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ATTITUDE TO WORK AND HEALTH PROBLEMS AMONG HOME CARE WORKERS IN SETTINGS WITH DIFFERENT DEGREES OF INSTITUTIONALIZATION

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ABSTRACT. The relationship between different degrees of institutionalization in the care of the elderly (service house, home care, and a combination of both) and work-load, as well as staff feelings regarding psychosocial variables and health complaints, was investigated. Seventy-one staff members similar in background factors answered questionnaires semi-annually during a period of 3 years. The results revealed consistent and stable differences between the different settings. The staff in service houses had the highest documented and subjective work-load and were doubly at risk for neck pain, fatigue and nervousness, and with a five-fold risk of shoulder pain, in comparison with the staff in home care, with the mixed group in an intermediary position. The results indicate that work involving mixed tasks might lower the strain of dealing with highly dependent clients in a highly institutionalized environment. Generalizations are limited, because of small sample sizes and descriptive design, but the results were consistent and persisted over a 3-year period.

Key words: care givers, home care services, housing for the elderly, mental fatigue, neck symptoms, psychological stress, shoulder symptoms, social support, staff work-load.

Care of the elderly is one of the major occupations for women in Sweden. Health problems among health care workers are common (3, 9, 16, 21), the most prevalent being pain in neck/shoulder and low back areas, and symptoms of psychological stress such as fatigue and difficulty in relaxing after work. Psychosocial factors, such as lack of social support and the combination of high work demands with little possibility for decision-making, which account for health problems in other occupational areas, (1, 5, 10, 14, 15, 23), have not yet been found to have the same importance in this field. One explanation given for the musculoskeletal problems is a heavy physical work-load (18). The risk of developing low back pain is especially increased through heavy lifting (16). Around 80% of the work time in caring for the elderly is spent in walking or standing (22). Mental strain is connected with the interactions between staff and clients (21, 22). Interactional problems contribute to the identification of persons who need to take early retirement (22).

Several studies (3, 6, 21, 22) have demonstrated more mental strain (time shortage, feelings of inadequacy and guilt in the relationship with clients) related to health problems and musculoskeletal symptoms in "service houses" than in the home care field. The tasks in these settings are similar, including work postures, but the staff in service houses meet more clients in shorter-term encounters.

Care of the elderly is an important and rapidly growing field; not least with regard to the mentioned health problems, it is of the utmost importance to optimize working conditions for the staff. As work conditions in service houses are found to cause greater strain than in home care (3, 6, 21, 22), the degree of institutionalization might be important. The degree of dependency in clients is also relevant in this context. Whether work in a service house combined with home care lowers the strain for the workers has not yet been investigated.

The aim of the present study was to analyse whether different degrees of institutionalization in the care of the elderly also show differences in documented and subjective work-load, psychosocial variables, and musculoskeletal as well as stress complaints among the staff.

The study was longitudinal in order to enable more stable conclusions.

STUDY GROUP AND METHODS

Setting

The study was conducted in a Swedish municipality of 15,000 inhabitants, where care of the elderly and handicapped was

organized in settings with three different degrees of institutionalization. All 15 work groups in the centre of the municipality were invited to participate. Staff from settings with the following three degrees of institutionalization were represented in the study:

High degree of institutionalization: staff in service houses, i.e. clients living in a block of private flats or rooms with service available. This work is mostly task-oriented, i.e. each worker pays many short visits involving the same kind of tasks, in a kind of "assembly line" (4 work groups constitute the "S-group").

Middle degree of institutionalization: staff stationed in a service house, but also working in home care (5 work groups constitute the "SH-group").

Low degree of institutionalization: staff in home care, i.e. clients living in their original flats or houses, Visits to clients are usually of longer duration and some flexibility is allowed for staff to be responsive to more urgent needs than the assigned task (6 work groups constitute the "H-group").

Most of the work groups were small (6–10 persons), self-directed and included a coordinator who was responsible for administrative tasks.

Subjects

Six data collections were made during a period of 3 years; only subjects present at all of these were included in the analysis. On the first occasion there were 111 participants, of whom 71 were included (response rate 64%). The response rate was highest in the S-group (76%) and somewhat lower in the H-group (60%) and the SH-group (58%). Eleven percent of the drop-outs left for other jobs or retired during the study period. The rest had gone on maternity leave, were absent because of long-term sick leave or missed single occasions of data acquisition for more temporary reasons such as going on vacation or temporary sick leave.

The median age was 44 years, range 19–62 years, and the median period of employment was 6 years, range 0–24 years. Seventy-five percent of the participants had worked only in the present setting. A significantly higher proportion of the staff in service houses was dissatisfied with duty hours and had less experience from other work areas. Otherwise, there were no significant differences in measured background factors between the three groups and the drop-outs (Table I).

Questionnaires

Several different questionnaires were used, some of them recurring on all six occasions (semi-annually), and the rest on two occasions (annually). The questionnaires were personally administered by the researcher. An overview of the methods is presented in Table II.

Work-load

Documented work-load was measured by "client's need for help", a modification of the Katz scale (11, 17), and by "frequency of staff performance of high-need caring tasks" (e.g. help with personal care when the client is bedridden). Degree of "disorientation" was measured by assessing the client's orientation in time, and space, and forgetfulness. *Subjective* work-load was measured by perceived demands on "time", on "emotional engagement" and on "knowledge" (8); by a Swedish version of the Karasek scale of psychological demands (19, 20) (e.g. "Does your job require you to work very hard?"), and by a question about "worries" at work.

Psychosocial variables

Three aspects of psychosocial variables were measured: control of work, work content, and social support. *Control* was measured by the Swedish version of the Karasek scale of "authority over decisions" and "intellectual discretion" (19, 20) (e.g. "Can you decide how your work will be done?"), and by the factors "organizational clarity" (e.g. "Does written information reach your work group?") and "influence exertion" (e.g. "We have decided together how the work is to be done") from a translated questionnaire on work climate (12). *Work content* was measured by a question about "commitment" to work, by the factor "opportunities for development" (e.g. "When somebody in the team learns something new she/he teaches us") from the translated questionnaire on work climate (12), and by a "thermometer", measuring "feelings for assignments". *Social support* was measured by a questionnaire

Table I. *Some background factors in the service house group (S), the mixed group (SH), the home care group (H) and the drop-outs*

	S $n = 25$	SH $n = 18$	H $n = 28$	p	Drop-outs $n = 40$	p
Age (median)	42	52	43.5	0.13	45	0.86
Period of employment (median)	7	9	5.5	0.73	7	0.96
Married (%)	72	83	75	0.68	81	0.61
Have children (%)	84	83	75	0.66	87	0.40
Children at home (%)	57	33	43	0.35	48	0.66
(a) Work full time (%)	36	44	25		29	
(b) Work 75 percent (%)	36	28	61		48	
(c) Work 50 percent (%)	28	28	14	0.90	23	0.74
Satisfied with hours (%)	72	89	100	0.006	81	0.32
Other work experience (%)	48	78	79	0.03	74	0.50
Training in the area (%)	72	50	61	0.46	55	0.50

Significance (p) of differences between the groups was calculated as described in methods.

Table II. *Questionnaires used in the study*

Questionnaires	Type[1]	n[2]	scale[3]	maximum[4]	alpha[5]
Work-load					
Clients' need for help	index	11	1–3	33	
Degree of disorientation	index	3	0–1	3	
High-need caring tasks*	index	11	0–5	55	0.78
Perceived demands (time, emotional engagement, knowledge respectively)*	items	3	1–3	3	
Psychological demands	index	5	1–4	20	0.69
Worries about change	item	1	1–4	4	
Psychosocial variables					
Decision latitude/intellectual discretion	index	6	1–4	24	0.55
Organizational clarity	index	4	1–4	16	0.72
Influence exertion	index	2	1–4	8	0.58
Commitment	item	1	1–4	4	
Opportunities for development	index	6	1–4	24	0.83
Feelings for assignments*	item	1	1–20	20	
Psychosocial positive factors	index	6	1–4	24	0.73
Psychosocial negative factors	index	10	1–4	40	0.79
Openness	index	5	1–4	20	0.85
Management	index	4	1–4	16	0.88
Feelings for team-mates*	item	1	1–20	20	
Health complaints					
Neck pain*	item	1	0–4	4	
Shoulder pain*	item	1	0–4	4	
Low back pain	item	1	0–4	4	
Nervousness*	index	4	1–5	20	0.79
Fatigue*	index	4	1–5	20	0.82
Somatic complaints*	index	3	1–5	15	0.73
Difficulty in relaxing after work*	index	2	1–5	10	0.65

* Questionnaires recurring six times.
[1] type = index or separate questions
[2] n = n of items in index
[3] scale = scaling in questions/index
[4] maximum = maximum sum of points in the index/scale
[5] alpha = Cronbach's alpha for the internal consistency in the index.

(19, 20) which provides questions on "positive" (e.g. "My fellow workers are helpful to me"), as well as "negative psychosocial factors" (e.g. "I am often in conflict with my superiors"); by the factors "openness" (e.g. "Everyone can speak his own mind when we have our discussions"), and "satisfaction with management" (e.g. "Our leader gives positive feedback") from the translated questionnaire of work climate (12), and by a thermometer, measuring "feelings for fellow workers".

Health complaints

Musculoskeletal symptoms from neck, shoulders and low back region, as well as total number of complaints, were measured by the Nordic questionnaire (13) and stress symptoms were measured by a Swedish questionnaire (21). Four factors emerged from this: "nervousness" (sleeping difficulties, depression, reluctance to get up in the morning and restlessness), "fatigue" (feeling too tired for social contact with friends and family, bodily fatigue, muscular pain), "somatic complaints" (stomachache, diarrhoea, headache), "difficulty in relaxing after work" (sleeping difficulties because of thinking about the job).

Statistical analysis

The indices were based on factor analysis with principal component solution and varimax rotation. Items with factor loadings higher than 0.50 after rotation were retained. The internal consistency of the indices was calculated with Cronbach's alfa coefficient. To enable an easier visual comparison, the data were transformed into z-scores by the Blom procedure (4). The results from the different data collections were tested for possible time differences, with Friedman's test (significance level $p < 0.01$), separately for each group/variable. Seventy-five calculations were made and as only three significant differences were found (as could be expected by probability), it was considered reasonable to regard the results as stable. Group means for the different data occasions were thus used for testing group differences by the Kruskal Wallis test. When significant differences ($p < 0.05$) between the three groups were found, further tests were made pair-wise, with the Mann-Whitney test. To obtain a risk estimate of health complaints in different groups, data were divided into a high symptom group (> 65:th percentile) and a low symptom group (< 33:rd percentile) in those health measures that showed significant ($p < 0.01$) differences between groups. Odd ratios (risk estimates) were calculated for these subgroups.

RESULTS

Documented and subjective work-load

There were significant differences in documented work-load between the three settings (Table III). As expected, ''clients' need for help'', ''degree of disorientation'', as well as ''frequency of high-need caring tasks'' were lowest in the H-group and highest in the S-group. ''Frequency of high-need caring tasks'', however, did not differ significantly between the S- and SH-groups.

The three groups also differed in two measures of subjective work-load; staff in the S-group perceived greater demands for ''emotional engagement'' as well as demands on ''time''.

Table III. *Documented and subjective work-load in the service house group (S), the mixed group (SH), and the home care group (H)*

	S $n = 25$	SH $n = 18$	H $n = 28$	*P*-value
Clients' need for help	21.95**	18.03**	14.37	0.001
Degree of disorientation	1.30**	0.73**	0.29	0.001
High-need caring tasks	19.54	21.29**	11.10	0.001
Perceived demands on emotional engagement	1.40*	1.17	1.18	0.02
Perceived demands on time	1.69	1.50	1.33	0.05
Worries about change	2.93	2.61	2.66	0.07
Psychological demands	12.79	12.30	11.67	0.12
Perceived demands on knowledge	1.15	1.12	1.08	0.80

High scores indicate larger work-load.
Figures are group means for the different data collections.
Significance (p) of differences between groups was calculated with the Kruskal-Wallis method.
Significance of differences between the S- and SH-group was calculated with the Mann-Whitney method and is marked with * or ** in the S-column; and between the SH- and H-group in the SH-column (**$p < 0.01$, *$p < 0.05$).

Psychosocial variables

The staff in the H-group had in general a more positive view as reflected by the psychosocial variables, significantly in ''organizational clarity'' and ''openness'' as well as in better ''management'' (Table IV). The staff in the S-group felt less ''work commitment'' than staff in the other groups.

Health complaints

Frequency of shoulder and neck pain as well as nervousness and fatigue differed between the groups (Table V). The staff in the H-group reported the lowest frequencies and the staff in the S-group the highest, the staff in the SH-group showed an intermediate result.

Table IV. *Psychosocial variables in the service house group (S), the mixed group (SH) and the home care group (H)*

	S $n = 25$	SH $n = 18$	H $n = 28$	p-value
Work content:				
Commitment to work	3.02*	3.50	3.48	0.01
Opportunities for development	16.52	16.50	17.28	0.46
Feelings for assignments	14.80	16.21	17.12	0.48
Control of work:				
Organizational clarity	10.24	10.97	11.55	0.03
Influence exertion	6.21	5.88	6.01	0.37
Decision latitude, intellectual exertion	16.28	17.19	17.30	0.32
Social support:				
Openness	13.14	13.08*	14.70	0.05
Management	11.06	11.14	12.53	0.05
Feelings for fellow workers	20.80	21.30	22.24	0.07
Psychosocial negative factors	14.35	15.44	13.55	0.08
Psychosocial positive factors	20.58	20.44	21.19	0.53

High scores indicate positive perceptions (with the exception of ''psychosocial negative factors'', where low scores indicate positive perceptions).
Figures are group means for the different data collections.
Significance (p) of differences between groups was calculated by the Kruskal-Wallis method.
Significance of differences between the S- and SH-group was calculated by the Mann-Whitney method and is marked with * in the S-column; and between the SH- and H-group in the SH-column (*$p < 0.05$).

Table V. *Musculoskeletal and stress complaints in the service house group (S), the mixed group (SH), and the home care group (H)*

	S $n = 25$	SH $n = 18$	H $n = 28$	p-value
Musculoskeletal complaints:				
Shoulder pain	1.87	1.15	0.66	0.001
Neck pain	1.64	0.89	0.43	0.009
Number of complaints	2.16	1.89	1.31	0.04
Low back pain	1.20	1.29	0.99	0.39
Symptoms of stress:				
Nervousness	9.44	8.27	7.33	0.01
Fatigue	11.51	9.93	8.53	0.01
Difficulty in relaxing	5.09	4.02	4.60	0.11
Somatic complaints	5.73	5.66	5.33	0.72

High scores indicate high frequency of complaints.
Figures are group means for the different data collections.
Significance (p) of differences between groups was calculated by the Kruskal-Wallis method.

A risk analysis (odds ratios = O/R) of frequency of complaints for the S-group in relation to the H-group (Table VIa) showed that the risk for symptoms of neck pain, fatigue and nervousness in the S-group was at least twice as high as in the H-group. Shoulder pain was as much as five times higher.

Table VIa. *Risk estimates for measurements of complaints in the S-group compared with the H-group*

	S-group $n = 25$	H-group $n = 28$	O/R	Confidence interval
Shoulder pain (%)	83 ($n = 18$)	17 ($n = 18$)	5.0	1.74–14.33
Neck pain (%)	67 ($n = 24$)	22 ($n = 23$)	2.47	1.32–4.62
Index fatigue (%)	72 ($n = 18$)	29 ($n = 21$)	2.73	1.20–6.20
Index nervousness (%)	76 ($n = 21$)	31 ($n = 16$)	2.43	1.13–5.23

Odd ratios (O/R)
The calculation was made on the 1/3 highest and lowest percentiles.

An O/R analysis of differences between the SH- and the H-group (Table VIb) revealed a double risk for shoulder pain in the SH-group.

Table VIb. *Risk estimates for measurements of complaints in the SH-group compared with the H-group*

	SH-group $n = 18$	H-group $n = 28$	O/R	Confidence interval
Shoulder pain (%)	54 ($n = 13$)	17 ($n = 18$)	2.45	1.11–5.39
Neck pain (%)	50 ($n = 16$)	22 ($n = 23$)	2.0	0.97–4.1
Index fatigue (%)	60 ($n = 10$)	29 ($n = 21$)	2.37	0.84–6.70
Index nervousness (%)	50 ($n = 10$)	31 ($n = 16$)	1.6	0.61–4.15

Odd ratios (O/R)
The calculation was made on the 1/3 highest and lowest percentiles.

DISCUSSION

The aim of the present study was to investigate whether staff attitudes to subjective work-load, psychosocial variables and musculoskeletal as well as stress complaints differed in settings with different degrees of institutionalization in the care of the elderly. The results indicate that the degree of institutionalization is of importance, as there were clear and consistent differences between staff attitudes in the three settings.

In the lowest degree of institutionalization, i.e. home care, the work conditions were described as positive for all aspects measured. The documented work-load was lighter, and the demands less exacting. The work climate, in factors such as openness and organizational clarity, was perceived as more positive, and the leader was better liked. Consequently, the reports of complaints were fewer, regarding both musculoskeletal and stress symptoms. In this group a larger number of staff members were also more satisfied with duty hours. The lower frequency of complaints in this group might be an effect of the lower work-load and of the organizational structure permitting more freedom in encounters with clients. The other positive results might be a consequence of this. In particular, the higher frequency of independent clients might permit more positive feedback from the clients as well as a more positive interaction with them, which might influence evaluations of other aspects of work conditions, e.g. work climate. As work climate and management are two variables known to be closely connected (7), another explanation of the positively perceived work climate might be that these groups had a better leader.

In the highest degree of institutionalization, i.e. service houses, a contrasting picture emerged in almost every aspect, significantly reflected in a more heavily documented work-load, in the perception of more demands on time and emotional engagement, in less satisfaction with work climate and in less commitment to work. The risk for neck pain as well as for nervousness and fatigue was twice as high in this group compared to the H-group, and for shoulder pain five times higher. This negative picture might be accounted for by the higher documented work-load (i.e. higher dependency and degree of disorientation among clients) combined with the organization of the work, with many frequent and short visits to clients, which might limit the possibilities of feedback and positive interaction with the clients.

Whereas the difference between working in service houses and in home care was considerable, the middle degree of institutionalization, i.e. the SH-group, produced a consistent middle position in results. In two aspects, however, the mixed group closely resembled the home care group; the staff reported positive commitment to work as well as the perception of fewer demands on emotional engagement. In a few other aspects the group

more closely resembled the service house group; the performance of high-need caring tasks was similar, as well as the perception of work climate.

There is, of course, no way in this small study of telling whether these different profiles of perceived work conditions and complaints are better explained by the differences in organizational structure or by the documented work-load. Owing to the small *n*, there was unfortunately no possibility of making a multivariate analysis. A comparison of results from the service house group with results from the mixed group suggests, however, that the organizational structure might be important. The staff working with mixed tasks had a lower frequency of symptoms than the staff in service houses, despite an equal frequency of performance of high-need caring tasks. In service houses, almost all clients were very dependent, whereas in the mixed groups the composition of the client group was "diluted" with less dependent clients. In the mixed groups the staff might have had an opportunity for more interaction with some of the clients, a possibility that is perhaps suggested by their greater commitment to work and less strong feelings about demands for emotional engagement. This could mean that it is not only the physical work-load that explains symptoms, but in all probability a combination of the psychological burden of having many dependent and disoriented clients, and a psychosocial framework that does not fully compensate for this strain. This study suggests that a combination of work tasks might be more beneficial to health than having solely institutionalized caring tasks.

The study confirms earlier findings of service houses presenting a higher strain in work than home care (3, 6, 21, 22). Generalizations from the study are, however, limited by the fact that it is a small case study in a relatively stable municipality. However, the fact that the findings were consistent and stable both over a three-year period and in all measurements merits some consideration and encourages further study of the following proposition.

A combination of work between "service house" tasks and "home care" tasks might balance the strain that comes from working with many dependent clients in a highly institutionalized setting that is organized in an assembly line fashion.

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