of previous work content, very few changes occurred in the prevalence of musculoskeletal diseases among the women. However, among the men, the prevalence of musculoskeletal diseases markedly increased from the preretirement period for the men retired from mental work. It is possible that a more positive attitude towards retirement among the women than among the men may have influenced the perception of different symptoms (15). Musculoskeletal pain has been reported to occur more commonly among subjects who experience disturbing responsibility or dissatisfaction with their jobs. This phenomenon is likely to occur more often in occupations with predominantly mental demands.

Among those who, during 1981–1985, remained in their own job or retired due to age, the prevalence of CVD in 1981 was about 15–30 % with slightly higher figures for the men than the women. During the follow-up period a slight increase was reported. These prevalences correspond to those that have been reported earlier (16). However, for the men retiring due to age from a mentally demanding job, the prevalence of CVD increased after retirement. This occurrence might be related to a possible “beneficial” effect of mentally stimulating, although demanding, work prior to retirement. On the other hand it is possible that a “work-devoted” personality and disease neglect during the last year of worklife may have suppressed the appearance of CVD. The fact that an increase was not seen among the men retiring from physical work, in

fact there was a decrease, may reflect a beneficial effect of retirement on the appearance of CVD in these cases.

Those who became disabled between 1981 and 1985 had already reported a higher prevalence of CVD in 1981 than those who continued to work through the follow-up period and those who retired due to age. After disability pensioning the prevalence of CVD increased further for both the men and the women. CVD is the major cause of disability pensioning in Finland, and poor cardiovascular health increases the probability of retirement. The chronic nature of the disease is not conducive to major improvement after retirement. Our results do not support the suggestion that, with the removal of work demands after retirement, the subjective framework for evaluating one's health will change and result in a perception of improved health (17). On the other hand it has been questioned whether or not illnesses precede retirement if they are causally related to retirement or if self-reported diseases are used as an excuse for retirement (18).

Surprisingly, very few changes were seen in the prevalences of mental disease after retirement regardless of previous work category or type of retirement. This occurrence may be the result of consistent under-reporting of mental diseases in all employment categories. Not surprisingly, among those who reported mental disease after disability pensioning during the follow-up, increased prevalences of mental disease were already seen in the preretirement period.

The prevalence of poor work ability increased in all the work content categories and irrespective of "employment outcome" during the follow-up. Generally speaking, poor work ability was more common for subjects in physically demanding work. Not surprisingly, the poorest work ability was found for those who had retired due to disability, and these people reported poor work ability already during the preretirement period. It was not evident that men or women working in physically demanding jobs were more adversely affected by retirement than those working in mental or mixed physical and mental jobs (19). On the contrary the most marked increase in reported poor work ability occurred among the men who retired due to age, particularly those from mentally demanding work. About half of the retired men reported poor work ability. This marked increase at retirement possibly suggests that self-reported poor work ability is a reaction to the end of a satisfying, mentally stimulating, active life-style and a personal rationalization of retirement (20).

The results stimulate several practical questions. One of them is whether poor health and work ability before retirement can be affected so that a disability pension four years later could be delayed or averted? The higher prevalence rates of musculoskeletal, cardiovascular, and mental diseases were clearly seen four years earlier among both the men and the women who later

became disabled to work. Four years can be too short to change the growing trend towards disability when the employees are over 50 years of age. There are, however, reasons to believe that symptoms of decreasing work ability can be seen much earlier (eg, after the age of 40 years) so that preventive measures can be effective. Another question is whether the health status is improved so much after retirement that an economically active life can be continued (eg, part-time) if wished?

The present results suggest that the work ability index does not improve after old-age pensioning. There are, however, some improvements in health status. Therefore men on an old-age pension from transport work (mixed mental and physical demands) could be suitable for part-time work because the musculoskeletal situation has not changed and the mental situation has slightly improved. Generally speaking, men retired from physical work have a better cardiovascular and mental status after retirement. Among women retired from physical or mixed work, cardiovascular and mental health is either unchanged or improved. Therefore, old-age pensioning from physically demanding jobs does not exclude part-time work in some light type of job. Return to work from a disability pension does not seem realistic, even though the prevalence of CVD decreased among nurses (mixed work) who received a disability pension in our study. Generally, poor work ability measured by a simplified index increases with age independently of previous work demands and the type of retirement.

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