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TO WORK DESPITE CHRONIC HEALTH CONDITIONS- A QUALITATIVE STUDY OF WORKERS AT THE SWEDISH EMPLOYMENT SERVICE

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ABSTRACT

Objectives: Achieving a sustainable, healthy and long working life is key prerequisite for meeting the demographic challenge posed by an ageing population so that more people can work on into their later years. The objective of this study is to analyse the experiences of a group of employees aged 50-64 with one or more chronic health conditions at the Swedish Public Employment Service in terms of the factors enabling them to keep on working. **Methods**: Ten white-collar workers from three different offices participated in the study. A qualitative method with semi-structured in-depth interviews was used to collect data. **Results and Conclusions**: This study shows that factors enabling people with chronic health conditions to work include adaptation of the work situation by changes in work tasks as well as provision of physical aids. Our study suggest that the changes often come at the employee's initiative, hence, there is potential for greater involvement from the employer, healthcare agencies and the social insurance fund in making it easier for employees to adapt their work situation and in providing information regarding available support. It confirms findings in earlier studies that health plays an important part but also that self confidence and motivation are significant factors contributing to workers being able and wanting to continue working.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- All participants in this study has been interviewed by a single person with long work experience in occupational health, especially rehabilitation.
- It was evident that the study reached an acceptable saturation with regards to factors related to continuation of work and support needs.
- The description of the study population includes detailed information including self-perceived health and workability index.
- A limitation is that the invitation was sent by the employer and critical voices might have had second thought on participating.
- Chronic health condition is a somewhat ambiguous term and our definition in the invitation might have excluded some potential participants
- Adherence to the COREQ guidelines has been implemented from the start in order to meet the quality standards for both publishing and inclusion in future reviews.

BACKGROUND

Achieving a sustainable, healthy and long working life is key prerequisite for meeting the demographic challenge posed by an ageing population. By 2060, there will be only two people of working age (15-64 years) in the EU for every person over 65, compared to a ratio of 4-1 today. This will likely lead to a shortage in the labour force and could result in slower economic growth (1). Sweden has one of the highest rates of employment in the world, including among older workers. In spite of this, 14% of all employees between the ages of 50 and 64 say that, regardless of the state of their health, they do not think that they will be able to work up until the normal retirement age.

Early retirement from work is a complex process which takes place over time and is dependent on numerous different circumstances at both a personal and society level, where health is one of the most important factors. Work ability, motivation and social inclusion are also highlighted as key factors determining the length of people's working life and are established early in life (2).

The number of people with chronic health conditions is rising, which can mostly be attributed to increased life expectancy. Roughly 40% of the population in Europe over the age of 50, including in Sweden, are reckoned to have at least one chronic health condition. Chronic health conditions such as migraines, diabetes and musculoskeletal, respiratory, digestive and psychological health problems increase the risk of early retirement. But this also offers great potential in terms of promoting a better work environment, in a broad sense, for older employees with health problems (3). Because workers with a chronic health condition have been shown to experience more problems, obstacles and needs, the largest gain of occupational intervention can be achieved in these workers (4) . However, there are only a few studies investigating factors in the work environment which play a key role in encouraging people with chronic health conditions to participate in the labour market. There is also a lack of research into how workplaces can adapt to and meet the needs and requirements of employees with chronic health conditions (2). In light of this, it would seem important to analyse the

experience of people with chronic health conditions in terms of their working life and work environment, as well as which factors enable them to work.

The aim of this study is to analyse the experiences of a group of employees in terms of the factors which enable them to work and live with a chronic health condition at the same time.

MATERIALS AND METHODS

Preparation of Manuscript

A COREQ checklist designed for qualitative studies, in-depth interviews and focus groups has been used to ensure that all the components which should be included are described in the existing study (5).

Study population and recruitment

All the study participants worked for the Swedish Public Employment Service, which is a government agency whose main task is to help match job-seekers with employers.

An email invitation was sent via the employer to all staff in three offices during the period December 2016 – January 2017. An additional email was sent out with a reminder. Some offices mentioned the study at workplace meetings and put the recruitment letter in the employees' mailboxes.

The recruitment letter specified the following inclusion criteria: a) Permanent employee as an administrator at the Swedish Public Employment Service, b) Aged 50-64 and c) one or more chronic health conditions since at least one year back.

Those interested in participating in the study were requested to contact the studies first author via email or telephone. An assessment was made at the initial contact as to whether the specified selection criteria were met before a meeting was arranged for a face-to-face interview. The aim was

to interview between 8 and 12 participants. The interviews took place between January and March 2017.

Interviews

A qualitative method with semi-structured in-depth interviews was used to collect data. The interviews were conducted at the study participants' respective workplaces during working hours. The study participants chose where and when the meeting would be held. One of the interviews was conducted via Skype. All interviews were conducted individually, with one interview per study participant. The interviews were conducted by the lead author, who is a woman, master's student and physiotherapist, with more than seven years' work experience in occupational rehabilitation.

The interviews lasted between 45 and 75 minutes. There were also a few minutes where the interviewer introduced herself, the study and its purpose, and also asked the participant to sign the consent form. The interviews ended with a summary by the interviewer. Field notes were not made during the interview.

An interview guide approach was used for the interviews. The interview guide was designed by the study authors and was used in a pilot interview before data was collected.

Furthermore, the interview was introduced with four ratings scales relating to work ability, general state of health and motivation to work. The purpose of the rating scales was to give a fuller description of the study participants. The following four questions were used to survey self-perceived work ability, motivation and health:

1) How would you assess your current work ability compared to when it was at its peak on a scale from 0 to 10? (0 = cannot work at all, 10 = work ability when it is/was at its peak) 2) Thinking about your health – do you think that you can still be doing your current job in two years? (No, I don't, I don't really know, Yes, I definitely will be). 3) How important is work to you on a scale from 1 to 10?

(0 = not at all important, 10 = extremely important. 4) How would you assess your general state of health? (very good, good, reasonable, poor and very poor).

Analysis

The interviews were recorded, transcribed verbatim and coded by the lead author. Thematic analysis was used for analysis (6). The entire analysis covered six phases: reading and re-reading the transcripts, initial coding, identifying themes, reviewing the themes in relation to the coded data, defining and describing the themes, and finally producing a synthesis of the results in this paper. The analysis were based on the study participants' manifest statements. The analysis was performed by the lead author, who throughout the analysis process discussed the coding and the themes with the co-authors. The rest of the research team comprises a doctor, sociologist and psychologist, who all hold PhDs. Transcriptions were not sent to the informants.

Quotes from the study participants, which are presented in the results section, appear in italics. The word order has sometimes been changed and they have been shortened to make them easier to read. Some words have been removed to avoid identification.

Ethical considerations

The study has been approved by the Regional Ethical Review Board in Stockholm, reference number 2016/2105-31/5.

RESULTS

Description of the study population

Ten employees from three different offices expressed an interest in the study. They all met specified criteria and participated in the study. Informants' characteristics are summarized in table 1. The most frequently occurring chronic health conditions were long-term pain conditions, hearing loss, state of fatigue, as well as cardiovascular diseases. Four study participants had one condition, two persons

had two conditions and the remaining four had three or more. One person was on sick leave 25% of the time. Current work ability, compared to when it was at its best was high (median = 8) for all participants except one individual who indicated 2 on the scale from 0-10. In terms of forecasting their work ability in two years from now, in light of their current state of health, seven out of ten study participants reckoned they were sure that they could do their current job in two years if the same circumstances applied. Most of them considered their general state of health to be fairly good or acceptable, in spite of enduring restrictions for many years due to chronic health conditions. Work was considered to be important in many respects by all the study participants.

Insert table 1 here

Factors affecting opportunities to work in spite of having a chronic health condition

The results obtained produced 5 main themes and 13 sub-themes (table 2). The themes are presented in no particular order of precedence.

Insert table 2 here

Adaptation of work

Physical adaptation/aid, such as an adapted chair, an adjustment made to a computer workstation and their own office were mentioned as significant and important requirements for coping with work by the participants who had received this type of support. Several study participants had the perception that their employer was generous with providing physical aids if they were asked to do so. On the other hand, requests for aids were seldom made as they did not know what they should ask for, what might make things easier or they did not take the time to ask. The difficulty in getting their own office adapted appeared to be a major obstacle to them coping with their work.

"I find it extremely hard to concentrate and take in what I'm doing when there are several of us in an office"- participant number 7

”There are no problems getting help. I’ve always had good gadgets, a suitable chair, a Mousetrapper mouse and other devices to help me at my workstation. I’m eternally grateful for this.” - participant number 6

Modifications to work tasks resulted in fewer physical and mental demands. Examples of these modifications included fewer, but more specialised tasks, less customer contact, greater opportunity for own planning and, in some cases, less administration. One participant said that the process of getting adaptations made to both equipment and tasks was complicated and time-consuming:

“I would have avoided a great deal of stomach-ache if it hadn’t been so complicated. Because there is actually mental stress involved as well. The whole thing took a good year. If it had gone a bit more quickly, I might have perhaps been in a better state than I am now.”- participant number 4

And I have a good boss who has been keen to find suitable tasks for me to do. My bosses have actually shown that they want things to work for me during the years that I’ve got left.”
- participant number 10

“I used to have greater responsibility in my job, but I felt that it got too much for me. I needed to change the tasks I did for the good of my health. This means that what works for me now is less responsibility, flexitime and I can manage my time better. I now enjoy my job too!” - participant number 3

A change in the approach to work, based on work arrangements and suitable strategies, played a significant role in making work easier. Strategies which emerged included using flexitime, planning the working day, varying posture while working and taking breaks.

“I don’t need to go off sick. If my work allows it, I can work flexitime and go home earlier that day to rest. And I can now also plan my new work tasks better.” participant number 10

Life style

Physical activity and work/life balance seemed to be important elements in terms of coping better with working life.

Work/life balance was linked to a sense of well-being and work ability. Doing some kind of leisure activity was a way of recharging the batteries and relaxing mentally, which seemed to be especially important for jobs involving a high level of mental stress. Study participants who had adapted their work tasks were largely seen to have a good work/life balance.

”When I’m doing my hobby and producing something with my hands, it’s a way for me to get rid of everything – clear my memory somehow, as it were.” - participant number 1

“Then, when I was given other work tasks to do I gained a better balance. I can do things in my spare time like go to the gym and do other nice things.” - participant number 10

Physical activity was a strategy used by many to improve their state of health, both physical and mental, thereby enabling them to cope with work better. In those cases where participants could not do any physical activity, they mentioned a deterioration in their condition: *“One thing that’s extremely important is that if I don’t move about, I feel worse. A gym class and yoga are very important, just as important as the medication I take.”* - participant number 10

Confidence in one’s own abilities

Confidence was reflected in the study participants’ own view of their condition, their acceptance of it and of a feeling that they had a chance to influence their situation.

Acceptance of the state of their health was prominent among the interviewees. In spite of the restrictions which the disease entailed, most of them voiced the attitude "when life gives you lemons you make lemonade" and that their situation could have been worse.

”I’m almost constantly in pain, but you still learn to live with it somehow.” - participant number 9 10

Confidence in their own ability was perceived to be high, in spite of the tough conditions they endured, as one study participant put it:

"I couldn't keep doing the job I was doing then, when I was very ill, but when I got better, I wanted this job 100% and everyone said that I was mad... But I said that it was maybe something that I could definitely do. Otherwise, I might as well stop." - participant number 7

Perceived decision latitude, in terms of the ability to change their work environment and work situation, they perceived a high probability of this. Overall, everyone felt that they could influence their situation in some way, if they wanted: *"If there's something wrong, I fix it. I don't just sit there and wait for someone else to do something."* - participant number 1

Motivation

Motivation was perceived as an important driver for wanting and managing to work when in poor health. Intellectual stimulation, social cohesion and sense of purpose were prominent factors contributing to increased motivation. Even though some participants encountered major difficulties due to their condition, they expressed a strong motivation to work and find solutions enabling them to continue their working life.

"Even the doctors said, when I got ill and was very bad, that my stubbornness, desire and motivation meant that it was so good that I could manage to do as much as I could." participant number 7

Intellectual stimulus, with interesting and varied work tasks was what the study participants regarded as providing increased motivation for continuing to work: *"I'm lucky that I think I've got a job that I enjoy and find interesting. Otherwise, I would have gone home a long time ago and gone on sick leave."* - participant number 4

Social cohesion, through work and being involved, was a noticeably important factor and driver for work. "The job is extremely important. That's all there is to it. It's particularly important since I can

enjoy the social aspect and be stimulated. It definitely means that I enjoy it a great deal." - participant number 7

Sense of purpose and perceptions that the work they do benefited other people in difficult situations gave them added satisfaction: *"… apart from working to pay for food and rent, work is definitely a major driving force for the social side of things, allowing you to feel that you can make a difference."* - participant number 8

Supporting structures

Three different sub-themes relating to support seemed to be important for helping them work with their condition. Support from superior, support from healthcare agencies and support from the social insurance fund made things easier.

Support from superiors took, for example, the form of setting boundaries, a long-term rehabilitation plan and assistance with finding other tasks to do. Study participants said that this support contributed to peace of mind, reduced anxiety and meant less time off sick. *"It was the prompt support I got from my boss and the company's healthcare team. I would say that it was completely down to the help I got and my own attitude that I could go back to work."* - participant number 6

Support from the healthcare team, which included different healthcare agencies, such as primary care, specialists and the company healthcare team. Suitable medical and behavioural treatment, guided physical activity, physical treatment, knowledge of self-care and individual training, assistance with getting their own office and, to a certain degree, advice about job scope were some of the forms of support provided. Support from the healthcare agencies was considered to be just as vital for those who had received it and a major loss for those did not receive it. But some said that the company's healthcare team were seldom represented and there was uncertainty perceived about the type of support they could give. Others mentioned the contribution made by the company's healthcare team, with support for a change in behaviour in relation to achieving an activity balance.

"I've got a specialist doctor and feel supported. I feel lucky. Then, I've got a good healthcare centre. I'm insisting on working. My doctor says that it is indeed up to me to decide this." - participant number 2

Support from the social insurance fund, in cooperation with the employer, seemed to some study participants to be a success factor in terms of finding a sustainable work situation. The support measures implemented were a long-term rehabilitation plan, work training, an opportunity to try out new work tasks and a gradual increase in working hours as the study participants' well-being improved. This helped these study participants to find, after a time, a sustainable solution and achieve a balance in their working hours and tasks. One interviewee with recurring depression, where the time factor was important for recovery and finding other suitable duties and who gradually stepped things up without experiencing any stress, said that *"One of the best sources of support came from the social insurance fund and my employer, who didn't push too hard."* - participant number 10

DISCUSSION

The analysis process highlighted five main themes which influence the opportunities for working, even when suffering from a chronic health condition. Major emphasis has been placed on describing factors which enable rather than hindering work when someone has a chronic health condition. The study's results show with good consensus that factors enabling people to work while suffering a chronic health condition include adapting the work situation by changing work tasks completely or partially, providing physical aids and by changing one´s behaviour. The study participants' view of their condition, their confidence in their own ability and motivation to work were also significant factors contributing to them wanting and being able to work. Likewise, they all felt that they could, if they wanted, influence both their work situation and work environment to a certain degree.

Several study participants had changed job with the main reason considered for this being their poor health. Changing job is a major adjustment in general and probably adds to the stress in the case of an ongoing condition. In spite of a general low rate of mobility on the Swedish labour market, employers' negative attitudes to people in poor health (7) and employers' lack of awareness about adaptation options available (8), this highlights that the study group has strong confidence in their own ability, strong cognitive capacity and motivation to adapt their situation to make their work life sustainable. However, several study participants were reported to have changed job without indicating the main reason to the employer.

Adaptation measures in the workplace offer relevant support with a positive impact on work ability (9,10). Employers are required by law to adapt working conditions to individuals' different physical and mental requirements (11). Possible reasons for failing to or delaying adaptations are numerous changes of manager, ignorance of the issue among employers or study participants deciding not to mention any support requirements. Norstedt (2016) highlights difficulties which people who have hidden functional impairments have about mentioning this in their workplaces as their perceptions are that it can result in adverse consequences (12). Other studies have suggested that dialogue between the employer and employee and tailored work-related interventions may be helpful (13). This is confirmed in this study where the study participants who decided to talk to their employer about this matter have perceived that they have received good adaptations and support.

Lifestyle factors, such as physical activity and the opportunity to achieve a balance in the activities people do during and between work and their leisure time seemed to play a significant role. Physical activity in particular seemed to be a strong contributory factor in preventing their health from deteriorating, thereby improving their ability to work, which tallies with the findings from other research studies (14).

Confidence in one´s own ability is mentioned in the literature, under the terms "self-efficacy" or "coping", as playing a significant role in how an individual handles a specific situation and the

opportunity to influence their situation (15). The group as a whole had a pragmatic view of their conditions and generally showed broad acceptance of their situation and a high level of confidence in their own ability. From an outsiders perspective, their health status did not seem to correspond with the participants perceived health and their self-reported work ability. Confidence in their own ability could also have been reinforced by the fact that most of the study participants felt that they had the opportunity, if they wanted, to influence both their work environment and work situation. It is well known that a high degree of autonomy and adjustment latitude reduce the risk of people being on sick leave and obtaining sickness benefit (3,16).

Motivation appeared to be a dominating and significantly contributing factor making it possible to work. Motivation to work was perceived as high across the board, irrespective of the extent of and the level of difficulty entailed by their state of health. Factors which contributed to motivation to work were intellectual stimulation, social cohesion and sense of purpose. These factors largely tie in with Antonovsky's theory (1987) on health, SOC - sense of coherence (17) - where comprehensibility, manageability, and meaningfulness are significant factors contributing to an individual's perceived health.

Support, especially from a superior, contributes to creating the opportunities for a longer working life and has a positive impact on people's health (18,19). This was confirmed by some of the study participants, who received support from their boss in different ways, including finding suitable work tasks and adapting the way of working. Study participants who additionally received support from the healthcare team and social insurance fund acknowledged that this was a further boosting factor. These results are in line with findings by others, that employers who adopt a structured approach to rehabilitation, cooperate with other agencies and have strong leadership functions have healthier employees (20).

The study participants felt a general lack of support from the healthcare agencies, which is common among people with a chronic health condition (21). National guidelines indicate the importance of

the support provided by healthcare agencies in terms of rehabilitation by offering continuous, coordinated care to people with a chronic health condition of working age, enabling them to cope with working life (22). Varekamp et al. (2006) also highlight the importance of the overlap between the provision of healthcare and rehabilitation geared towards working life (23).

Semi-structured, in-depth interviews give greater scope for individuals to talk about their experiences and thoughts. It is regarded as a flexible and tried-and-trusted method for gathering data in the field of healthcare research (24).

This study is limited to a small number of participants and a single employer, although three different offices and cities. In spite of the small numbers, the data material gathered is considered to have achieved saturation, based on the study's questions. This was indicated by a large level of consensus and recurrently similar answers within the question areas. This was true in spite of different genders, professional categories and workplaces featuring in the study.

The study author's experience of working in the field of work-related rehabilitation and of working for the same employer as the study participants is mainly considered to be a strength as it made it possible to ask follow-up questions and go into greater depth on various questions.

CONCLUSIONS

This study found that factors enabling workers with chronic health conditions to work include adaptation of the work situation by changes in work tasks as well as provision of physical aids. Our study suggest that the changes may come at the employee's initiative, hence, there is potential for greater involvement from the employer, healthcare agencies and the social insurance fund in making it easier for employees to adapt their work situation and in providing information regarding available support. It confirms findings in earlier studies that health plays an important part but also that self-efficacy and motivation are significant factors contributing to workers being able and wanting to continue working.

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CONTRIBUTORSHIP STATEMENT

The study was conceived by Carina Hjärtström and Theo Bodin. The study protocol and was developed by Carina Hjärtström, Annika Lindah Norberg and Theo Bodin. The interviews were recorded, transcribed verbatim by Carina Hjärtström, and analysed by Carina Hjärtström under supervision from Annika Lindah Norberg. The interpretation of the findings was done by Carina Hjärtström, Annika Lindah Norberg, Gun Johansson and Theo Bodin. The first draft of the manuscript was done by Carina Hjärtström. All subsequent drafts were commented upon and revised by all authors. The submitted version of the manuscript was approved by all authors.

COMPETING INTERESTS

Carina Hjärtström works at the Swedish Public Employment Service. The employer was not involved in designing and analysing the study and had no influence over the study's conclusions. The other authors state that they have no conflicts of interest or objections.

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DATA SHARING STATEMENT

This study does not include any data that could be shared

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Table 1. Background information and characteristics of informants (n=10).

Sex	Men	2
	Women	8
Age	Median (range)	59,5 (51-63)
Educational level	High-school or lower	4
	University	6
Health status	Very poor	0
	Poor	0
	Reasonable	5
	Good	5
	Very good	0
Years with chronic health condition	> 5 years	2
	> 10 years	8
Most common chronic health conditions	Chronic pain condition	
	Hearing loss	
	Burnout/chronic fatigue	
	Cardiovascular disease	
Employment activity	Part-time	3
	Fulltime	7
Years at current employer	8 – 30 years	
Importance of work (1-10)	Median (range)	8(5-9)
Work ability (0-10)	Median (range)	8 (2-9)
Will be working at the same job in 2 years from now	No	0
	Don't know	3
	Yes, definitely	7

Table 2. Thematic analysis of factors enabling work despite chronic health conditions

Main theme	Sub-theme
Adaptation	Physical adaptation/aid Modifications to work tasks Changes in approach to work
Life-style	Work/life balance Physical activity
Confidence in one's own abilities	Acceptance Decision lattitude
Motivation	Intellectual stimulus Social cohesion Sense of purpose
Support from others	Superiors Healthcare Social security

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	6
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	6 + 7
Occupation	3	What was their occupation at the time of the study?	6 + 7
Gender	4	Was the researcher male or female?	6
Experience and training	5	What experience or training did the researcher have?	6 + 7
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	5
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	6
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	17
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	6
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	5
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	7
Non-participation	13	How many people refused to participate or dropped out? Reasons?	7 (NA)
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	6
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	6
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	8
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	6
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	7
Field notes	20	Were field notes made during and/or after the inter view or focus group?	6
Duration	21	What was the duration of the inter views or focus group?	6
Data saturation	22	Was data saturation discussed?	16
Transcripts returned	23	Were transcripts returned to participants for comment and/or	7

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	Table 2
Derivation of themes	26	Were themes identified in advance or derived from the data?	7
Software	27	What software, if applicable, was used to manage the data?	NA
Participant checking	28	Did participants provide feedback on the findings?	6
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	8-13
Data and findings consistent	30	Was there consistency between the data presented and the findings?	NA
Clarity of major themes	31	Were major themes clearly presented in the findings?	Table 2
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	NA

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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To work despite chronic health conditions - A qualitative study of workers at the Swedish Employment Service

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TO WORK DESPITE CHRONIC HEALTH CONDITIONS- A QUALITATIVE STUDY OF WORKERS AT THE SWEDISH EMPLOYMENT SERVICE

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ABSTRACT

Objectives: Achieving a sustainable, healthy and long working life is key prerequisite for meeting the demographic challenge posed by an ageing population so that more people can work on into their later years. The objective of this study is to explore the relationship between work and chronic health conditions in a group of employees aged 50-64 with a focus on factors which enable them to continue to work. **Methods**: Ten white-collar workers with one or more chronic health conditions at the Swedish Public Employment Service participated in the study. A qualitative method with semi-structured in-depth interviews was used to collect data. **Results and Conclusions**: This study shows that factors enabling people with chronic health conditions to work include adaptation of the work situation by task-shifting as well as provision of physical aids. Our study suggest that the changes often come at the employee's initiative, hence, there is potential for greater involvement from the employer, healthcare agencies and the social insurance fund in making it easier for employees to adapt their work situation and in providing information regarding available support. It confirms findings in earlier studies that health plays an important part but also that self-confidence and motivation are significant factors contributing to workers being able and wanting to continue working.

STRENGTHS AND LIMITATIONS OF THIS STUDY

1. All participants in this study has been interviewed by a single person with long work experience in occupational health, especially rehabilitation.
2. It was evident that the study reached an acceptable saturation with regards to factors related to continuation of work and support needs.
3. The description of the study population includes detailed information including self-perceived health and workability index.
4. A limitation is that the invitation was sent by the employer and critical voices might have had second thought on participating.
5. Adherence to the COREQ guidelines has been implemented from the start in order to meet the quality standards for both publishing and inclusion in future reviews.

BACKGROUND

Achieving a sustainable, healthy and long working life is key prerequisite for meeting the demographic challenge posed by an ageing population. By 2060, there will be only two people of working age (15-64 years) in the EU for every person over 65, compared to a ratio of 4-1 today. This will likely lead to a shortage in the labour force and could result in slower economic growth (1). Sweden has one of the highest rates of employment in the world, including among older workers. In spite of this, 14 % of all employees between the ages of 50 and 64 say that, regardless of the state of their health, they do not think that they will be able to work until the normal retirement age (2). Early retirement from work is a complex process which takes place over time and is dependent on numerous different circumstances at both a personal and society level, where health is one of the most important factors (3).

The number of people with chronic health conditions is rising. In Sweden, more than 650,000 people report that health conditions such as impaired hearing, chronic pain, impaired mobility, mental disabilities, cardiovascular conditions or allergies has a negative effect on their work ability. More than 60 % of those with disabilities without employment think they could perform a job if they were supported with some form of adaptations at work (4). A Dutch study has shown that work adaptions are associated with a decrease in sick leave but are estimated to be underutilized opportunities for people with chronic disease (5). Another study indicates that people with impaired health often end their working life earlier than desired (3,6,7). A systematic review indicates that factors which enable people with chronic musculoskeletal pain to stay at work are different kinds of work adjustment, improved ergonomics, social support at job etc, but the evidence is weak (8). People with chronic health conditions increase the risk of early retirement, this is quite clear, and probably the statistics are underestimated since not all are willing to tell about their health situation with their employer (9). But this also offers great potential in terms of promoting a better work environment, in a broad sense, for older employees with health problems. Because workers with chronic health conditions have been shown to experience more problems, obstacles and needs, the largest gain of

occupational intervention can be achieved in these workers (10). However, there are only a few studies that are investigating factors in the work environment which plays a key role in encouraging people with chronic health conditions to participate in the labour market. There is also a lack of research into how workplaces can adapt to and meet the needs and requirements of employees with chronic health conditions (3). Employers, also reports lack of knowledge about disability and possible adaptions at work (11). In light of this, it would seem important to analyse the experience of people with chronic ill-health conditions in terms of their working life and work environment, as well as which factors enables them to continue work.

The aim of this study is to explore the relationship between work and chronic ill-health in a group of public sector employees with a focus on factors which enables them to continue to work.

MATERIALS AND METHODS

Preparation of Manuscript

A COREQ checklist designed for qualitative studies, in-depth interviews and focus groups has been used to ensure that all the components which should be included are described in the existing study (12).

Study population and recruitment

All the study participants worked for the Swedish Public Employment Service, which is a government agency whose main task is to help match job-seekers with employers.

An email invitation was sent via the employer to all staff in three offices during the period December 2016 – January 2017. An additional email was sent out with a reminder. Some offices mentioned the study at workplace meetings and put the recruitment letter in the employees' mailboxes.

The recruitment letter specified the following inclusion criteria: a) Permanent employee as an administrator at the Swedish Public Employment Service, b) Aged 50-64 and c) one or more chronic health conditions since at least one year back.

Those interested in participating in the study were requested to contact the studies first author via email or telephone. An assessment was made at the initial contact as to whether the specified selection criteria were met before a meeting was arranged for a face-to-face interview. The aim was to interview between 8 and 12 participants. The interviews took place between January and March 2017.

Interviews

A qualitative method with semi-structured in-depth interviews was used to collect data. The interviews were conducted at the study participants' respective workplaces during working hours. The study participants chose where and when the meeting would be held. One of the interviews was conducted via Skype. All interviews were conducted individually, with one interview per study participant. The interviews were conducted by the lead author, who is a woman, master's student and physiotherapist, with more than seven years' work experience in occupational rehabilitation.

The interviews lasted between 45 and 75 minutes. There were also a few minutes where the interviewer introduced herself, the study and its purpose, and also asked the participant to sign the consent form. The interviews ended with a summary by the interviewer. Field notes were not made during the interview.

An interview guide approach was used for the interviews, appendix 1. The interview guide was designed by the study authors and was used in a pilot interview before data was collected.

Furthermore, the interviews ended with four ratings scales relating to work ability, general state of health and motivation to work. The purpose of the rating scales was to give a fuller description of the study participants. The ratings were done at the end of the interviews to avoid interference with the

interview. The following four questions were used to survey self-perceived work ability, motivation and health:

1) How would you assess your current work ability compared to when it was at its peak on a scale from 0 to 10? (0 = cannot work at all, 10 = work ability when it is/was at its peak) 2) Thinking about your health – do you think that you can still be doing your current job in two years? (No, I don't, I don't really know, Yes, I definitely will be). 3) How important is work to you on a scale from 1 to 10? (0 = not at all important, 10 = extremely important. 4) How would you assess your general state of health? (very good, good, reasonable, poor and very poor).

Analysis

The interviews were recorded, transcribed verbatim and coded by the lead author. Inductive thematic analysis was used for analysis (13). The entire analysis covered six phases: reading and re-reading the transcripts, initial coding, identifying subthemes and themes, reviewing the themes in relation to the coded data, defining and describing the themes, and finally producing a synthesis of the results in this paper. The analysis was inductive and the structure of the initial coding was guided by the study aim. Data extracts related to the subject matter were identified, condensed, and coded. Subsequently, codes were organised in preliminary themes. These were reviewed and revised in dialogue with the uncondensed interview data, emerging into a final theme structure. Due to the manageable amount of data, specific analysis software was not used, and instead MS Word table could be used to keep the structure of the analysis. The analysis was based on the study participants' manifest statements. The analysis was performed by the lead author, who throughout the analysis process discussed the coding and the themes with the co-authors. The rest of the research team comprises a doctor, sociologist and psychologist, who all hold PhDs. Transcriptions were not sent to the informants.

Quotes from the study participants, which are presented in the results section, appear in italics. The word order has sometimes been changed and they have been shortened to make them easier to read. Some words have been removed to avoid identification.

Ethical considerations

The study has been approved by the Regional Ethical Review Board in Stockholm, reference number 2016/2105-31/5.

RESULTS

Description of the study population

Ten employees from three different offices expressed an interest in the study. They all met specified criteria and participated in the study. Informants' characteristics are summarized in table 1. The most frequently occurring chronic health conditions were long-term pain conditions, hearing loss, state of fatigue, as well as cardiovascular diseases. Four study participants had one condition, two persons had two conditions and the remaining four had three or more. One person was on sick leave 25% of the time. Current work ability, compared to when it was at its best was high (median = 8) for all participants except one individual who indicated 2 on the scale from 0-10. In terms of forecasting their work ability in two years from now, in light of their current state of health, seven out of ten study participants reckoned they were sure that they could do their current job in two years if the same circumstances applied. Most of them considered their general state of health to be fairly good or acceptable, in spite of enduring restrictions for many years due to chronic health conditions. Work was considered to be important in many respects by all the study participants.

Insert table 1 here

General observations of factors related to continuation of work despite having a chronic health condition

The condensation of the interviewes produced 13 sub-themes which could further be grouped into 5 main themes. The sub-themes and main themes are presented in table 2 and a detailed presentation of example quotes and condensations are found in table 1 in the Appendix. Almost all of the study participants reported different types of adaptions as important factors to enable continuation of work. In the cases when adaptations of work hadn't taken place for one reason or the other, this was perceived as a problem. Further, it was also evident that the adaptations that had taken place in most cases came at the informants' own initiative. Although the study participants who had informed their employer about their health condition experienced support, most participants had chosen not to tell the employer. Work was perceived to promote health and as a way to reduce the impact of the chronic condition on quality of life, contributing to social cohesion and sense of purpose.

Insert table 2 here

Adaptation of work

Physical adaptation/aid, such as an adapted chair, an adjustment made to a computer workstation or getting their own separate office were mentioned as significant and important requirements for coping with work by the participants who had received this type of support. Several study participants had the perception that their employer was generous with providing physical aids if they were asked to do so. *"There are no problems getting help. I've always had good gadgets, a suitable chair, a Mousetrapper mouse and other devices to help me at my workstation. I'm eternally grateful for this."* - participant number 6

On the other hand, requests for aids were seldom made as they did not know what they should ask for, or they did not take the time to ask for it. As one of the respondents witnessed, the difficulty in getting an own office appeared to be a major obstacle to cope with work; *´"I find it extremely hard to concentrate and take in what I'm doing when there are several of us in an office"*- participant number 7

Modifications to work tasks resulted in fewer physical and mental demands. Examples of these modifications included fewer, but more specialised tasks, less customer contact, greater opportunity for own planning and, in some cases, less administration. Study participants who had adapted their work tasks also found it contributing to a better work–life balance. A change in the approach to work, based on work arrangements and suitable strategies, played a significant role in making work easier. Strategies which emerged included reorganizing work through introduction of flexitime and remote working as well as changing details such as varying posture while working and taking more frequent breaks. Two of the participants summarize both changes in work content and organization: *"I used to have greater responsibility in my job, but I felt that it got too much for me. I needed to change the tasks I did for the good of my health. This means that what works for me now is less responsibility, flexitime and I can manage my time better. I now enjoy my job too!"* - participant number 3 *"I don't need to go off sick. If my work allows it, I can work flexitime and go home earlier that day to rest. And I can now also plan my new work tasks better."* participant number 10

Although the participants found their employers to be supportive in general, there was sometimes no sense of urgency or well-established routines to go about changing work. One participant said that the process of getting adaptations made to both equipment and tasks was both complicated, time-consuming and aggravating the health condition: *"I would have avoided a great deal of stomach-ache if it hadn't been so complicated. Because there is actually mental stress involved as well. The whole thing took a good year. If it had gone a bit more quickly, I might have perhaps been in a better state than I am now."*- participant number 4

Life style

Physical activity and achieving work-life balance seemed to be important elements in terms of coping better with work increased well-being and maintained work ability. Work-life imbalance had prompted participants to make changes both at work and at home. Reducing working time, changing work content to both less demanding tasks and a decrease in amount of work were all ways of

attaining a better work-life balance. At home, some of the participants contemplated to hire a maid in order to be able to keep working. However, in one case, combining continued work at the agency and having a personal life seemed to be utopian: *"If I could modify my current work more, I think I can work at 67, because I think the job is fun. Now I just feel I'm working, going home, sitting and doing nothing and then I'm going to bed. I have no energy to train or invite friends, I can´t even think of it. But I've actually searched for another job, [laughing], I'm 63 years old and have searched for another job!*"- participant number 9

The end of the quote above illustrates how the notion of being old and sick limits one's options in attaining work-life balance. The only resolve for some seemed to reach retirement age through part-time work. *"I'll be 63 soon. I have just started thinking about changing my work situation, maybe decrease working hours. I have not thought so before, but now the work takes so much energy and removes so much from my private life. I have no energy for my grandchildren nor my home, that's how it is."* – participant number 2

Physical activity and leisure activities were seen by many as ways to improve their health, both physical and mental, thereby enabling them to cope with work better. Leisure activity was a way of recharging the batteries and relaxing mentally, which seemed to be especially important for jobs involving a high level of mental stress. Conversely, in those cases where participants could not do any physical activity, they felt it contributed to a deterioration in their condition: *"One thing that's extremely important is that if I don't move about, I feel worse. A gym class and yoga are very important, just as important as the medication I take."* - participant number 10

Confidence in one's own abilities

Confidence was reflected in the study participants' own view of their condition, their acceptance of it and of a notion that they could influence their situation.

Acceptance of the state of their health was prominent among the interviewees. In spite of the restrictions which the disease entailed, most of them voiced the attitude "when life gives you lemons you make lemonade" and that their situation could have been worse. As one participant said: *"I'm almost constantly in pain, but you still learn to live with it somehow."* - participant number 9

Confidence in their own ability was perceived to be high, in spite of the tough conditions they endured, as one study participant put it: *"I couldn't keep doing the job I was doing then, when I was very ill, but when I got better, I wanted this job 100% and everyone said that I was mad... But I said that it was maybe something that I could definitely do. Otherwise, I might as well stop."* - participant number 7

Perceived decision latitude, in terms of the ability to change their work environment and work situation was a common feature. Overall, everyone felt that they could influence their situation in some way, if they wanted: *"If there's something wrong, I fix it. I don't just sit there and wait for someone else to do something."* - participant number 1

Motivation

Even though some participants encountered major difficulties due to their condition, they expressed a strong motivation to work and find solutions enabling them to continue their working life. Intellectual stimulus, meaning interesting, varied and challenging work tasks was regarded as important motivational factors. *"I'm lucky that I think I've got a job that I enjoy and find interesting. Otherwise, I would have gone home a long time ago and gone on sick leave."* - participant number 4 Just as important motivational factor was the social dimension of work: *"The job is extremely important. That's all there is to it. It's particularly important since I can enjoy the social aspect and be stimulated. It definitely means that I enjoy it a great deal."* - participant number 7 Thirdly, a sense of purpose and perceptions that the work they did benefited other people in difficult situations added to motivation and work satisfaction: *"… apart from working to pay for food and rent, work is*

definitely a major driving force for the social side of things, allowing you to feel that you can make a difference." - participant number 8

Supporting structures

Three supporting structures were identified during as especially important to enable work despite a chronic health condition. These were support from superior, support from healthcare agencies and support from the social insurance fund.

Support from superiors was in most cases initiated only after the participant had made such a demand. The support consisted of organizing work and help with task shifting. Support from the company´s occupational health care provider was usually initiated by the employer and could include workplace interventions and a long-term rehabilitation plan. Study participants said that this support contributed to peace of mind, reduced anxiety and meant less time off sick. *"It was the prompt support I got from my boss and the company's healthcare team. I would say that it was completely down to the help I got and my own attitude that I could go back to work."* - participant number 6

Support from healthcare, which included different healthcare agencies, such as primary care, specialists and the occupational health care providers. Suitable medical and behavioural treatment, guided physical activity, physical treatment, knowledge of self-care and individual training, assistance with getting their own office and, to a certain degree, advice about job scope were some of the forms of support provided. Support from the healthcare agencies was considered to be just as vital for those who had received it as it was perceived as a major loss for those did had not. Some said that the company's occupational health care provider was hard to access and there was uncertainty regarding which type of support they could give. Others mentioned the contribution made by the company's healthcare team, with support for a change in behaviour in relation to achieving an activity balance. The participants said that contact with the regular health-care system was a private thing and cooperation with other supporting structures did not occur.

Support from the social insurance fund, in cooperation with the employer, seemed to some study participants to be a success factor in terms of finding a sustainable work situation. The cooperation was usually initiated by the insurance fund, but also by the employee. The support measures implemented were a long-term rehabilitation plan, work training, an opportunity to try out new work tasks and a gradual increase in working hours as the study participants' well-being improved. This helped these study participants to find a sustainable solution and achieve a balance in their working hours and tasks. One interviewee with recurring depression, for whom gradual return-to-work was incremental for success said that *"One of the best sources of support came from the social insurance fund and my employer, who didn't push too hard."* - participant number 10

DISCUSSION

The analysis process highlighted five main themes which influencing the continuation of the study participant's work-life, even when suffering from chronic health conditions. Major emphasis has been placed on describing factors which enable rather than hindering work. The study's results show with good consensus that factors enabling people to continue work while suffering a chronic health condition include adapting the work situation by complete or partial task-shifting, provision of physical aids. Other important factors are adaptation of individual behaviour related to work and personal life. We also found that the study participants' view of their condition, their confidence in their own ability and motivation to work also were significant factors contributing to both wanting and being able to work. In this study, all participants felt that they could (if they wanted to) influence both their work situation and work environment to a certain degree, a finding that highlights the importance of agency and decision latitude.. Our findings are in line with the review by Loisel et al. (2005), who found that the same factors are important in return-to-work and prevention of disability due to musculoskeletal disorders (14). There are few studies on retention of older workers with

chronic disease at work (15) and the the main contribution of our study is that it, reassuringly enough, indicates that the same factors are in play for “return-to-work” as “stay-at-work” for employees with chronic disease.

Adaptation measures in the workplace offer relevant support with a positive impact on work ability (16,17). Employers are required by law to adapt working conditions to individuals’ different physical and mental requirements (18). Possible reasons for failing to or delaying adaptations are frequent changes in management, ignorance of the issue among employers or study participants deciding not to mention any support requirements. Norstedt (2016) highlights difficulties which people who have hidden functional impairments have about mentioning this in their workplaces as their perceptions are that it can result in adverse consequences (19). Other studies have suggested that dialogue between the employer and employee and tailored work-related interventions may be helpful (7). This is confirmed in this study where the study participants who decided to talk to their employer about this matter have perceived that they have received good adaptations and support.

Lifestyle factors, such as physical activity and other leisure activities as well as behavioural changes in order to attain a good work-life balance seemed to play a significant role. Physical activity in particular seemed to be a strong contributory factor in preventing further deteriorating of the participants’ health, thereby improving their work ability, which tallies with the findings from other research studies (20).

Confidence in one´s own ability, often labled “self-efficacy” or “coping”, plays an important role in how individuals handle specific situations and is a determinant of their ability to influence their situation (21). The group of informants in the present study held a pragmatic view of their options in life and generally showed broad acceptance of their situation and a high level of confidence in their own ability. From an outsider’s perspective, their health status did not seem to correlate with their perceived health or their self-reported work ability, highlighting the importance of a holistic

approach tailored for the individual in order to retain workers with chronic disease while also maintaining productivity as proposed in previous research by others (15). Confidence in their own ability could also have been reinforced by the generally high level of decision latitude, which is well known to be associated to a lower risk of sick leave (22,23). It also aligns well with findings that expanded job control could be an important way to counteract the negative effects on work performance because of decreased work ability (24).

Work motivation was high for all respondents, irrespective of health status. Although factors outside the workplace are important, our results suggest that it should be possible to develop and evaluate interventions aimed at maintaining work motivation, especially intellectual stimulation, social cohesion and sense of purpose. It seems important to help workers to maintain and cultivate a sense of coherence (25) at the workplace- where comprehensibility, manageability, and meaningfulness can contribute to the individual's health. In order to adapt work and maintain good social work environment, support, especially from superiors who contribute to creating opportunities for a longer working life and have a positive impact on workers health (26,27). Some participant had received support from their superior in different ways, including finding suitable work tasks and adapting the way of working. Study participants who additionally received support from the healthcare team and social insurance fund acknowledged that this was a further boosting factor. These results are in line with findings by others, that employers who adopt a structured approach to rehabilitation, cooperate with other agencies and have strong leadership functions have healthier employees (28). The study participants felt a general lack of support from the healthcare agencies, which is common among people with a chronic health condition (29). National guidelines indicate the importance of the support provided by healthcare agencies in terms of rehabilitation by offering continuous, coordinated care to people with a chronic health condition of working age, enabling them to cope with working life (30). Varekamp et al. (2006) also highlight the importance of the overlap between the provision of healthcare and rehabilitation geared towards working life (31).

Strengths and limitations

The trustworthiness of our study is primarily established through the credibility of the research methods we applied (32). The choice of semi-structured, in-depth interviews was to give greater scope for individuals to talk about their experiences and thoughts. It is regarded as a flexible and tried-and-trusted method for gathering data in the field of healthcare research (33). Interviews was held by the same author to ensure the same procedure. No field notes were taking during the interviews, to enable an active and attentively listening. Those were important steps to avoid self-understanding and interpretation and to achieve credibility in the findings. The study author's experience of working in the field of work-related rehabilitation and of working for the same employer as the study participants is mainly considered to be a strength as it made iterative questioning possible, i.e. ask follow-up questions and go into greater depth on various questions.

A limitation, both with regards to establishing credibility and transferability is that this study is limited to a small number of participants and a single employer. Aspects of work and chronic disease that could be present among employees in e.g. private sector or manual work have not been investigated in this study. In spite of the small numbers, the data material gathered is considered to have achieved saturation, based on the study's questions. This was indicated by a large level of consensus and recurrently similar answers within the question areas. This was true in spite of different genders, professional categories and workplaces featuring in the study. Although the results should be interpreted with caution, they are consistent with previous research (3,5,7,8,14,31). The dependability and confirmability of this study was assured through close adhesion to COREQ guidelines (12) and detailed reporting of methodology in order to enable the reader to make a critical appraisal of our study.

CONCLUSIONS

This study found that factors enabling workers with chronic health conditions to work include early adaptation of the work situation through task shifting as well as provision of physical aids. Our study suggest that the changes are likely to come at the employee's initiative, hence, there is untapped potential for greater cooperation involving the employer, healthcare agencies and the social insurance fund in providing information regarding available support and interventions tailored to suit the individual. This study also suggests that there is need to deliver interventions more timely than today and involve several actors from the beginning in order to be successful. It confirms findings in earlier studies that health plays an important part but also that self-efficacy and motivation are significant factors contributing to workers being able and wanting to continue working.

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I would like to sincerely thank all the study participants who took the time to take part and talk about their experiences. I hope that I have done justice to the information you provided. I would also like to thank the employers for agreeing to participate and to those who helped with sending out the study invitations.

CONTRIBUTORSHIP STATEMENT

The study was conceived by Carina Hjärtström and Theo Bodin. The study protocol was developed by Carina Hjärtström, Annika Lindahl Norberg and Theo Bodin. The interviews were recorded, transcribed verbatim by Carina Hjärtström, and analysed by Carina Hjärtström under supervision from Annika Lindahl Norberg. The interpretation of the findings was done by Carina Hjärtström, Annika Lindahl Norberg, Gun Johansson and Theo Bodin. The first draft of the manuscript was done by Carina Hjärtström. All subsequent drafts were commented upon and revised by all authors. The submitted version of the manuscript was approved by all authors.

COMPETING INTERESTS

Carina Hjärtström works at the Swedish Public Employment Service. The employer was not involved in designing and analysing the study and had no influence over the study's conclusions. The other authors state that they have no conflicts of interest or objections.

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DATA SHARING STATEMENT

This study does not include any data that could be shared

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Table 1. Background information and characteristics of informants (n=10).

Sex	Men	2
	Women	8
Age	Median (range)	59,5 (51-63)
Educational level	High-school or lower	4
	University	6
Health status	Very poor	0
	Poor	0
	Reasonable	5
	Good	5
	Very good	0
Years with chronic health condition	> 5 years	2
	> 10 years	8
Most common chronic health conditions	Chronic pain condition	
	Hearing loss	
	Burnout/chronic fatigue	
	Cardiovascular disease	
Employment activity	Part-time	3
	Fulltime	7
Years at current employer	8 – 30 years	
Importance of work (1-10)	Median (range)	8(5-9)
Work ability (0-10)	Median (range)	8 (2-9)
Will be working at the same job in 2 years from now	No	0
	Don't know	3
	Yes, definitely	7

Table 2. Thematic analysis of factors enabling work despite chronic health conditions

Sub-theme	Main theme
Physical adaptation/aid Modifications to work tasks Changes in approach to work	Adaptation
Work–life balance Physical activity	Life-style
Acceptance Decision lattitude	Confidence in one's own abilities
Intellectual stimulus Social cohesion Sense of purpose	Motivation
Superiors Healthcare Social security	Support from others

Appendix

Interview guide

Background questions before interview

- Age
- Sex
- Professional title
- Length of education
- Duration of working hours
- Employed since year
- Diagnosis
- Debut year of desease

Semi-structured interview

1. Describe how a typical day at work looks like for you?
2. How does your health affect your work today?
3. What is it that makes it possible to work today?
4. Does your employer and colleagues know about your health situation?
5. Do you have or have you had any adjustment or support at work and in such cases what?
6. Do you miss any support today?
7. Do you see any need for support later on and in such cases what?
8. Do you feel that you can influence your work environment vs work situation?
9. How do you look at the opportunities for a long professional life?

Background questions after the interview

- Individual conditions/family situation
- Financial/economic incentives
- Healthcare contacts
- Sickness benefit

- How would you assess your general state of health?
    - Very good
    - Good
    - Reasonable
    - Poor
    - Very poor
- How important is work to you on a scale from 1-10?
    - 10 point VAS scale
        - 0 = not at all important
        - 10 = extremely important)
- Thinking about your health - do you think that you can still be doing your current job in two years?
    - No, I don´t
    - I don´t really know
    - Yes, I definitely will be
- Current work ability compared with lifetime best on a scale from 0 to 10?"
    - 10 point VAS scale
        - 0= Cannot work at all
        - 10=Work ability at lifetime best

Table I. Thematic analysis of factors enabling work despite chronic health conditions

Quotes from study participants	Condensation	Sub-theme	Main theme
"There are no problems getting help. I've always had good gadgets, a suitable chair, a Mousetrapper mouse and other devices to help me at my workstation. I'm eternally grateful for this." - participant number 6 *"I find it extremely hard to concentrate and take in what I'm doing when there are several of us in an office"- participant number 7*	No problems getting help when asking Problem to work undisturbed	Physical adaptation/aid	**Adaptation**
"I would have avoided a great deal of stomach-ache if it hadn't been so complicated. Because there is actually mental stress involved as well. The whole thing took a good year. If it had gone a bit more quickly, I might have perhaps been in a better state than I am now."- participant number 4 *And I have a good boss who has been keen to find suitable tasks for me to do. My bosses have actually shown that they want things to work for me during the years that I've got left."* *- participant number 10* *"I used to have greater responsibility in my job, but I felt that it got too much for me. I needed to change the tasks I did for the good of my health. This means that what works for me now is less responsibility, flexitime and I can manage my time better. I now enjoy my job too!" - participant number 3*	Modification, wish to get earlier New tasks – possibility for longer working life More flexibility, less responsibility, manage better	Modifications to work tasks	
"I don't need to go off sick. If my work allows it, I can work flexitime and go home earlier that day to rest. And I can now also plan my new work tasks better." participant number 10	Planning/own strategies reduces sick leave	Changes in approach to work	
"When I'm doing my hobby and producing something with my hands, it's a way for me to get rid of everything – clear my memory somehow, as it were." - participant number 1 *"Then, when I was given other work tasks to do I gained a better balance. I can do things in my spare time like go to the gym and do other nice things." - participant number 10* *"If I could modificate my current work more, I think I can work at 67, because I think the job is fun. Now I just feel I'm working, going home, sitting and doing nothing and*	Spare time activities reduces mental stress Modifications to work tasks benefits private life Desire for more possibilities/adjustments	Work–life balance	**Life-style**

then I'm going to bed. I have no energy to train or invite friends, I can´t even think of it. But I've actually searched for another job, [laughing], I'm 63 years old and have searched for another job! - participant number 9 *I'll be 63 soon. I have just started thinking about changing my work situation, maybe decrease working hours. I have not thought so before, but now the work takes so much energy and removes so much from my private life. I have no energy for my grandchildren nor my home, that's how it is* *"It´s a health benefit to go to work, despite bad health. I am soon getting cleaning service at home, because I can´t do it myself, it is an adjustment at home so I´ve got energy for work instead." – participant number 1*	Unbalance work/leisure time Adjustments at home		
"One thing that's extremely important is that if I don't move about, I feel worse. A gym class and yoga are very important, just as important as the medication I take." – participant number 10	Time and energy for training/rehabilitation	Physical activity	
"I'm almost constantly in pain, but you still learn to live with it somehow." - participant number 9 *"I couldn't keep doing the job I was doing then, when I was very ill, but when I got better, I wanted this job 100% and everyone said that I was mad... But I said that it was maybe something that I could definitely do. Otherwise, I might as well stop." - participant number 7*	Learn to live with pain Believe in own ability	Acceptance	**Confidence in one's own abilities**
"If there's something wrong, I fix it. I don't just sit there and wait for someone else to do something." - participant number 1	Can influence and control	Decision lattitude	
"I'm lucky that I think I've got a job that I enjoy and find interesting. Otherwise, I would have gone home a long time ago and gone on sick leave." - participant number 4	Work interesting	Intellectual stimulus	**Motivation**
"The job is extremely important. That's all there is to it. It's particularly important since I can enjoy the social aspect and be stimulated. It definitely means that I enjoy it a great deal." - participant number 7	Colleagues important	Social cohesion	
"... apart from working to pay for food and rent, work is definitely a major driving force for the social side of things, allowing you to feel that you can make a difference." - participant number 8	Meaningful, can make a difference	Sense of purpose	

"It was the prompt support I got from my boss and the company's healthcare team. I would say that it was completely down to the help I got and my own attitude that I could go back to work." - participant number 6	Early support at the employers initiative	Superiors	**Support from others**
"I've got a specialist doctor and feel supported. I feel lucky. Then, I've got a good healthcare centre. I'm insisting on working. My doctor says that it is indeed up to me to decide this." - participant number 2	Adequate health care contacts	Healthcare	
"One of the best sources of support came from the social insurance fund and my employer, who didn't push too hard." - participant number 10	Cooperation on rehabilitation	Social security	

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	6
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	6 + 7
Occupation	3	What was their occupation at the time of the study?	6 + 7
Gender	4	Was the researcher male or female?	6
Experience and training	5	What experience or training did the researcher have?	6 + 7
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	5
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	6
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	17
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	6
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	5
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	7
Non-participation	13	How many people refused to participate or dropped out? Reasons?	7 (NA)
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	6
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	6
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	8
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	6
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	7
Field notes	20	Were field notes made during and/or after the inter view or focus group?	6
Duration	21	What was the duration of the inter views or focus group?	6
Data saturation	22	Was data saturation discussed?	16
Transcripts returned	23	Were transcripts returned to participants for comment and/or	7

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	Table 2
Derivation of themes	26	Were themes identified in advance or derived from the data?	7
Software	27	What software, if applicable, was used to manage the data?	NA
Participant checking	28	Did participants provide feedback on the findings?	6
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	8-13
Data and findings consistent	30	Was there consistency between the data presented and the findings?	NA
Clarity of major themes	31	Were major themes clearly presented in the findings?	Table 2
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	NA

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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To work despite chronic health conditions - A qualitative study of workers at the Swedish Employment Service

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TO WORK DESPITE CHRONIC HEALTH CONDITIONS- A QUALITATIVE STUDY OF WORKERS AT THE SWEDISH EMPLOYMENT SERVICE

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ABSTRACT

Objectives: Achieving a sustainable, healthy and long working life is key prerequisite for meeting the demographic challenge posed by an ageing population so that more people can work on into their later years. The objective of this study is to explore the relationship between work and chronic health conditions in a group of employees aged 50-64 with a focus on factors which enable them to continue to work. **Methods**: Ten white-collar workers with one or more chronic health conditions at the Swedish Public Employment Service participated in the study. A qualitative method with semi-structured in-depth interviews was used to collect data. **Results and Conclusions**: This study shows that factors enabling people with chronic health conditions to work include adaptation of the work situation by task-shifting as well as provision of physical aids. Our study suggest that the changes often come at the employee's initiative, hence, there is potential for greater involvement from the employer, healthcare agencies and the social insurance fund in making it easier for employees to adapt their work situation and in providing information regarding available support. It confirms findings in earlier studies that health plays an important part but also that self-confidence and motivation are significant factors contributing to workers being able and wanting to continue working.

STRENGTHS AND LIMITATIONS OF THIS STUDY

1. All participants in this study has been interviewed by a single person with long work experience in occupational health, especially rehabilitation.
2. It was evident that the study reached an acceptable saturation with regards to factors related to continuation of work and support needs.
3. The description of the study population includes detailed information including self-perceived health and workability index.
4. A limitation is that the invitation was sent by the employer and critical voices might have had second thought on participating.
5. Adherence to the COREQ guidelines has been implemented from the start in order to meet the quality standards for both publishing and inclusion in future reviews.

BACKGROUND

Achieving a sustainable, healthy and long working life is key prerequisite for meeting the demographic challenge posed by an ageing population. By 2060, there will be only two people of working age (15-64 years) in the EU for every person over 65, compared to a ratio of 4-1 today. This will likely lead to a shortage in the labour force and could result in slower economic growth (1). Sweden has one of the highest rates of employment in the world, including among older workers. In spite of this, 14 % of all employees between the ages of 50 and 64 say that, regardless of the state of their health, they do not think that they will be able to work until the normal retirement age (2). Early retirement from work is a complex process which takes place over time and is dependent on numerous different circumstances at both a personal and society level, where health is one of the most important factors (3).

The number of people with chronic health conditions is rising. In Sweden, more than 650,000 people report that health conditions such as impaired hearing, chronic pain, impaired mobility, mental disabilities, cardiovascular conditions or allergies has a negative effect on their work ability. More than 60 % of those with disabilities without employment think they could perform a job if they were supported with some form of adaptations at work (4). A Dutch study has shown that work adaptions are associated with a decrease in sick leave but are estimated to be underutilized opportunities for people with chronic disease (5). Another study indicates that people with impaired health often end their working life earlier than desired (3,6,7). A systematic review indicates that factors which enable people with chronic musculoskeletal pain to stay at work are different kinds of work adjustment, such as improved ergonomics, and social support , but the evidence is weak (8). People with chronic health conditions have an increased risk of early retirement.(9). There is a great potential to maintain these groups in working life if we have a better understanding of conditions enabling this However, there are only a few studies that are investigating factors in the work environment which plays a key role in encouraging people with chronic health conditions to participate in the labour market. There is also a lack of research into how workplaces can adapt to and meet the needs and

requirements of employees with chronic health conditions (3). Employers, also reports lack of knowledge about disability and possible adaptions at work (10). In light of this, it would seem important to analyse the experience of people with chronic ill-health conditions in terms of their working life and work environment, as well as which factors enables them to continue work.

The aim of this study is to explore the relationship between work and chronic ill-health in a group of public sector employees with a focus on factors which enables them to continue to work.

MATERIALS AND METHODS

Preparation of Manuscript

The Consolidated criteria for reporting qualitative research (COREQ) checklist designed for qualitative studies, in-depth interviews and focus groups has been used to ensure that all the components which should be included are described in the existing study (11).

Patient and Public Involvement

Patients and or public were not involved in development of this study. The results of the study will be disseminated to study participants through a personal copy of this paper.

Study population and recruitment

All the study participants worked for the Swedish Public Employment Service, which is a government agency whose main task is to help match job-seekers with employers.

An email invitation was sent via the employer to all staff in three offices during the period December 2016 – January 2017. An additional email was sent out with a reminder. Some offices mentioned the study at workplace meetings and put the recruitment letter in the employees' mailboxes.

The recruitment letter specified the following inclusion criteria: a) Permanent employee as an administrator at the Swedish Public Employment Service, b) Aged 50-64 and c) one or more chronic health conditions since at least one year back.

Those interested in participating in the study were requested to contact the studies first author via email or telephone. An assessment was made at the initial contact as to whether the specified selection criteria were met before a meeting was arranged for a face-to-face interview. The aim was to interview between 8 and 12 participants. The interviews took place between January and March 2017.

Interviews

A qualitative method with semi-structured in-depth interviews was used to collect data. The interviews were conducted at the study participants' respective workplaces during working hours. The study participants chose where and when the meeting would be held. One of the interviews was conducted via Skype. All interviews were conducted individually, with one interview per study participant. The interviews were conducted by the lead author, who is a woman, master's student and physiotherapist, with more than seven years' of work experience in vocational rehabilitation.

The interviews lasted between 45 and 75 minutes. There were also a few minutes where the interviewer introduced herself, the study and its purpose, and also asked the participant to sign the consent form. The interviews ended with a summary by the interviewer. Field notes were not made during the interview.

An interview guide approach was used for the interviews, appendix 1. The interview guide was designed by the study authors and was used in a pilot interview before data was collected.

Furthermore, the interviews ended with four ratings scales relating to work ability, general state of health and motivation to work. The purpose of the rating scales was to give a fuller description of the study participants. The ratings were done at the end of the interviews to avoid interference with the

interview. The following four questions were used to survey self-perceived work ability, motivation and health:

1) How would you assess your current work ability compared to when it was at its peak on a scale from 0 to 10? (0 = cannot work at all, 10 = work ability when it is/was at its peak) 2) Thinking about your health – do you think that you can still be doing your current job in two years? (No, I don't, I don't really know, Yes, I definitely will be). 3) How important is work to you on a scale from 1 to 10? (0 = not at all important, 10 = extremely important. 4) How would you assess your general state of health? (very good, good, reasonable, poor and very poor).

Analysis

The interviews were recorded, transcribed verbatim and coded by the lead author. Inductive thematic analysis was used for analysis (12). The entire analysis covered six phases: reading and re-reading the transcripts, initial coding, identifying subthemes and themes, reviewing the themes in relation to the coded data, defining and describing the themes, and finally producing a synthesis of the results in this paper. The analysis was inductive and the structure of the initial coding was guided by the study aim. Data extracts related to the subject matter were identified, condensed, and coded. Subsequently, codes were organised in preliminary themes. These were reviewed and revised in dialogue with the uncondensed interview data, emerging into a final theme structure. Due to the manageable amount of data, specific analysis software was not used, and instead MS Word table could be used to keep the structure of the analysis. The analysis was based on the study participants' manifest statements. The analysis was performed by the lead author, who throughout the analysis process discussed the coding and the themes with the co-authors. The rest of the research team comprises a doctor, sociologist and psychologist, who all hold PhDs. Transcriptions were not sent to the informants.

Quotes from the study participants, which are presented in the results section, appear in italics. The word order has sometimes been changed and they have been shortened to make them easier to read. Some words have been removed to avoid identification.

Ethical considerations

The study has been approved by the Regional Ethical Review Board in Stockholm, reference number 2016/2105-31/5.

RESULTS

Description of the study population

Ten employees from three different offices expressed an interest in the study. They all met specified criteria and participated in the study. Informants' characteristics are summarized in table 1. The most frequently occurring chronic health conditions were long-term pain conditions, hearing loss, state of fatigue, as well as cardiovascular diseases. Four study participants reported one condition, two persons two conditions and the remaining four reported three or more. One person was on sick leave 25% of the time. Current work ability, compared to when it was at its best was high (median = 8) for all participants except one individual who indicated 2 on the scale from 0-10. In terms of forecasting their work ability in two years from now, in light of their current state of health, seven out of ten study participants reckoned they were sure that they could do their current job in two years if the same circumstances applied. Most of them considered their general state of health to be fairly good or acceptable, in spite of enduring restrictions for many years due to chronic health conditions. Work was considered to be important in many respects by all the study participants.

Insert table 1 here

General observations of factors related to continuation of work despite having a chronic health condition

The condensation of the interviewes produced 13 sub-themes which could further be grouped into 5 main themes. The sub-themes and main themes are presented in table 2 and a detailed presentation of example quotes and condensations are found in table 1 in the Appendix. Almost all of the study participants reported different types of adaptions as important factors to enable continuation of work. In the cases when adaptations of work hadn't taken place for one reason or the other, this was perceived as a problem. Further, it was also evident that the adaptations that had taken place in most cases came at the informants' own initiative. Although the study participants who had informed their employer about their health condition experienced support, most participants had chosen not to tell the employer. Work was perceived to promote health and as a way to reduce the impact of the chronic condition on quality of life, contributing to social cohesion and sense of purpose.

Insert table 2 here

Adaptation of work

Physical adaptation/aid, such as an adapted chair, an adjustment made to a computer workstation or getting their own separate office were mentioned as significant and important requirements for coping with work by the participants who had received this type of support. Several study participants had the perception that their employer was generous with providing physical aids if they were asked to do so. *"There are no problems getting help. I've always had good gadgets, a suitable chair, a Mousetrapper mouse and other devices to help me at my workstation. I'm eternally grateful for this."* - participant number 6

On the other hand, requests for aids were seldom made as they did not know what they should ask for, or they did not take the time to ask for it. As one of the respondents witnessed, the difficulty in getting an own office appeared to be a major obstacle to cope with work; *´"I find it extremely hard to concentrate and take in what I'm doing when there are several of us in an office"*- participant number 7

Modifications to work tasks resulted in fewer physical and mental demands. Examples of these modifications included fewer, but more specialised tasks, less customer contact, greater opportunity for own planning and, in some cases, less administration. Study participants who had adapted their work tasks also found it contributing to a better work–life balance. A change in the approach to work, based on work arrangements and suitable strategies, played a significant role in making work easier. Strategies which emerged included reorganizing work through introduction of flexitime and remote working as well as changing details such as varying posture while working and taking more frequent breaks. Two of the participants summarize both changes in work content and organization: *"I used to have greater responsibility in my job, but I felt that it got too much for me. I needed to change the tasks I did for the good of my health. This means that what works for me now is less responsibility, flexitime and I can manage my time better. I now enjoy my job too!"* - participant number 3 *"I don't need to go off sick. If my work allows it, I can work flexitime and go home earlier that day to rest. And I can now also plan my new work tasks better."* participant number 10

Although the participants found their employers to be supportive in general, they sometimes perceived no sense of urgency or well-established routines to go about adjusting work. One participant said that the process of getting adaptations made to both equipment and tasks was both complicated, time-consuming and aggravating the health condition: *"I would have avoided a great deal of stomach-ache if it hadn't been so complicated. Because there is actually mental stress involved as well. The whole thing took a good year. If it had gone a bit more quickly, I might have perhaps been in a better state than I am now."*- participant number 4

Life style

Physical activity and achieving work-life balance seemed to be important elements in terms of coping better with work increased well-being and maintained work ability. Work-life imbalance had prompted participants to make changes both at work and at home. Reducing working time, changing work content to both less demanding tasks and a decrease in amount of work were all ways of

attaining a better work-life balance. At home, some of the participants contemplated to hire a maid in order to be able to keep working. However, in one case, combining continued work at the agency and having a personal life seemed to be utopian: *"If I could modify my current work more, I think I can work at 67, because I think the job is fun. Now I just feel I'm working, going home, sitting and doing nothing and then I'm going to bed. I have no energy to exercise or invite friends, I can´t even think of it. But I've actually searched for another job, [laughing], I'm 63 years old and have searched for another job!*"- participant number 9

The end of the quote above illustrates how the notion of being older with a chronic health condition limits one's options in attaining work-life balance. The only resolve for some seemed to reach retirement age through part-time work. *"I'll be 63 soon. I have just started thinking about changing my work situation, maybe decrease working hours. I have not thought so before, but now the work takes so much energy and removes so much from my private life. I have no energy for my grandchildren nor my home, that's how it is."* – participant number 2

Physical activity and leisure activities were seen by many as ways to improve their health, both physical and mental, thereby enabling them to cope with work better. Leisure activity was a way of recharging the batteries and relaxing mentally, which seemed to be especially important for jobs involving a high level of mental stress. Conversely, in those cases where participants could not do any physical activity, they felt it contributed to a deterioration in their condition: *"One thing that's extremely important is that if I don't move about, I feel worse. A gym class and yoga are very important, just as important as the medication I take."* - participant number 10

Confidence in one's own abilities

Confidence was reflected in the study participants' own view of their condition, their acceptance of it and of a notion that they could influence their situation.

Acceptance of the state of their health was prominent among the interviewees. In spite of the restrictions which the disease entailed, most of them voiced the attitude "when life gives you lemons you make lemonade" and that their situation could have been worse. As one participant said: *"I'm almost constantly in pain, but you still learn to live with it somehow."* - participant number 9

Confidence in their own ability was perceived to be high, in spite of the tough conditions they endured, as one study participant put it: *"I couldn't keep doing the job I was doing then, when I was very ill, but when I got better, I wanted this job 100% and everyone said that I was mad... But I said that it was maybe something that I could definitely do. Otherwise, I might as well stop."* - participant number 7

Perceived adjustment latitude, in terms of the ability to change their work environment and work situation was a common feature. Overall, everyone felt that they could influence their situation in some way, if they wanted: *"If there's something wrong, I fix it. I don't just sit there and wait for someone else to do something."* - participant number 1

Motivation

Even though some participants encountered major difficulties due to their condition, they expressed a strong motivation to work and find solutions enabling them to continue their working life. Intellectual stimulus, meaning interesting, varied and challenging work tasks was regarded as important motivational factors. *"I'm lucky that I think I've got a job that I enjoy and find interesting. Otherwise, I would have gone home a long time ago and gone on sick leave."* - participant number 4 Just as important motivational factor was the social dimension of work: *"The job is extremely important. That's all there is to it. It's particularly important since I can enjoy the social aspect and be stimulated. It definitely means that I enjoy it a great deal."* - participant number 7 Thirdly, a sense of purpose and perceptions that the work they did benefited other people in difficult situations added to motivation and work satisfaction: *"… apart from working to pay for food and rent, work is*

definitely a major driving force for the social side of things, allowing you to feel that you can make a difference." - participant number 8

Supporting structures

Three supporting structures were identified as especially important to enable work despite a chronic health condition. These were support from superior, support from healthcare agencies and support from the social insurance fund.

Support from superiors was in most cases initiated only after the participant had made such a demand. The support consisted of organizing work and help with task shifting. Support from the company´s occupational health care provider was usually initiated by the employer and could include workplace interventions and a long-term rehabilitation plan. Study participants said that this support contributed to peace of mind, reduced anxiety and meant less time off sick. *"It was the prompt support I got from my boss and the company's healthcare team. I would say that it was completely down to the help I got and my own attitude that I could go back to work."* - participant number 6

Support from healthcare, which included different healthcare agencies, such as primary care, specialists and the occupational health care providers. Suitable medical and behavioural treatment, guided physical activity, physical treatment, knowledge of self-care and individual training, assistance with getting their own office and, to a certain degree, advice about job scope were some of the forms of support provided. Support from the healthcare agencies was considered to be just as vital for those who had received it as it was perceived as a major loss for those did had not. Some said that the company's occupational health care provider was hard to access and there was uncertainty regarding which type of support they could give. Others mentioned the contribution made by the company's healthcare team, with support for a change in behaviour in relation to achieving an activity balance. The participants said that contact with the regular health-care system was a private thing and cooperation with other supporting structures did not occur.

Support from the social insurance fund, in cooperation with the employer, seemed to some study participants to be a success factor in terms of finding a sustainable work situation. The cooperation was usually initiated by the insurance fund, but also by the employee. The support measures implemented were a long-term rehabilitation plan, work training, an opportunity to try out new work tasks and a gradual increase in working hours as the study participants' well-being improved. This helped these study participants to find a sustainable solution and achieve a balance in their working hours and tasks. One interviewee with recurring depression, for whom gradual return-to-work was incremental for success said that *"One of the best sources of support came from the social insurance fund and my employer, who didn't push too hard."* - participant number 10

DISCUSSION

The analysis process highlighted five main themes which influencing the continuation of the study participant's work-life, even when suffering from chronic health conditions. Major emphasis has been placed on describing factors which enable rather than hindering work. The study's results show with good consensus that factors enabling people to continue work while suffering a chronic health condition include adapting the work situation by complete or partial task-shifting, and provision of physical aids. Other themes found are adaptation of individual behaviour related to work and personal life. We also found that the study participants' view of their condition, their confidence in their own ability and motivation to work also were significant factors contributing to both wanting and being able to work. In this study, all participants felt that they could (if they wanted to) influence both their work situation and work environment to a certain degree, a finding that highlights the importance of agency and adjustment latitude.

Young et al (2005) criticized existing disability research for a tendency to only distinguish between those working and those out of work. Instead they propose that focus should be on differentiating

between those who are still transitioning to stable employment and those who have achieved vocational stability (13). The group studied here can all be said to have achieved vocational stability although some are still in a transitional stage. Most research on chronic health condition and work has a focus on the return to work process which happens early in a transitional stage.

Loisel et al. (2001) proposed a new paradigm for what they called disability prevention which in turn was defined as prolonged absence from work (14). Within this paradigm, causes to disability were found within four systems: the worker with the symptoms, the workplace, the healthcare system, and the compensation system. Our results show that these causes also seem to be evident when it comes to understanding reasons for vocational stability among those with chronic health condition. There are few studies on retention of workers with chronic disease at work (15) and the the main contribution of our study is that it, reassuringly enough, indicates that the same factors are in play for "return-to-work" as "stay-at-work" for employees with chronic disease.

Adaptation measures in the workplace offer relevant support with a positive impact on work ability (16,17). Employers are required by law to adapt working conditions to individuals' different physical and mental requirements (18). Possible reasons for failing to or delaying adaptations are frequent changes in management, ignorance of the issue among employers or study participants deciding not to mention any support requirements. Norstedt (2016) highlights difficulties which people who have hidden functional impairments have about mentioning this in their workplaces as their perceptions are that it can result in adverse consequences (19). Other studies have suggested that dialogue between the employer and employee and tailored work-related interventions may be helpful (7). This is confirmed in this study where the study participants who decided to talk to their employer about this matter have perceived that they have received good adaptations and support.

Lifestyle factors, such as physical activity, other leisure activities and behavioural changes in order to attain a good work-life balance seemed to play a significant role to stay at work despite health issues.

Physical activity in particular seemed to be a strong contributory factor in preventing further deteriorating of the participants' health, thereby improving their work ability, which tallies with the findings from other research studies (20).

Confidence in one´s own ability, often labelled "self-efficacy" or "coping", plays an important role in how individuals handle specific situations and is a determinant of their ability to influence their situation (21). The group of informants in the present study held a pragmatic view of their options in life and generally showed broad acceptance of their situation and a high level of confidence in their own ability. From an outsider's perspective, their health status did not seem to correlate with their perceived health or their self-reported work ability, highlighting the importance of a holistic approach tailored for the individual in order to retain workers with chronic disease while also maintaining productivity as proposed in previous research by others (15). Confidence in their own ability could also have been reinforced by the generally high level of adjustment latitude, which is well known to be associated to a lower risk of sick leave (22,23). It also aligns well with findings that expanded job control could be an important way to counteract the effect of decreased work ability on productivity (24).

Work motivation was high for all respondents, irrespective of health status. Although factors outside the workplace are important, our results suggest that it should be possible to develop and evaluate interventions aimed at maintaining work motivation, especially intellectual stimulation, social cohesion and sense of purpose. It seems important to help workers to maintain and cultivate a sense of coherence (25) at the workplace- where comprehensibility, manageability, and meaningfulness can contribute to the individual's health. In order to adapt work and maintain good social work environment, support, especially from superiors who contribute to creating opportunities for a longer working life and have a positive impact on workers' health (26,27). Some participant had received support from their superior in different ways, including finding suitable work tasks and adapting the way of working. Study participants who additionally received support from the

healthcare team and social insurance fund acknowledged that this was a further boosting factor. These results are in line with findings by others, that employers who adopt a structured approach to rehabilitation, cooperate with other agencies and have strong leadership functions have healthier employees (28). The study participants felt a general lack of support from the healthcare agencies, which is common among people with a chronic health condition (29). National guidelines indicate the importance of the support provided by healthcare agencies in terms of rehabilitation by offering continuous, coordinated care to people with a chronic health condition of working age, enabling them to cope with working life (30). Varekamp et al. (2006) also highlight the importance of the overlap between the provision of healthcare and rehabilitation geared towards working life (31).

Strengths and limitations

The trustworthiness of our study is primarily established through the credibility of the research methods we applied (32). The choice of semi-structured, in-depth interviews was to give greater scope for individuals to talk about their experiences and thoughts. It is regarded as a flexible and tried-and-trusted method for gathering data in the field of healthcare research (33). Interviews was held by the same author to ensure the same procedure. No field notes were taking during the interviews, to enable an active and attentively listening. Those were important steps to avoid self-understanding and interpretation and to achieve credibility in the findings. The study author's experience of working in the field of work-related rehabilitation and of working for the same employer as the study participants is mainly considered to be a strength as it made iterative questioning possible, i.e. ask follow-up questions and go into greater depth on various questions.

A limitation, both with regards to establishing credibility and transferability is that this study is limited to a small number of participants and a single employer. Aspects of work and chronic disease that could be present among employees in e.g. private sector or manual work have not been investigated in this study. In spite of the small numbers, the data material gathered is considered to

have achieved saturation, based on the study's questions. This was indicated by a large level of consensus and recurrently similar answers within the question areas. This was true in spite of different genders, professional categories and workplaces featuring in the study. Although the results should be interpreted with caution, they are consistent with previous research (3,5,7,8,31,34). The dependability and confirmability of this study was assured through close adhesion to COREQ guidelines (11) and detailed reporting of methodology in order to enable the reader to make a critical appraisal of our study.

CONCLUSIONS

This study found that factors enabling workers with chronic health conditions to work include early adaptation of the work situation ,life-style conditions, confidence, motivation and support. Similar to what has been shown in disability research , our results indicate that stakeholders such as the individual, the work place , the compensation system and the health care system, can support ability and motivation to work among those with a chronic health condition. There is a need for more studies of conditions enabling people with health conditions to remain in work. As this study only included civil servants, future studies should also focus on what enables work among manual workers with a chronic health condition.

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CONTRIBUTORSHIP STATEMENT

The study was conceived by Carina Hjärtström and Theo Bodin. The study protocol was developed by Carina Hjärtström, Annika Lindahl Norberg and Theo Bodin. The interviews were recorded, transcribed verbatim by Carina Hjärtström, and analysed by Carina Hjärtström under supervision from Annika Lindahl Norberg. The interpretation of the findings was done by Carina Hjärtström, Annika Lindahl Norberg, Gun Johansson and Theo Bodin. The first draft of the manuscript was done by Carina Hjärtström. All subsequent drafts were commented upon and revised by all authors. The submitted version of the manuscript was approved by all authors.

COMPETING INTERESTS

Carina Hjärtström works at the Swedish Public Employment Service. The employer was not involved in designing and analysing the study and had no influence over the study's conclusions. The other authors state that they have no conflicts of interest or objections.

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This study does not include any data that could be shared

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Table 1. Background information and characteristics of informants (n=10).

Sex	Men	2
	Women	8
Age	Median (range)	59,5 (51-63)
Educational level	High-school or lower	4
	University	6
Health status	Very poor	0
	Poor	0
	Reasonable	5
	Good	5
	Very good	0
Years with chronic health condition	> 5 years	2
	> 10 years	8
Most common chronic health conditions	Chronic pain condition	
	Hearing loss	
	Burnout/chronic fatigue	
	Cardiovascular disease	
Employment activity	Part-time	3
	Fulltime	7
Years at current employer	8 – 30 years	
Importance of work (1-10)	Median (range)	8(5-9)
Work ability (0-10)	Median (range)	8 (2-9)
Will be working at the same job in 2 years from now	No	0
	Don't know	3
	Yes, definitely	7

Table 2. Thematic analysis of factors enabling work despite chronic health conditions

Sub-theme	Main theme
Physical adaptation/aid Modifications to work tasks Changes in approach to work	Adaptation
Work–life balance Physical activity	Life-style
Acceptance Decision lattitude	Confidence in one's own abilities
Intellectual stimulus Social cohesion Sense of purpose	Motivation
Superiors Healthcare Social security	Support from others

Appendix

Interview guide

Background questions before interview

- Age
- Sex
- Professional title
- Length of education
- Duration of working hours
- Employed since year
- Diagnosis
- Debut year of desease

Semi-structured interview

1. Describe how a typical day at work looks like for you?
2. How does your health affect your work today?
3. What is it that makes it possible to work today?
4. Does your employer and colleagues know about your health situation?
5. Do you have or have you had any adjustment or support at work and in such cases what?
6. Do you miss any support today?
7. Do you see any need for support later on and in such cases what?
8. Do you feel that you can influence your work environment vs work situation?
9. How do you look at the opportunities for a long professional life?

Background questions after the interview

- Individual conditions/family situation
- Financial/economic incentives
- Healthcare contacts
- Sickness benefit

- How would you assess your general state of health?
    - Very good
    - Good
    - Reasonable
    - Poor
    - Very poor
- How important is work to you on a scale from 1-10?
    - 10 point VAS scale
        - 0 = not at all important
        - 10 = extremely important)
- Thinking about your health - do you think that you can still be doing your current job in two years?
    - No, I don´t
    - I don´t really know
    - Yes, I definitely will be
- Current work ability compared with lifetime best on a scale from 0 to 10?"
    - 10 point VAS scale
        - 0= Cannot work at all
        - 10=Work ability at lifetime best

Table I. Thematic analysis of factors enabling work despite chronic health conditions

Quotes from study participants	Condensation	Sub-theme	Main theme
"There are no problems getting help. I've always had good gadgets, a suitable chair, a Mousetrapper mouse and other devices to help me at my workstation. I'm eternally grateful for this." - participant number 6 *"I find it extremely hard to concentrate and take in what I'm doing when there are several of us in an office"- participant number 7*	No problems getting help when asking Problem to work undisturbed	Physical adaptation/aid	**Adaptation**
"I would have avoided a great deal of stomach-ache if it hadn't been so complicated. Because there is actually mental stress involved as well. The whole thing took a good year. If it had gone a bit more quickly, I might have perhaps been in a better state than I am now."- participant number 4 *And I have a good boss who has been keen to find suitable tasks for me to do. My bosses have actually shown that they want things to work for me during the years that I've got left."* *- participant number 10* *"I used to have greater responsibility in my job, but I felt that it got too much for me. I needed to change the tasks I did for the good of my health. This means that what works for me now is less responsibility, flexitime and I can manage my time better. I now enjoy my job too!" - participant number 3*	Modification, wish to get earlier New tasks – possibility for longer working life More flexibility, less responsibility, manage better	Modifications to work tasks	
"I don't need to go off sick. If my work allows it, I can work flexitime and go home earlier that day to rest. And I can now also plan my new work tasks better." participant number 10	Planning/own strategies reduces sick leave	Changes in approach to work	
"When I'm doing my hobby and producing something with my hands, it's a way for me to get rid of everything – clear my memory somehow, as it were." - participant number 1 *"Then, when I was given other work tasks to do I gained a better balance. I can do things in my spare time like go to the gym and do other nice things." - participant number 10* *"If I could modificate my current work more, I think I can work at 67, because I think the job is fun. Now I just feel I'm working, going home, sitting and doing nothing and*	Spare time activities reduces mental stress Modifications to work tasks benefits private life Desire for more possibilities/adjustments	Work–life balance	**Life-style**

then I'm going to bed. I have no energy to train or invite friends, I can´t even think of it. But I've actually searched for another job, [laughing], I'm 63 years old and have searched for another job! - participant number 9 *I'll be 63 soon. I have just started thinking about changing my work situation, maybe decrease working hours. I have not thought so before, but now the work takes so much energy and removes so much from my private life. I have no energy for my grandchildren nor my home, that's how it is* *"It´s a health benefit to go to work, despite bad health. I am soon getting cleaning service at home, because I can´t do it myself, it is an adjustment at home so I´ve got energy for work instead." – participant number 1*	Unbalance work/leisure time Adjustments at home		
"One thing that's extremely important is that if I don't move about, I feel worse. A gym class and yoga are very important, just as important as the medication I take." – participant number 10	Time and energy for training/rehabilitation	Physical activity	
"I'm almost constantly in pain, but you still learn to live with it somehow." - participant number 9 *"I couldn't keep doing the job I was doing then, when I was very ill, but when I got better, I wanted this job 100% and everyone said that I was mad... But I said that it was maybe something that I could definitely do. Otherwise, I might as well stop." - participant number 7*	Learn to live with pain Believe in own ability	Acceptance	**Confidence in one's own abilities**
"If there's something wrong, I fix it. I don't just sit there and wait for someone else to do something." - participant number 1	Can influence and control	Decision lattitude	
"I'm lucky that I think I've got a job that I enjoy and find interesting. Otherwise, I would have gone home a long time ago and gone on sick leave." - participant number 4	Work interesting	Intellectual stimulus	**Motivation**
"The job is extremely important. That's all there is to it. It's particularly important since I can enjoy the social aspect and be stimulated. It definitely means that I enjoy it a great deal." - participant number 7	Colleagues important	Social cohesion	
"... apart from working to pay for food and rent, work is definitely a major driving force for the social side of things, allowing you to feel that you can make a difference." - participant number 8	Meaningful, can make a difference	Sense of purpose	

"It was the prompt support I got from my boss and the company's healthcare team. I would say that it was completely down to the help I got and my own attitude that I could go back to work." - participant number 6	Early support at the employers initiative	Superiors	**Support from others**
"I've got a specialist doctor and feel supported. I feel lucky. Then, I've got a good healthcare centre. I'm insisting on working. My doctor says that it is indeed up to me to decide this." - participant number 2	Adequate health care contacts	Healthcare	
"One of the best sources of support came from the social insurance fund and my employer, who didn't push too hard." - participant number 10	Cooperation on rehabilitation	Social security	

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	6
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	6 + 7
Occupation	3	What was their occupation at the time of the study?	6 + 7
Gender	4	Was the researcher male or female?	6
Experience and training	5	What experience or training did the researcher have?	6 + 7
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	5
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	6
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	17
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	6
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	5
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	7
Non-participation	13	How many people refused to participate or dropped out? Reasons?	7 (NA)
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	6
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	6
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	8
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	6
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	7
Field notes	20	Were field notes made during and/or after the inter view or focus group?	6
Duration	21	What was the duration of the inter views or focus group?	6
Data saturation	22	Was data saturation discussed?	16
Transcripts returned	23	Were transcripts returned to participants for comment and/or	7

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	Table 2
Derivation of themes	26	Were themes identified in advance or derived from the data?	7
Software	27	What software, if applicable, was used to manage the data?	NA
Participant checking	28	Did participants provide feedback on the findings?	6
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	8-13
Data and findings consistent	30	Was there consistency between the data presented and the findings?	NA
Clarity of major themes	31	Were major themes clearly presented in the findings?	Table 2
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	NA

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.