UNIVERSITY OF AMSTERDAM

UvA-DARE (Digital Academic Repository)

Quality of Working Life of cancer survivors

Development and evaluation of a measurement instrument

de Jong, M.

Publication date
2016
Document Version
Other version
License
Other

Link to publication

Citation for published version (APA):
de Jong, M. (2016). *Quality of Working Life of cancer survivors: Development and evaluation of a measurement instrument*. [Thesis, fully internal, Universiteit van Amsterdam].

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, P.O. Box 19185, 1000 GD Amsterdam, The Netherlands. You will be contacted as soon as possible.

UvA-DARE is a service provided by the library of the University of Amsterdam (https://dare.uva.nl)

Download date:08 Nov 2026

Chapter 2

Quality of Working Life issues of employees with a chronic physical disease: a systematic review

M. de Jong, A.G.E.M. de Boer, S.J. Tamminga, and M.H.W. Frings-Dresen

J Occup Rehabil 2015, 25, 182-196

Abstract

Purpose

To assess issues that contribute to the Quality of Working Life (QWL) of employees with a chronic physical disease.

Methods

A systematic literature search was conducted using the databases PubMed, PsycINFO and EMBASE. Experiences and perceptions during the working life of employees with a chronic physical disease were extracted and synthesized into issues that contributed to their QWL. We organized these synthesized QWL issues into higher order themes and categories with qualitative data analysis software.

Results

From a total of 4044 articles identified by the search, 61 articles were included. Data extraction and data synthesis resulted in an overview of 73 QWL issues that were classified into 30 themes. The following five categories of themes were identified: 1) job characteristics with issues such as job flexibility and work-site access, 2) the social structure and environment containing issues about disclosure, discrimination, misunderstanding, and awareness by employers or colleagues, 3) organisational characteristics with issues such as requesting work accommodations, 4) individual work perceptions including issues about enjoyment and evaluating work or life priorities, and 5) effect of the disease and treatment including issues about cognitive and physical health, and work ability.

Conclusion

This systematic review offers an extensive overview of issues that might contribute to the QWL of employees with a chronic physical disease. This overview may function as a starting point for occupational support, such as monitoring and evaluating the QWL of employees with a chronic physical disease during return-to-work and work continuation processes.

Introduction

An increasing number of people are diagnosed with a chronic disease. Causes are an ageing population, an increased survival rate in individuals with diseases and a continuing high prevalence of lifestyle risks [1,2]. This trend inevitably influences the current labour market since employees with a chronic disease are less likely to be employed [3]. This is unfortunate for employees with a chronic disease since having a work life contributes to an improved Quality of Life [4-6]. Furthermore, work provides financial resources which contribute to higher satisfaction with the financial situation and social well-being [7] and work enables employees with a chronic disease to regain a sense of normality, self-concept and identity [8]. For these reasons, attention must be paid to preventing employees with a chronic disease from becoming unemployed against their will.

Previous research on employees with a chronic disease focused mainly on work outcomes such as productivity, absence or work loss [9-11]. How employees with a chronic disease experience their employment and whether these experiences influence work continuation has seldom been taken into account. In a study of Detaille et al. [12] it was found that experiences such as support, benefits and ability to cope with their illness were issues that enabled employees with a chronic physical disease to continue working. However, this study reported only a few experiences of employees with rheumatoid arthritis, diabetes mellitus and hearing loss. To compile an extensive overview of issues that contribute to work continuation in employees with a chronic physical disease in general, it is essential to clearly state which specific issues throughout work life are important to them.

The concept of Quality of Working Life (QWL) encompasses the subjective work experiences of working individuals [13]. Individuals' experiences in work life are comprised of work factors such as job and organisational characteristics, factors within the social environment and individual work perceptions [14-16]. Some of these experiences contribute to employees' rating of the quality of their work [13] but we do not know what the contributing issues are exactly. The area of research that is interested in individuals' work life experiences focuses on QWL which is important to work continuation because a high QWL is associated with lower levels of turnover intentions in 'healthy' employees [17]. Previous research focused mainly on the QWL of 'healthy' employees or specific occupational groups [18,19]. However, issues contributing to QWL are specific for occupational groups and for employees with a chronic physical disease. For instance, the Brooks Quality of Nursing Work Life Survey (BQNW) is influenced by specific work-

related issues such as 'Health Care Policy' and 'Patient Demand on System' [20], which are not relevant for employees in other job areas. The same applies to the Work-Related Quality of Life (WRQoL) scale [13] that is developed for healthcare workers in general or the Self Evaluation of Working Life Quality (SEQWL) [21] for employees in general. These questionnaires do not contain issues that are important to employees with a chronic physical disease, such as the effect of the disease or the treatment on their QWL [22]. Therefore, it is important to assess these issues too and study how employees with a chronic physical disease experience and perceive their employment and what issues contribute to their QWL. This overview may function as a starting point for occupational support and the prevention of unemployment of employees with a chronic physical disease. The aim of this systematic review is to assess issues that contribute to the QWL of employees with a chronic physical disease.

Methods

To structure our systematic review, and therefore increase its transparency, where possible we used the checklist of Preferred Items for Systematic Reviews (PRISMA statement) [23].

Search strategy

In January 2014 we conducted an electronic search for articles in the databases PubMed, PsycINFO and EMBASE. This search was restricted to articles on human studies that were published between January 1988 and January 2014, and to articles that were written in English, German or Dutch. We used the following main subject headings combined with Boolean operators: employment AND chronic AND quality of working life OR work retention. The search strategy was supplemented with text words and synonyms for employment, chronic physical diseases, quality of working life, and work retention (see Appendix 1 in Electronic supplementary material for the search strategies of the different databases).

Article selection

We selected articles using the following inclusion criteria: a) the study included employees with a chronic physical disease, b) the study included employees who were active in the labour market, and c) the study evaluated issues that contributed to QWL. Article selection was performed in three steps. First, a sample of 10% of the articles were independently evaluated by two authors (MdJ and AdB) based on title and abstract. Subsequently, the articles that caused doubt were discussed

with the aim of reaching a consensus. The other 90% were reviewed by the first author (MdJ) and, if necessary, another author (AdB) was consulted. In the case of disagreements, a third author (MF) was able to provide advice or it was decided to review the article based on the full text. In the second step, again 10% of the articles that were already selected based on their title and abstract were independently evaluated, only now based on their full content, by two authors (MdJ and ST). In the case of disagreements, the article was discussed during a consensus meeting. The other 90% were reviewed by the first author (MdJ), and in cases of doubt another author (AdB) was consulted. In cases of disagreement, a third author (MF) provided advice. In the third and final step, the first author (MdJ) reviewed the reference list of the selected articles in order to identify other relevant studies.

Data extraction and synthesis

Description of the article, study design and participants characteristics were extracted from each study by the first author (MdJ) and inserted into a pre-designed data extraction form. The outcome measures included all issues that contribute to QWL. Subsequently, another author (ST) checked the data extraction for 10% of the studies. Consensus was reached by discussion and, if needed, with the assistance of a third author (AdB). To synthesize the outcome measures within the articles, all the data were coded using the MAXQDA (Verbi Software, GmbH Marburg 2007) qualitative data analysis software package. Initially, the first author (MdJ) administered open codes to the extracted data using MAXQDA. The labels of these open codes represented the text as closely as possible. To improve inter-observer reliability, another author (ST) was involved and issues were discussed until consensus was reached.

Methodological quality assessment

The methodological quality of all included studies was assessed through two checklists developed by Taylor et al. [24]. One checklist was used for qualitative studies and another for quantitative studies. For the purpose of this study we made a few adjustments to the quality assessment features. For instance, the original checklist contained a question about the number of facilities involved in the included study. However, this was irrelevant for the purposes of our review, and the criterion was therefore removed. These adjustments resulted in a maximum score of 5 for the qualitative studies, and a maximum score of twelve for the quantitative studies. The first author (MdJ) assessed the methodological quality of all included studies, and 10% of these articles were checked by another author (ST). In cases of disagreement, the criteria were discussed during a consensus meeting and the help of a third author (AdB) was enlisted if necessary.

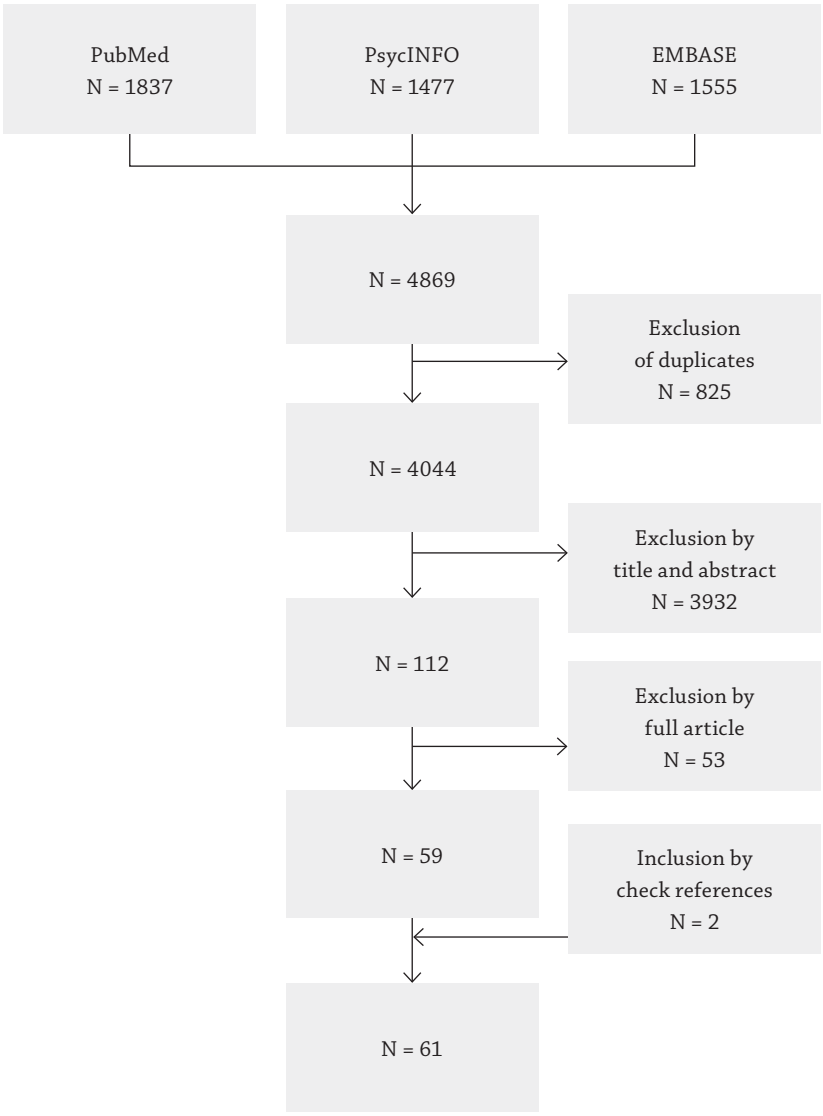

Figure 1. Flow-chart of the inclusion process

Results

Literature search

The search strategy yielded 4044 references after removing 825 duplicates (Fig. 1). Based on title and abstract, 3932 articles were excluded and 112 articles were

checked for the full text. After applying the inclusion criteria to these full text papers, 59 articles were initially included. Various reasons led to the exclusion of articles. For instance, we excluded articles that studied individuals with a chronic mental disease. Furthermore, some studies did not include employees, but individuals with a chronic physical disease that had retired, or they focused only on return-to-work and not on work continuation. Additionally, some articles did not discuss QWL issues but other outcomes such as health status, disability, employment outcomes and duration of sick leave. Through the reference list of the included articles we eventually included two more articles that were selected based on their full text, leading to a total of 61 articles [12,22,25-72] [8,73-82] that were included in this systematic review.

Study characteristics

Table 1 contains the references of the included articles and their country of origin. Furthermore, it summarizes the study designs and the participants' characteristics. The synthesized QWL issues are displayed in Appendix 2. Approximately 15% of the studies were conducted before 1999, while the remaining articles were all published in the last 14 years. Most of the articles were conducted in the USA (38%), the Netherlands (18%), the UK (12%) and Canada (10%), The studies included several chronic physical diseases but the most common were various types of cancer (41%) and rheumatic diseases (21%). Other articles studied employees with asthma and COPD, multiple sclerosis or other neuromuscular diseases, ankylosing spondylitis, diabetes mellitus, scleroderma, postpoliomyelitis syndrome, human immunodeficiency virus, hearing loss, and stroke or other myocardial diseases.

Methodological quality appraisal

The scores on the methodological quality appraisal were presented with the objective of increasing transparency by providing relevant background information of the included studies. Thirty-one studies were assessed according to the methodological criteria for qualitative studies (Table 2) and the other 30 articles were assessed according to the methodological criteria for quantitative studies (Table 3). The average score for qualitative studies was 3.25 out of a maximum score of 5 points, and 28 studies failed to meet the criterion 'use of supportive quantitative methods'. The average score for studies with a quantitative research design was 7.87 out of a maximum score of 12 points. From these studies, a total of 14 did not report on all (missing) participants and therefore failed to meet this criterion.

Issues of QWL

The analysis of the included articles resulted in an overview of 73 issues that contributed to the QWL of employees with a chronic physical disease, which were then classified into 30 themes and five categories (Table 4). We will now elaborate the general findings of QWL issues derived from these five categories.

- *Job characteristics*

  The content of the job, such as job demands and work hours, may be too excessive for employees with a chronic physical disease. This might lead to a demotion in the job function which causes a change in the work role and may therefore negatively contribute to QWL. In addition, the work environment, with possible workplace barriers and hazards, may contribute to a negative work experience. Employees with chronic physical diseases often experience a lack of promotion opportunities due to their disease but stay at the organisation due to the financial benefits the job brings with it, and many employees mentioned this financial independence. Furthermore, some jobs are flexible and enable employees to plan their work in a way that is beneficial to them, in spite of their limitations, and therefore contribute to their QWL.

Table 1. Study characteristics of the included articles (N = 61)

Reference, country of origin	Study design	Participants characteristics
Berry [25], USA	QL	Genitourinary cancer 12 participants 33% females Mean age: 52 (SD = NR, range in years = 32-69)
Boudrez et al. [26], Belgium	QN	Myocardial infarction 230 participants NR Mean age: 57.5 (NR, NR)
Carter [27], USA	QL	Breast cancer 1 participant 100% females Mean age: 54 (NR, NR)
Roessler et al. [28], USA	QL	Multiple sclerosis 5 participants 60% females NR (NR, 38-51)
Rumrill et al. [29], USA	QL	Diabetes mellitus 4 participants 50% females Mean age: 43 (NR, 32-55)

Roessler et al. [30], USA	QL	Various types of chronic diseases 41 participants 68% females Mean age: 42 (9.68, 23-66)
Lerner et al. [31], USA	QN	Angina pectoris 40 participants 75% females Mean age: 55.2 (7.0, >18)
Maunsell et al. [32], Canada	QL	Breast cancer 13 participants 100% females NR (NR, NR)
Dyck et al. [33], Canada	QL	Multiple sclerosis 54 participants 100% females NR (NR, 25-49)
Mancuso et al. [34], USA	QL	Rheumatoid arthritis 25 participants 96% females Mean age: 50 (NR, NR)
Barlow et al. [35], UK	QN	Ankylosing Spondylitis 133 participants 27% females Mean age: 49 (NR, 16-65)
Bradley et al. [36], USA	QN	Various cancer types 253 participants 46.6% females Mean age: 61.9 (8.2, 35-75)
Allaire et al. [37], USA	QN	Various types of rheumatic diseases 121 participants 81% females Mean age: 50.21 (9.19, 24-66)
Detaille et al. [12], The Netherlands	QL	Rheumatoid arthritis (RA), diabetes mellitus (DM), hearing loss (HL) RA: 21, DM: 23, HL: 25 participants RA: 62%, DM: 48%, HL: 64% females Mean age: RA: 50 (NR, 23-65), DM: 45, (NR, 41-57), HL: 49,(NR, 36-58)
Howden et al. [38], UK	QL	Rheumatoid arthritis 3 participants 33.3% females Mean age: 60 (NR, 52-70)
Mancuso et al. [39], USA	QN	Asthma 102 participants 76% females Mean age: 39 (10, NR)
Andries et al. [40], The Netherlands	QN	Neuromuscular disorders (NMD), multiple sclerosis (MS), asthma 3 articles NMD: 50%, MS: 62%, asthma: 58% females NR, (NR, <25 – 45)

Table 1. *(continued)*

Reference, country of origin	Study design	Participants characteristics
Backman [41], Canada	QN	Rheumatoid arthritis NR articles NR NR (NR, NR)
Johnson et al. [42], USA	QL	Multiple sclerosis 16 participants 87.5% females Mean age: 44 (NR, 20-62)
Boot et al. [43], The Netherlands	QN	Asthma and COPD Asthma: 118 participants, COPD: 71 participants Asthma: 48.3%, COPD: 35.2% females Mean age: Asthma: 44.5 (10.5, NR) COPD: 50 (9, NR)
De Croon [44], The Netherlands	QN	Rheumatoid arthritis 78 participants 66% females Mean age: 46 (NR, 24-61)
Gignac [45], Canada	QL	Arthritis 492 participants 77.9% females Mean age: 51 (9.3, NR)
Main et al. [22], USA	QL	Various types of cancer 28 participants 50% females NR (NR, NR)
Bouknight et al. [46], USA	QN	Breast cancer 416 participants 100% females Mean age: 50.8 (7.5, 30-64)
Burton et al. [47], USA	QN	Arthritis 2469 participants 83% females Mean age: 46.2 (NR, NR)
Detaille et al. [48], The Netherlands	QL	Diabetes mellitus 23 participants 48% females Mean age: 45 (NR, 41-57)
Medin et al. [49], Sweden	QL	Stroke 6 participants NR NR (NR, <65)
Varekamp et al. [50], The Netherlands	QN	Various types of chronic diseases 9 articles NR NR (NR, NR)

Kennedy et al. [51], UK	QL	Various types of cancer 29 participants 93% females Mean age: 53 (NR, NR)
Lacaille et al. [52], Canada	QL	Various types of arthritis 36 participants 86% females NR (NR, 18-65)
Nachreiner et al. [53], USA	QL	Various types of arthritis 36 participants 86% females NR (NR, 18-65)
Nilsson et al. [54], Sweden	QL	Rheumatoid arthritis 10 participants 60% females Mean age: 51 (NR, 32-59)
Taskila et al. [55], Finland	QN	Various types of cancer 12 articles NR NR (NR, NR)
Amir et al. [56], UK	QL	Various types of cancer 41 participants 58.5% females NR (NR, 26-55)
Steiner et al. [57], USA	QN	Various types of cancer 92 participants 60% females NR (NR, NR)
Varekamp et al. [58], The Netherlands	QN	Various types of chronic diseases NR articles NR NR
Crockatt et al. [59], USA	QN	Arthritis NR articles NR NR (NR, NR)
Frazier et al. [60], USA	QL	Gynaecologic cancer 73 participants 100% females NR, (NR, <59)
Messmer Uccelli et al. [61], Italy	QN	Multiple sclerosis 1141 participants 67% females Mean age: 41.8 (9.2, 21-67)
Feuerstein et al. [62], USA	QN	Various types of cancer 45 articles NR NR (NR, NR)

Table 1. *(continued)*

Reference, country of origin	Study design	Participants characteristics
Johnsson et al. [63], Sweden	QL	Breast cancer 16 participants 100% females Mean age: 49 (NR, 44-58)
Tiedtke et al. [64], Belgium	QN	Breast cancer 6 articles 100% females NR (NR, 20-88)
Varekamp et al. [65], The Netherlands	QN	Various types of chronic diseases 122 participants 75% females Mean age: 45.6 (8.7, NR)
Banning [66], UK	QN	Various types of cancer 10 articles NR NR, (NR, NR)
Culler et al. [67], USA	QL	Stroke 10 participants 70% females NR (NR, NR)
Hartke et al. [68], USA	QL	Stroke 12 participants 33% females Mean age: 51 (NR, 31-67)
Lindbohm et al. [69], Finland	QN	Various types of cancer 2376 participants 70% females NR (NR, NR)
Van der Meer et al. [70], The Netherlands	QL	Rheumatoid arthritis 14 participants 86% females Mean age: 47 (2.9, 23-58)
Mehnert [71], Germany	QN	Various types of cancer 64 articles NR NR (NR, NR)
Ten Katen et al. [72], The Netherlands	QL	Postpoliomyelitis syndrome 17 participants 70.6 % females Mean age: 48.5 (10.7, 29-62)
Blinder et al. [73], USA	QL	Breast cancer 23 participants 100% females Mean age: 57 (NR, 29-63)
Honan et al. [74], Australia	QN	Multiple sclerosis 189 participants 74% females NR (NR, 26-65)

Høyer et al. [75], Sweden	QN	Breast cancer 505 participants 100% females Mean age: 52.2 (7.5, 25-62)
Lindbohm et al. [76], Finland	QN	Various types of cancer 1449 participants 70% females NR (NR, 25-64)
McGrath et al. [77], Australia	QL	Haematological cancer 50 participants 48% females NR (NR, NR)
Verhoef et al. [78], the Netherlands	QN	Various types of chronic diseases 125 participants 62% females Mean age: 41.9 (10.4, 18-61)
Antao et al. [79], Canada	QN	Breast cancer, multiple sclerosis, human immunodeficiency virus 80 articles NR NR (NR, NR)
Grunfeld et al. [80], UK	QL	Prostate cancer 50 0% females Mean age: 59 (5.81, 18-65)
Mendelson et al. [81], USA	QL	Scleroderma 32 participants 82% females Mean age: 47.3 (8.4, NR)
Österholm et al. [82], Sweden	QL	Arthritis 9 participants 0% females Mean age: 48 (NR, 31-62)
Wells et al. [8], UK	QN	Various types of cancer 25 articles NR NR (NR,NR)

QL; qualitative; QN = quantitative; NR = not recorded

- *Social structure and environment*

  Support from colleagues, employers, society, patient organisations, medical practitioners, specialists and vocation counsellors contribute to the QWL of employees with a chronic physical disease. In organisations without a positive social climate, discrimination and stigmas may lead employees to experiencing negative encounters with co-workers and supervisors. Consequently, employees

with a chronic physical disease may decide not to provide disclosure, which may result in little awareness and unrealistic expectations by employers. These negative reactions may affect the QWL of these employees.

- *Individual work perceptions*
  How employees with a chronic physical disease feel about their current work may contribute to their QWL. These individual work perceptions consist of job satisfaction, work commitment, values and motivation. Having little appreciation or self-competence may negatively contribute to QWL, while feelings of accomplishment and the importance of having a job are a positive contribution. Employees with a chronic physical disease often experience negative feelings such as vulnerability or guilt towards the organisation but work also provides work identity and meaning to life in general. Due to work some individuals might experience work-home interference which could lead to evaluating work-life balance and altered work priorities.

- *Organisational characteristics*
  Some issues of QWL lie at the organisational level such as the company policies and procedures. Some employees with a chronic physical disease find the communication at the organisational level very difficult or impossible. They are afraid to request work accommodations, or do not know how to. They do not participate in the decision-making and therefore experience low QWL.

- *Effects of the disease and treatment*
  The final category focuses specifically on the effect of the disease and its treatment on the work life of the employees with a chronic physical disease. Their health comprises, amongst other things, cognitive, mental and physical aspects which are influenced by the disease and therefore are a burden at work. For example, employees might experience extreme fatigue, difficulties with concentration, distress, or impaired mobility. The effect of the disease and treatment influences the employees' ability to work and can therefore negatively contribute to QWL.

Discussion

The aim of this study was to assess issues that contribute to the QWL of employees with a chronic physical disease. A systematic search in three literature databases and a reference check yielded 61 articles about employees with a

chronic physical disease. Their experiences and perceptions of working life were extracted and synthesized into issues that contributed to their QWL. This resulted in an overview of 73 QWL issues that were classified into 30 themes. The following five categories of themes were identified: 1) job characteristics with issues such as job flexibility and work-site access, 2) the social structure and environment containing issues about disclosure, discrimination, misunderstanding and awareness by employers or colleagues, 3) organisational characteristics with issues such as requesting work accommodations, 4) individual work perceptions, including issues about enjoyment and evaluating work or life priorities, and 5) effect of the disease and treatment, including issues about cognitive and physical health, and work ability.

Strengths and limitations

The strength of this systematic review was its explorative nature, both in qualitative and quantitative studies, enabling us to compile an extensive and detailed overview of issues that contributed to QWL of employees with a chronic physical disease. Firstly, by including different chronic physical diseases we broadened the overview about the QWL of this group of employees. Secondly, by introducing categories and themes to classify the large number of extracted QWL issues, we were able to structure the overview. A limitation of this study might be our choices for search terms, we may have overlooked important elements of the concept or studies that could have contributed to our overview of QWL issues. The process of synthesizing QWL issues from the selected articles might also be considered a limitation since none of these articles actually labelled the experiences and perceptions of these employees as contributors to QWL as such. We labelled the experiences and perceptions of these employees as contributors to QWL based on previous literature about the QWL of 'healthy' employees [13-15,18]. However, our studies classification in neatly arranged categories and themes might also be considered a strength, since to the best of our knowledge studies about the QWL of employees with a chronic physical disease do not exist. We therefore contributed to the literature of QWL by suggesting which issues might be important to this construct.

Methodological considerations

We assessed the methodological quality of the selected articles by assigning points and total scores based on two existing checklists [23]. Because our search was explorative and our aim was to provide an extensive overview, we did not weight these scores but treated the outcomes of all included articles equally. However, the scores on the methodological quality appraisal were presented

Table 2. The methodological quality of included articles with a qualitative research design (N = 31)

Criteria	Description of the sampling items: where, who and how?		Description of data collection items: where, when and how?		Was there independent inspection of the data analysis?		Was there a clear description of how the data analysis was done?		Did they make use of supportive quantitative methods?		
Outcome	≤ 1 item	≥ 2 items	≤ 1 item	≥ 2 items	≤ 1 rater, and/ or no check	≥ 1 rater, and/ or check	No	Yes	No	Yes	
Possible Score	0	1	0	1	0	1	0	1	0	1	**Total score**
Articles											
Berry [25]	1		0		0		1		0		2
Carter [27]	0		0		0		1		0		1
Roessler et al. [28]	1		0		0		0		0		1
Rumrill et al. [29]	1		0		0		0		0		1
Roessler et al. [30]	1		0		0		1		1		3
Maunsell et al. [32]	1		1		0		1		0		3
Dyck et al. [33]	1		1		0		1		1		4
Mancuso et al. [34]	1		1		1		1		0		4
Detaille et al. [12]	1		0		1		1		0		3
Howden et al. [38]	1		1		1		1		0		4
Johnson et al. [42]	1		1		1		1		0		4
Gignac [45]	1		1		1		1		1		5
Main et al. [22]	1		1		1		1		0		4
Detaille et al. [48]	1		1		1		1		0		4
Medin et al. [49]	1		1		1		1		0		4
Kennedy et al. [51]	1		1		0		1		0		3

Lacaille et al. [52]	1	0	1	1	0	3
Nachreiner et al. [53]	1	1	0	1	0	3
Nilsson et al. [54]	1	1	1	1	0	4
Amir et al. [56]	1	0	1	1	0	3
Frazier et al. [60]	1	0	1	1	0	3
Johnsson et al. [63]	1	0	1	1	0	3
Culler et al. [67]	1	0	1	1	0	3
Hartke et al. [68]	1	1	1	1	0	4
Van der Meer et al. [70]	1	1	1	1	0	4
Ten Katen et al. [72]	1	1	1	1	0	4
Blinder et al. [73]	1	0	1	1	0	3
McGrath et al. [77]	1	1	1	1	0	4
Grunfeld et al. [80]	1	1	1	1	0	4
Mendelson et al. [81]	1	0	0	1	0	2
Österholm et al. [82]	1	1	1	1	0	4

Table 3. The methodological quality of included articles with a quantitative research design (N = 30)

Criteria	Population size		Clear description of what the research question/ hypothesis is?				
Outcome	< 100 or not reported	≥ 100	No	Yes	Systematic review/ meta-analysis RCT	Cohort study	Case-control study
Possible Score	0	1	0	1	7	6	5
Articles							
Boudrez et al. [26]	1		0				
Lerner et al. [31]	0		1				
Barlow et al. [35]	1		1				
Bradley et al. [36]	1		1				
Allaire et al. [37]	1		1				
Mancuso et al. [39]	1		1				
Andries et al. [40]	1		0				
Backman [41]	0		0				
Boot et al. [43]	1		1				
De Croon et al. [44]	0		1				
Bouknight et al. [46]	1		1				
Burton et al. [47]	1		1				
Varekamp et al. [50]	0		1				
Taskila et al. [55]	0		1				
Steiner et al. [57]	1		1				
Varekamp et al. [58]	0		0				
Crockatt et al. [59]	0		1				
Messmer Ucelli et al. [61]	1		1				
Feuerstein et al. [62]	0		1				
Tiedtke et al. [64]	0		1				
Varekamp et al. [65]	1		1				
Banning [66]	0		1				
Lindbohm et al. [69]	1		1				
Mehnert [71]	0		1				
Honan et al. [74]	1		1				

Type of study; hierarchy of evidence				Clear analysis plan?		Was there reporting on all (missing) participants?		Was there a clear description of what the results were?		Total score
Cross-sectional study	Expert opinion/ case-history/ descriptive	review/ before -and- after study	Anec-dotal	No	Yes	No or not repor-ted	Yes	No	Yes	
4	3	2	1	0	1	0	1	0	1	
3				1		1		1		7
3				1		1		1		7
3				1		1		1		8
3				0		1		1		7
3				1		1		1		8
3				1		1		1		8
2				0		0		0		3
2				0		0		0		2
3				1		1		0		7
3				1		1		1		7
5				1		1		1		10
3				1		1		1		8
7				1		0		1		10
2				0		0		1		4
5				1		1		1		10
2				0		0		1		3
2				0		0		1		4
3				1		0		1		7
7				1		0		1		10
7				1		0		1		10
6				1		0		1		10
7				1		0		1		10
5				1		1		1		10
7				1		0		1		10
3				1		1		1		8

Table 3. *(continued)*

Criteria	Population size		Clear description of what the research question/ hypothesis is?				
Outcome	< 100 or not reported	≥ 100	No	Yes	Systematic review/ meta-analysis RCT	Cohort study	Case - control study
Possible Score	0	1	0	1	7	6	5
Articles							
Høyer et al. [75]	1		1				
Lindbohm et al. [76]	1		1				
Verhoef et al. [78]	1		1				
Antao et al. [79]	0		1				
Wells et al. [8]	1		1				

Type of study; hierarchy of evidence				Clear analysis plan?		Was there reporting on all (missing) participants?		Was there a clear description of what the results were?		Total score
Cross-sectional study	Expert opinion/ case-history/ descriptive	review/ before-and-after study	Anec-dotal	No	Yes	No or not repor-ted	Yes	No	Yes	
4	3	2	1	0	1	0	1	0	1	
5				1		1		1		10
4				1		1		1		9
3				1		1		1		8
7				1		0		1		10
7				1		0		1		11

Table 4. QWL issues of employees with a chronic physical disease, organized in categories and themes

Themes	Issues
Job characteristics	
Job content	- Job demands - Job responsibilities/duties - Work hours - Work tasks
Job duration	- Job certainty/job loss
Work roles	- Demotion - Self-employment
Job stress	- Workload - Work pressure
Job benefits	- Financial benefits
Job autonomy	- Job flexibility
Job accommodations	- Time adjustments - Workplace adjustments
Work conditions	- Temperature/obstacles/noise
Work environment	- Work-site access - Workspace - Working at home - Workplace barriers - Hazards
Future opportunities	- Promotion opportunities - Career path/mastery
Social structure and environment	
Social network	
Social climate	- Relaxed/positive atmosphere - Discrimination/stigma
Support	- Emotional support (other/not specified) - Supportive medical practitioners, specialist/vocational counsellors - Support of society and patient organisations - Supportive colleagues - Supportive employer
Assistance	- Assistance from colleagues - Advice from supervisor - Assistance from medical practitioners, specialist/vocational counsellors
Privacy (maintaining)	- Disclosure
Interpersonal/ professional relationships	- Relationship with employer - Relationship with colleagues
Communication	- Feedback - Negotiation with employer/others - Personal interactions - Socialization - Making social comparisons

Reactions	- Attitudes from customers/colleagues/employer - Awareness of employer/colleagues - Expectations of employer/colleagues - Acceptance of the disease by employer/colleagues - Misunderstanding of employers/colleagues
Individual work perceptions	
Job satisfaction	
Work commitment	- Commitment to the organisation - Discipline
Work values	- Connecting to the community - Organisation fit - Meaning of work
Work motivation	- Intrinsic reinforcement/Intention to work
Feelings about current work	- Appreciation - Dependence/independence - Enjoyment - Importance i.e. evaluating work/life priorities - Work identity - Recognition by the organisation/employer - Responsibility - Personal growth in work life - Accomplishment - Vulnerability - Self-confidence - Self-esteem/worth - Self-competence/adequacy
Emotional challenges	- Fear of job loss/work-related failure - Feelings of guilt towards the organisation
Organisational characteristics	
Organisational climate	
Communication on the organisational level	- Requesting/discussing work accommodations - Participation in decision making
Company policies and procedures	- Discretion
Effect of the disease and treatment	
Job performance	- Job productivity
Work limitations	- Work ability/employability
Health	- Cognitive/mental health - Physical/functional health - Social health

with the objective of increasing transparency by providing relevant background information of the included studies. The average scores of the quantitative and qualitative studies seemed reasonable and valid based on recommendations for assessing the quality of studies from other research. The studies with a qualitative design provided a clear exposition of methods, data collection and analysis which is important in assessing the validity of qualitative research [83]. However, a point of caution is that some studies with a qualitative study design scored no points on the criterion 'independent inspection of the data', which implies that one person within the study analysed or interpreted the data and the results might be more prone to subjective interpretation, influencing the reliability of the results.

Between the studies with a quantitative study design less variation existed in the methodological quality assessment. Most of the studies scored 7 or 10 out of the maximum 12 points, except for the descriptive and narrative reviews, which scored significantly lower than the other articles with quantitative study designs. This is due to the lack of information in some articles. For instance, descriptions of the source of the results were missing, which makes it impossible to check these results and assess reliability.

QWL issues

In this systematic review we presented an extensive overview of issues that contribute to the QWL of employees with a chronic physical disease. As expected, it resulted in not only generic issues such as the items in the subscales of the Work-Related Quality of Life (WRQoL) scale [16] or job-specific items as in the Brooks Quality of Nursing Work Life Survey (BQNW) [20], but also more disease-specific issues that contributed to QWL. For instance, the WRQoL subscales consist of items that measure job- and career satisfaction, general well-being, home-work interface, stress at work, control at work and working conditions [16]. Conversely, the BQNW is influenced by specific work-related factors such as 'Health Care Policy' and 'Patient Demand on system' [20], which are relevant factors to nurses but not to all employees with a chronic physical disease. Adding to the generic and job-specific issues, this review contributes to the existing QWL literature by including disease-specific issues such as evaluating life priorities, disclosure and discrimination, acceptance, and misunderstanding and awareness by employers or colleagues.

By introducing other QWL issues to the research field, we expanded the existing definitions of QWL. Previous definitions referred to QWL in 'healthy' employees

as 'pursuing goals and reducing the gap separating the individual from these goals' [84] or 'employee satisfaction with a variety of needs through resources, activities, and outcomes stemming from participation in the workplace' [85]. In this review we introduced the importance of the experiences and perceptions of employees with a chronic physical disease. Some of the experiences of these employees, about the categories job characteristics, social structure and environment, organisational characteristics or the effects of the disease and treatment contain issues that might contribute to their QWL (e.g. having job flexibility). Also their individual work perceptions, about work commitment, values, motivation or meaning of work might contribute to their QWL. Therefore, this review contributes to the definition of QWL by emphasizing on the importance of experiences and perceptions of employees with a chronic physical disease and which issues contribute to their QWL.

The concept of QWL

Our concept of QWL differs from other concepts and questionnaires such as the Work Limitations Questionnaire (WLQ) [86] or the Work Role Functioning Questionnaire (WRFQ) [87] which both measure impaired physical, functional and emotional work functioning. Although QWL might be influenced by physical, functional and emotional work functioning, it encompasses also other experiences and perceptions at work such as work satisfaction and the meaning of work. The Dutch questionnaire Vragenlijst Beleving en Beoordeling van Arbeid (VBBA) [88] does refer to perceptions at work. It measures the psychosocial workload and contains a scale about feelings of enjoyment while at work. However, this questionnaire does not specifically focus on experiences or perceptions of employees with a chronic physical disease. In sum, the existing questionnaires do not measure our complete concept of QWL, this review contributes by providing an overview with relevant aspects to measure.

Practical relevance

This systematic review may function as a starting point for occupational support and the prevention of unemployment of employees with a chronic physical disease. As stated, it contributes to the occupational health services because it offers a practical overview for health professionals or Human Resource Management (HRM) staff members. These officers are often involved to some extent during the return-to-work processes or work continuation of employees with a chronic physical disease, and this overview shows which QWL issues are important and which are potentially problematic to these specific employees. Therefore, this review enables health professionals or HRM staff to monitor and evaluate the QWL

of employees with a chronic physical disease, and increase their awareness of this topic. Ultimately, this leads to better support for employees with a chronic physical disease, which contributes to their QWL and stimulates work continuation.

Implication for research

Based on previous literature about the QWL of 'healthy' employees [13-15,18], we labelled the experiences and perceptions in the working life of employees with a chronic physical disease as contributors to their QWL and work continuation. Elaborating on this assumption, we suggest that it would be relevant to study it more thoroughly, such as in an experimental setting, in order to assess the relationship between these issues and the QWL of employees with a chronic physical disease. This might increase the credibility of our assumption and it could provide greater breadth and depth to the concept of QWL, which is needed in order to avoid the concept becoming so broad that it loses meaning and precision.

For the practical use of QWL, a second step in the occupational support and the prevention of unemployment of employees with a chronic physical disease would be to use the results of this review to develop a tool for return-to-work interventions and work continuation interventions. Such a tool might enable health professionals to evaluate more efficiently what is required to increase QWL of employees with a chronic physical disease and then to translate this into specific interventions during the return-to-work or work continuation process. Furthermore, such a tool might be used to monitor the QWL of these employees or to measure the success of existing interventions aimed at improving their QWL. Eventually, if these return-to-work or work continuation processes are successful, this might contribute to the prevention of unemployment of employees with a chronic physical disease.

Conclusion

In summary then, this systematic review offers an extensive overview of issues that might contribute to the QWL of employees with a chronic physical disease. This overview may function as a starting point for occupational support, such as monitoring and evaluating the QWL of employees with a chronic physical disease during the return-to-work and work continuation process.

Acknowledgements

The study is part of the research project 'Quality of working life of cancer survivors' and was granted by the Dutch Cancer Society, registration number 2011-5228. This work was supported by COST Action IS1211 CANWON.

References

1. Harbers MM, Achterberg PW. Europeans of retirement age: chronic diseases and economic activity. Bilthoven: National Institute for Public Health and the Environment (The Netherlands), 2012. Available from: http://ec.europa.eu/health/major_chronic_diseases/docs/rivm_report_retirement_en.pdf. Accessed: 17 July 2016.
2. Van Oostrom SH, Picavet HS, Van Gelder BM, Lemmens LC, Hoeymans N, Verheij RA, et al. Multimorbidity and co-morbidity in the Dutch population - data from general practices [In Dutch: Multimorbiditeit en comorbiditeit in de Nederlandse bevolking - gegevens van huisartsenpraktijken]. *TBV*. 2011;155 A 3193.
3. Maurits E, Rijken M, Friele R. Summary about chronic diseases and work: Labour participation of people with a chronic disease or physical handicap [In Dutch: Kennissynthese chronisch zieken en werk: Arbeidsparticipatie door mensen met een chronische ziekte of lichamelijke beperking]. Utrecht: Netherlands Institute for Health Services Research, 2013. Available from: http://www.nivel.nl/sites/default/files/bestanden/Kennissynthese-Chronisch-Ziek-en-Werk.pdf. Accessed: 17 july 2016.
4. Mellon S, Northouse LL, Weiss LK. A population-based study of the quality of life of cancer survivors and their family caregivers. *Cancer Nurs*. 2006;29:120-31.
5. Blalock AC, Mcdaniel JS, Farber EW. Effect of employment on Quality of Life and psychological functioning in patients with HIV/AIDS. *Psychosomatics*. 2002;43:400-4.
6. Miller A, Dishon S. Health-related quality of life in multiple sclerosis: the impact of disability, gender and employment status. *Qual Life Res*. 2006;15:259-71.
7. Vestling M, Tufvesson B, Iwarsson S. Indicators for return to work after stroke and the importance of work for subjective well-being and life satisfaction. *J Rehabil Med*. 2003;35:127-31.
8. Wells M, Williams B, Firnigl D, Lang H, Coyle J, Kroll T, et al. Supporting 'work-related goals' rather than 'return to work' after cancer? A systematic review and meta-synthesis of 25 qualitative studies. *Psychooncology*. 2013;22:1208-19.
9. Roelen CA, Koopmans PC, Groothoff JW, van der Klink JJ, Bültmann U. Sickness absence and full return to work after cancer: 2-year follow-up of register data for different cancer sites. *Psychooncology*. 2011;20:1001-6.
10. Feuerstein M, Hansen JA, Calvio LC, Johnson L, Ronquillo JG. Work productivity in brain tumor survivors. *J Occup Environ Med*. 2007;49:803-11.
11. Zhang W, Koehoorn M, Anis AH. Work productivity among employed Canadians with arthritis. *J Occup Environ Med*. 2010;52:872-77.
12. Detaille SI, Haafkens JA, van Dijk FJ. What employees with rheumatoid arthritis, diabetes mellitus and hearing loss need to cope at work. *Scand J Work Environ Health*. 2003;29:134-42.
13. van Laar D, Edwards JA, Easton S. The Work-Related Quality of Life scale for healthcare workers. *J Adv Nurs*. 2007;60:325-33.
14. Royuela V, López-Tamayo J, Suriñach J. The institutional vs. the academic definition of the Quality of Work Life. What is the focus of the European Commission? *Soc Indic Res*. 2008;86:401-15.
15. Loscocco KA, Roschelle AR. Influences on the quality of work and nonwork life: Two decades in review. *J Vocat Behav*. 1991;39:182-225.

16. Nadler DA, Lawler III EE. Quality of work life: perspectives and directions. *Organ Dyn*. 1983;11:20-30.

17. Chan KW, Wyatt TA. Quality of Work Life: a study of employees in Shanghai, China. *Asia Pacific Bus Rev*. 2007;13:501-17.

18. Koonmee K, Singhapakdi A, Virakul B, Lee DJ. Ethics institutionalization, quality of work life, and employee job-related outcomes: A survey of human resource managers in Thailand. *J Bus Res*. 2010;63:20-6.

19. Lin S, Chaiear N, Khiewyoo J, Wu B, Johns NP. Preliminary psychometric properties of the chinese version of the Work-Related Quality of Life Scale-2 in the nursing profession. *Saf Health Work*. 2013;4:37-45.

20. Brooks BA, Anderson MA. Defining quality of nursing work life. *Nurs Econ*. 2005;23:319-26.

21. Ventegodt S, Andersen NJ, Kandel I, Enevoldsen L, Merrick J. Scientific research in the quality of working-life (QWL): generic measuring of the global working life quality with the SEQWL questionnaire. *Int J Disabil Human De*. 2008;7:201-17.

22. Main DS, Nowels CT, Cavender TA, Etschmaier M, Steiner JF. A qualitative study of work and work return in cancer survivors. *Psychooncology*. 2005;14:992-1004.

23. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *Ann Intern Med*. 2009;151:264-69.

24. Taylor T, Killaspy H, Wright C, Turton P, White S, Kallert T, et al. A systematic review of the international published literature relating to quality of institutional care for people with longer term mental health problems. *BMC Psychiatry*. 2009; doi:10.1186/1471-244X-9-55.

25. Berry DL. Return-to-work experiences of people with cancer. *Oncol Nurs Forum*. 1993;20:905-11.

26. Boudrez H, De Backer G, Comhaire B. Return to work after myocardial infarction: results of a longitudinal population based study. *Eur Heart J*. 1994;15:32-6.

27. Carter BJ. Surviving breast cancer: a problematic work re-entry. *Cancer Pract*. 1994;2:135-40.

28. Roessler RT, Gottcent J. The Work Experience Survey: a reasonable accommodation/career development strategy. *JARC*. 1994;25:16-21.

29. Rumrill Jr PD, Schoenfeld NL, Holman CA, Mullins Jr JA. Ecological assessment of the career maintenance needs of employees with diabetes. *Work*. 1997;9:111-20.

30. Roessler RT, Rumrill PD. Reducing workplace barriers to enhance job satisfaction: An important post- employment service for employees with chronic illnesses. *J Vocat Rehabil*. 1998;10:219-29.

31. Lerner DJ, Amick III BC, Malspeis S, Rogers WH, Gomes DR, Salem DN. The Angina-related Limitations at Work Questionnaire. *Qual Life Res*. 1998;7:23-32.

32. Maunsell E, Brisson C, Dubois L, Lauzier S, Fraser A. Work problems after breast cancer: an exploratory qualitative study. *Psychooncology*. 1999;8:467-73.

33. Dyck I, Jongbloed L. Women with multiple sclerosis and employment issues: A focus on social and institutional environments. *Can J Occup Ther*. 2000;67:337-46.

34. Mancuso CA, Paget SA, Charlson ME. Adaptations made by rheumatoid arthritis patients to continue working: a pilot study of workplace challenges and successful adaptations. *Arthritis Care Res*. 2000;13:89-99.

35. Barlow JH, Wright CC, Williams B, Keat A. Work disability among people with ankylosing spondylitis. *Arthritis Care Res*. 2001;45:424-29.

36. Bradley CJ, Bednarek HL. Employment patterns of long-term cancer survivors. *Psychooncology*. 2002;11:188-98.

37. Allaire SH, Wei L, LaValley MP. Work barriers experienced and job accommodations used by persons with arthritis and other rheumatic diseases. *Rehabil Couns Bull*. 2003;46:147-56.

38. Howden S, Jones D, Martin D, Nicol M. Employment and chronic non-cancer pain: insights into work retention and loss. *Work*. 2003;20:199-204.

39. Mancuso CA, Rincon M, Charlson ME. Adverse work outcomes and events attributed to asthma. *Am J Ind Med*. 2003;44:236-45.

40. Andries F, Kremer AM, Hoogendoorn WE, Wevers CW, van Putten DJ. Working with a chronic disorder - the development of the Work and Handicap Questionnaire. *Int J Rehabil Res*. 2004;27:37-44.

41. Backman CL. Employment and work disability in rheumatoid arthritis. *Curr Opin Rheumatol*. 2004;16:148-52.

42. Johnson KL, Yorkston KM, Klasner ER, Kuehn CM, Johnson E, Amtmann D. The cost and benefits of employment: a qualitative study of experiences of persons with multiple sclerosis. *Arch Phys Med Rehabil*. 2004;85:201-9.

43. Boot CR, Vercoulen JH, van der Gulden JW, Orbon KH, van den Hoogen H, Folgering HT. Sick leave in patients with obstructive lung disease is related to psychosocial and work variables rather than to FEV1. *Resp Med*. 2005;99:1022-31.

44. de Croon EM, Sluiter JK, Nijssen TF, Kammeijer M, Dijkmans BA, Lankhorst GJ, et al. Work ability of Dutch employees with rheumatoid arthritis. *Scand J Rheumatol*. 2005;34:277-83.

45. Gignac MA. Arthritis and employment: an examination of behavioral coping efforts to manage workplace activity limitations. *Arthritis Rheum*. 2005;53:328-36.

46. Bouknight RR, Bradley CJ, Luo Z. Correlates of return to work for breast cancer survivors. *J Clin Oncol*. 2006;24:345-53.

47. Burton WN, Chen CY, Schultz AB, Conti DJ, Pransky G, Edington DW. Worker productivity loss associated with arthritis. *Dis Manag*. 2006;9:131-43.

48. Detaille SI, Haafkens JA, Hoekstra JB, van Dijk FJ. What employees with diabetes mellitus need to cope at work: views of employees and health professionals. *Patient Educ Couns*. 2006;64:183-90.

49. Medin J, Barajas J, Ekberg K. Stroke patients' experiences of return to work. *Disabil Rehabil*. 2006;28:1051-60.

50. Varekamp I, Verbeek JH, van Dijk FJ. How can we help employees with chronic diseases to stay at work? A review of interventions aimed at job retention and based on an empowerment perspective. *Int Arch Occup Environ Health*. 2006;80:87-97.

51. Kennedy F, Haslam C, Munir F, Pryce J. Returning to work following cancer: a qualitative exploratory study into the experience of returning to work following cancer. *Eur J Cancer Care (Engl)*. 2007;16:17- 25.

52. Lacaille D, White MA, Backman CL, Gignac MA. Problems faced at work due to inflammatory arthritis: new insights gained from understanding patients' perspective. *Arthritis Rheum*. 2007;57:1269-79.

53. Nachreiner NM, Dagher RK, McGovern PM, Baker BA, Alexander BH, Gerberich SG. Successful return to work for cancer survivors. *AAOHN J*. 2007;55:290-95.

54. Nilsson I, Fitinghoff H, Lilja M. Continuing to work after the onset of rheumatoid arthritis. *Work*. 2007;28:335-42.

55. Taskila T, Lindbohm ML. Factors affecting cancer survivors' employment and work ability. *Acta Oncol*. 2007;46:446-51.

56. Amir Z, Neary D, Luker K. Cancer survivors' views of work 3 years post diagnosis: a UK perspective. *Eur J Oncol Nurs*. 2008;12:190-97.

57. Steiner JF, Cavender TA, Nowels CT, Beaty BL, Bradley CJ, Fairclough DL, et al. The impact of physical and psychosocial factors on work characteristics after cancer. *Psychooncology*. 2008;17:138-47.

58. Varekamp I, de Vries G, Heutink A, van Dijk FJ. Empowering employees with chronic diseases; development of an intervention aimed at job retention and design of a randomised controlled trial. *BMC Health Serv Res*. 2008; doi:10.1186/1472-6963-8-224

59. Crockatt SY, Targett P, Cifu D, Wehman P. Return to work of individuals with arthritis: A review of job performance and retention. *J Vocat Rehabil*. 2009;30:121-31.

60. Frazier LM, Miller VA, Miller BE, Horbelt DV, Delmore JE, Ahlers-Schmidt CR. Cancer-related tasks involving employment: opportunities for clinical assistance. *J Support Oncol*. 2009;7:229-36.

61. Messmer Uccelli M, Specchia C, Battaglia MA, Miller DM. Factors that influence the employment status of people with multiple sclerosis: a multi-national study. *J Neurol*. 2009;256:1989-96.

62. Feuerstein M, Todd BL, Moskowitz MC, Bruns GL, Mallori R.Stoler, Nassif T, et al. Work in cancer survivors: A model for practice and research. *J Cancer Surviv*. 2010;4:415-37.

63. Johnsson A, Fornander T, Rutqvist LE, Olsson M. Factors influencing return to work: a narrative study of women treated for breast cancer. *Eur J Cancer Care (Engl)*. 2010;19:317-23.

64. Tiedtke C, de Rijk A, Dierckx de Casterlé B, Christiaens MR, Donceel P. Experiences and concerns about 'returning to work' for women breast cancer survivors: a literature review. *Psychooncology*. 2010;19:677-83.

65. Varekamp I, van Dijk FJ. Workplace problems and solutions for employees with chronic diseases. *Occup Med*. 2010;60:287-93.

66. Banning M. Employment and breast cancer: a meta-ethnography. *Eur J Cancer Care (Engl)*. 2011;20:708-19.

67. Culler KH, Wang YC, Byers K, Trierweiler R. Barriers and facilitators of return to work for individuals with strokes: perspectives of the stroke survivor, vocational specialist, and employer. *Top Stroke Rehabil*. 2011;18:325-40.

68. Hartke RJ, Trierweiler R, Bode R. Critical factors related to return to work after stroke: a qualitative study. *Top Stroke Rehabil*. 2011;18:341-51.

69. Lindbohm ML, Kuosma E, Taskila T, Hietanen P, Carlsen K, Gudbergsson S, et al. Cancer as the cause of changes in work situation (a NOCWO study). *Psychooncology*. 2011;20:805-12.

70. van der Meer M, Hoving JL, Vermeulen MI, Herenius MM, Tak PP, Sluiter JK, et al. Experiences and needs for work participation in employees with rheumatoid arthritis treated with anti-tumour necrosis factor therapy. *Disabil Rehabil*. 2011;33:2587-95.

71. Mehnert A. Employment and work-related issues in cancer survivors. *Crit Rev Oncol Hematol*. 2011;77:109-30.

72. Ten Katen K, Beelen A, Nollet F, Frings-Dresen MH, Sluiter JK. Overcoming barriers to work participation for patients with postpoliomyelitis syndrome. *Disabil Rehabil*. 2011;33:522-29.

73. Blinder VS, Murphy MM, Vahdat LT, Gold HT, de Melo-Martin I, Hayes MK, et al. Employment after a breast cancer diagnosis: a qualitative study of ethnically diverse urban women. *J Commun Health*. 2012;37:763-72.

74. Honan CA, Brown RF, Hine DW, Vowels L, Wollin JA, Simmons RD, et al. The Multiple Sclerosis Work Difficulties Questionnaire. *Mult Scler*. 2012;18:871-80.

75. Høyer M, Nordin K, Ahlgren J, Bergkvist L, Lambe M, Johansson B, et al. Change in working time in a population-based cohort of patients with breast cancer. *J Clin Oncol*. 2012;30:2853-60.

76. Lindbohm ML, Taskila T, Kuosma E, Hietanen P, Carlsen K, Gudbergsson S, et al. Work ability of survivors of breast, prostate, and testicular cancer in Nordic countries: a NOCWO study. *J Cancer Surviv*. 2012;6:72-81.

77. McGrath PD, Hartigan B, Holewa H, Skarparis M. Returning to work after treatment for haematological cancer: findings from Australia 131. *Support Care Cancer*. 2012;20:1957-64.

78. Verhoef JA, Miedema HS, Bramsen I, Roebroeck ME. Using the Work Limitations Questionnaire in patients with a chronic condition in the Netherlands. *J Occup Environ Med*. 2012;54:1293-99.

79. Antao L, Shaw L, Ollson K, Reen K, To F, Bossers A, Cooper L. Chronic pain in episodic illness and its influence on work occupations: A scoping review. *Work*. 2013;44:11-36.

80. Grunfeld EA, Drudge-Coates L, Rixon L, Eaton E, Cooper AF. "The only way I know how to live is to work": A qualitative study of work following treatment for prostate cancer. *Health Psychol*. 2013;32:75-82.

81. Mendelson C, Poole JL, Allaire S. Experiencing work as a daily challenge: The case of scleroderma. *Work*. 2013;44:405-13.

82. Österholm JH, Björk M, Håkansson C. Factors of importance for maintaining work as perceived by men with arthritis. *Work*. 2013;45:439-48.

83. Mays N, Pope C. Qualitative research in health care. Assessing quality in qualitative research. *BMJ*. 2000;320:50-52.

84. Martel JP, Dupuis G. Quality of Work Life: theoretical and methodological problems, and presentation of a new model and measuring instrument. *Soc Indic Res*. 2006;77:333-68.

85. Sirgy MJ, Efraty D, Siegel P, Lee DJ. A new measure of Quality of Work Life (QWL) based on need satisfaction and spillover theories. *Soc Indic Res*. 2001;55:241-302.

86. Lerner D, Amick III BC, Rogers WH, Malspeis S, Bungay K, Cynn D. The Work Limitations Questionnaire. *Med Care*. 2001;39:72-85.

87. Abma FI, van der Klink JJ, Bültmann U. The Work Role Functioning Questionnaire 2.0 (Dutch version): Examination of its reliability, validity and responsiveness in the general working population. *J Occup Rehabil*. 2013;23:135-47.

88. van Veldhoven M, Meijman TF. Questionnaire perception and judgement of work [In Dutch: vragenlijst beleving en beoordeling van de arbeid (VBBA)]. Amsterdam: NIA; 1994.

Appendix 1

Search strategies for the systematic literature review

Search strategy for PubMed

(((employment[tw] OR working[tw] OR employed OR employee[tw] OR employees[tw] OR worker[tw] OR workers[tw] OR labourer[tw] OR labourers[tw] OR staff[tw] OR workforce[tw] OR personnel[tw] AND (hasabstract[text] AND ("1988/01/01"[PDat] : "2014/01/31"[PDat]) AND Humans[Mesh] AND (Dutch[lang] OR English[lang] OR German[lang])))) AND (chronic OR cancer* OR neoplasm* OR neoplasms OR obstructive lung diseases[mesh] OR rheumatic diseases[mesh] OR diabetes mellitus[mesh] OR cardiovascular diseases[mesh] AND (hasabstract[text] AND ("1988/01/01"[PDat] : "2014/01/31"[PDat]) AND Humans[Mesh] AND (Dutch[lang] OR English[lang] OR German[lang]))) AND ("quality of working life" OR "quality of work life" OR "work life quality" OR QWL OR "work retention" OR "work participation" OR "maintaining work" OR "sustained work" OR "work continuation" OR "return-to-work" OR "returning to work" OR "work role" OR "work roles" OR "work goal" OR "work goals" OR "work productivity" OR "work hour" OR "work hours" OR "work efficiency" OR "work responsibility" OR "work responsibilities" OR "work ability" OR "work abilities" OR "work commitment" OR "work limitation" OR "work limitations" OR "work satisfaction" OR "work circumstances" OR "work accommodation" OR "work accommodations" OR "job involvement" OR "job performance" OR "job reward" OR "job rewards" OR "job security" OR "job responsibility" OR "job responsibilities" OR enjoyment OR "personal growth" OR "job relevance" OR "work value" OR "work values" OR "participation in decision making" OR "work environment" OR "job support" OR "social network" OR "work motivation" OR co-worker OR co-workers AND (hasabstract[text] AND ("1988/01/01"[PDat] : "2014/01/31"[PDat]) AND Humans[Mesh] AND (Dutch[lang] OR English[lang] OR German[lang]))) AND (hasabstract[text] AND ("1988/01/01"[PDat] : "2014/01/31"[PDat]) AND Humans[Mesh] AND (English[lang] OR Dutch[lang] OR German[lang]))

Search strategy for PsycINFO and EMBASE

1. (employment or working or employee or worker or workers or labourer or labourers or staff or workforce or personnel).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]

2. limit 1 to (abstracts and human and (dutch or english or german) and yr="1988 - 2014")
3. neoplasm/
4. respiratory tract disease/
5. arthritis/
6. diabetes mellitus/
7. cardiovascular disease/
8. chronic.mp.
9. 8 or 3 or 4 or 5 or 6 or 7
10. limit 9 to (abstracts and human and (dutch or english or german) and yr="1988 - 2014")
11. (quality working life or quality work life or work life quality or QWL or work retention or work participation or maintaining work or sustained work or work continuation or return work or returning work or work role or work roles or work goal or work goals or work productivity or work hour or work hours or work efficiency or work responsibility or work responsibilities or work ability or work abilities or work commitment or work limitation or work limitations or work satisfaction or work circumstances or work accommodation or work accommodations or job involvement or job performance or job reward or job rewards or job security or job responsibility or job responsibilities or enjoyment or personal growth or job relevance or work value or work values or participation decision making or work environment or job support or social network or work motivation or co-worker or co-workers).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]
12. limit 11 to (abstracts and human and (dutch or english or german) and yr="1988 - 2014")
13. 2 and 10 and 12
14. limit 13 to (abstracts and human and (dutch or english or german) and yr="1988 - 2014")
15. (quality working life or quality work life or work life quality or QWL or work retention or work participation or maintaining work or sustained work or work continuation or return work or returning work or work role or work roles or work goal or work goals or work productivity or work hour or work hours or work efficiency or work responsibility or work responsibilities or work ability or work abilities or work commitment or work limitation or work limitations or work satisfaction or work circumstances or work accommodation or work accommodations or job involvement or job performance or job reward or

job rewards or job security or job responsibility or job responsibilities or enjoyment or personal growth or job relevance or work value or work values or participation decision making or work environment or job support or work motivation or co-worker or co-workers).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]

16. limit 15 to (abstracts and human and (dutch or english or german) and yr="1988 - 2014")
17. 2 and 10 and 16
18. (employment or working or employee or employees or worker or workers or labourer or labourers or staff or workforce or personnel).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]
19. limit 18 to (abstracts and human and (dutch or english or german) and yr="1988 - 2014")
20. 10 and 16 and 19

Appendix 2

Issues that contribute to QWL per included study (order based on place in the reference list)

Reference	Issues that contribute to Quality of Working Life
Berry [25]	- mobilizing social support in the workplace: making social comparisons trough stories about other sick people - absence: flexibility in rescheduling and differences in work tasks - benefits for future plans - appraisal of priorities in the participant's life - supervisors reaction to the diagnosis: support and concern - feelings of loss of control and power
Boudrez et al. [26]	- perceived importance of the job
Carter [27]	- disclosure by employer and not by choice - stigma: discrimination - lack of social support: unsupportive personnel - negative responses - acceptance of the disease by the individual - sense of connection to the community - sense of purpose in life - fear of recurrence
Roessler et al. [28]	- difficulties with accessibility in the workplace and job duties - career mastery: confidence in the ability to perform satisfactorily given proper work conditions - job accommodations - job satisfaction - physical difficulties: fatigue - cognitive limitations - problems with hazards - sense of accomplishment - adequate compensation - autonomy
Rumrill et al. [29]	- work environment/conditions: temperature, hazards, obstacles, much noise - inflexible work schedules - task-related barriers - job mastery: uncertainty about future career prospects - hesitance to ask for help - lack of intrinsic reinforcement - job pace satisfaction - job variety satisfaction - communication with supervisors regarding the illness - accessibility - cognitive and physical abilities - feedback regarding performance - socialization at work - feeling a sense of accomplishment - receiving recognition for the work - having everything in order to do the job
Roessler et al. [30]	- job satisfaction: feelings of accomplishment, fair pay comparison to others, recognition, working conditions,

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
	administration of company policies, job autonomy - accessibility of the workplace - physical and cognitive problems - worries about meeting job demands - job mastery - reasonable accommodations: restructuring of existing facilities - workload - co-workers understanding of disability and its changing symptoms
Lerner et al. [31]	- physically exerting tasks: walking and climbing stairs - handling stressful work situations - feeling a sense of accomplishment, doing the work one would like to do
Maunsell et al. [32]	- disclosure: positive and negative effects of co-workers' awareness of the diagnosis (support or hurtful remarks, felt looks and noticed silences, or annoyance by co-workers questions, embarrassment and reactions) - fear of job loss, being less competent, disappointing co-workers because of declined productivity - physical appearance - work changes: demotion, task modifications, decrease in earnings, changes in relations with co-workers and employers - discrimination - physical limitations: fatigue - changed attitudes to work: less importance and satisfaction from work
Dyck et al. [33]	- physical and cognitive impairments: fatigue, standing, climbing stairs, walking, writing, memory/concentration - job flexibility: flexible hours of arrival and departure, place to rest, freedom to take days of when necessary - supportive employers or supervisors - work modifications: altering work requirements to continue to work - understanding colleagues - reducing work hours - fear that disclosure would result in discrimination or stigma associated with a disabled identity - uncertainty over job status - concern over the ability to meet the expectations of the previous self and social identities - job performance expectations
Mancuso et al. [34]	- physical challenges: fatigue - maintaining a pleasant disposition - working overtime - travelling for business - transportation to and from work - no flexibility: choose rest periods, controlling workplace environment - work adaptations: controlling work hours, declining promotions

	- role of supervisors/co-workers: accommodations, providing emotional support, disclosure
Barlow et al. [35]	- independence (financial) - physical functioning: fatigue - work adaptations: work hours, changing work roles - changing work life: frustration, bitterness, anger, mood swings, feelings of inadequacy, loss of choice, independence, self-esteem, self-confidence, and job satisfaction - anxiety for employability, providing for the future. - working harder to compensate for feelings of vulnerability and times of ill health - feelings of guilt for giving in - financial restrictions through loss/reduction of earnings - perceptions of being vulnerable in the workplace - loss of promotion opportunities
Bradley et al. [36]	- purpose of earnings: save for potential future medical expenses and keeping health insurance - physical/cognitive work limitations - accommodation by employers to patients' needs to be absent from work - empowerment and ability to maintain sense of control
Allaire et al. [37]	- work barriers in general: work-site access, working with hostile others, working conditions, speaking/communication, company policies - work barriers in job functions: physical activities, cognitive activities, task-related activities, social activities - type of work accommodations: special equipment, rest periods, job duty and work hours, transportation - employer involvement in job accommodation: asking for accommodation
Detaille et al. [12]	- acceptance of the disease - ability to cope with the illness: good equipment - understanding and awareness colleagues - able to communicate with colleagues and management - support and acceptance management and colleagues - support of medical professionals - work conditions support of society and patient organisations - facilities and benefits - learning from the experiences of peers - social climate at work
Howden et al. [38]	- physical difficulties and discomfort: vulnerability - autonomy and the ability to change working practice - social networks at work and interactions with co-workers and employers: practical assistance from co-workers that is - encouraged by employer - the importance of work and motivation to work
Mancuso et al. [39]	- having trouble with a boss - sharply reduced workload - being criticized by a superior - being threatened to be fired - getting a negative job performance review

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
	- having added pressure to work harder or faster - disagreeing with others about job assignments - desire to work
Andries et al. [40]	- work-related fatigue: limited ability - work adjustments - not receiving social support - experiencing time pressures and low job autonomy - working conditions: long/irregular working hours - negative possibilities for promotion - more troublesome environmental conditions
Backman [41]	- work disability - reduced productivity - work limitations: fewer hours - lower functional status - fatigue - autonomy and control: ability to change job demands or career path, alter work hours or pace of work tasks, and self employment - supervisory and co-worker support: contribution to positive work environment and assistance to cope with the disease and job demands within the workplace - modifications in the workplace: adjustments to workspace, equipment, tasks, hours, pacing and interpersonal relationships or negotiating with others - patient's perspective regarding the importance of work and motivation
Johnson et al. [42]	- value of working: financial benefits, important to identity, self-esteem, social contact/network - cost of working - physical and cognitive complaints: fatigue - stress in the workplace: exceeding one's resources - concern about the reactions of others: discrimination, overemphasis on disability by employers and co-workers
Boot et al. [43]	- work environment factors - low job control - low job satisfaction - fatigue - hiding of limitations - disclosure: informing the employer and colleagues about the disease - having difficult work tasks
De Croon et al. [44]	- low mental work ability - lack of autonomy - lack of participation in decision making - lack of supervisor and or co-worker support - physical work limitations/ability: fatigue
Gignac [45]	- time adjustments: changes to frequency, duration and timing of activities and giving up or limiting activities - instrumental help with tasks and discussions of difficulties

	with others - modifications to activities - anticipatory coping : planning, caution, movement such as stretching and alternating rest with activity
Main et al. [22]	- experiences at work such as how others respond: disclosure, social support - workplace accommodations - productivity: decreasing hours, working more efficiently/ self-accommodations, changing responsibilities/self-accommodations - feelings about work: motivation, tolerance, relevance, enjoyment, personal growth - effects of the disease on functional, physical, mental, and cognitive health
Bouknight et al. [46]	- perceived employer discrimination related to the diagnosis - perceived employer accommodation for illness - supportive work environment
Burton et al. [47]	- work limitations: physical work activities, time management, mental/interpersonal activities, overall output/productivity
Detaille et al. [48]	- accepting and coping with the disease by the individual - communicate with others to create understanding - be determined to work - to control disease at work - to inform colleagues and management about disease - adaptations at the workplace: flexible work schedules, stable workload, opportunities for disease management at work and a relaxed atmosphere - support and understanding from colleagues and management - support from health professionals - information about technical devices and ways to finance these - adequate benefits at work
Medin et al. [49]	- stable work environment - competence superiors about rehabilitation: adjustments, modified work, understanding among co-workers about the disease and its consequences - physical and cognitive impairments - adapting to new social role - control of the situation: working on own terms, being disciplined and taking initiative - understanding and positive attitude of co-workers and employers
Varekamp et al. [50]	- understanding the disorder, its consequences and aids - feelings of control - social competence and self-efficacy
Kennedy et al. [51]	- financial reasons - social network - physical health - responsibility and feelings of loyalty to work - individual, employer and colleagues' expectations - health professionals' advice

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
	- employer and colleagues' lack of awareness and information - work adjustments: flexibility, changes in work tasks - changed perception of work
Lacaille et al. [52]	- symptoms and characteristics of disease: fatigue - working conditions: lack of flexibility/control, demands of the job, difficulty commuting, difficulty requesting and getting job accommodations, difficulty obtaining ergonomic modifications, difficulty making career changes, difficulty planning for future career - interpersonal difficulties at work: with co-workers, co-workers and employers not understanding the disease - emotional challenges: fear and anxiety, stress, uncertainty about the future, feelings of guilt, sense of inadequacy, loss of personal fulfilment, feelings of dependency and helplessness, financial concerns - disclosure at work
Nachreiner et al. [53]	- financial reasons - job flexibility: work from home, starting and stopping times, schedule specific work activities - co-worker support: instrumental or emotional - healthcare provider support - ignorance by co-workers and supervisors about the disease in the workplace - physical impairments - meaning of work
Nilsson et al. [54]	- constructive value of work: considered value of work tasks, work process, social environment and responsibility for performance - characteristics of work: freedom to modify work behavioural procedures and the schedule for the working day - physical health and well-being - understanding and support of colleagues
Taskila et al. [55]	- discrimination - practical support: consideration from employer when planning and managing work tasks - support from occupational health services - workplace accommodations - strong commitment to the organisation - enjoying good social climate at work
Amir et al. [56]	- strong commitment to work - evaluating work-life balance - changing attitude to work - losing identity when not working - financial necessity of work - having excessive work demands and coping with these demands - experiencing difficulties at work: fatigue, cognitive function and loss of confidence - high degree of discretion and flexibility over work - being over-protected at work - being treated unreasonably: insensitive management

	- relationship with employer: particularly line manager and colleagues - duration of service at the workplace - level of support: colleagues that keep in touch, sympathetic and supportive employer - feelings of being wanted by the employer
Steiner et al. [57]	- support from co-workers and employer - change in occupational role - physical and psychological symptoms: fears - enjoyment of job
Varekamp et al. [58]	- burden and task content: physical load, mental/emotional/ general work stress, uncertainty about tasks and responsibilities, disturbances at work - work autonomy: planning tasks oneself, deciding about breaks, deciding about work hours - relationships at work: appreciation for work, support of management and colleagues, social atmosphere at work - employment and perspectives: fit into the organisation, job certainty, payment in accordance with performance - work-home interference; burden in home situation, commuting, leisure activities
Crockatt et al. [59]	- workplace barriers: physical limitations (fatigue), not being able to choose own rest periods, physical activities, working conditions, task-related activities, worksite access issues - transportation to and from the workplace - support from management and employers - work adaptations: employment activity by altering work hours, job accommodations, obtaining assistance from co-workers - responsibility and coping ability - support from health professionals - financial regulations at the workplace - positive attitude employers and colleagues - understanding and acceptance of illness by the individual
Frazier et al. [60]	- communicating with one's supervisor about changed needed in one's work schedule or duties - learning about the company's policies, procedures and benefits concerning major illness - insensitive remarks by co-workers - help from health professionals by finding solutions to disease-related job problems
Messmer Uccelli et al. [61]	- physical problems: mobility, fatigue - financial factors: employment policies, pension benefits, current salary and future financial status - workplace environment - possibility to set own pace - accessibility/conveniently located work area, equipment, bathroom - flexible work schedule - freedom to take time off when needed, intermittent breaks/rest - assistance with work - work load

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
Feuerstein et al. [62]	- physical symptoms: fatigue, pain, sleep disturbance, dyspnea - cognitive symptoms: distress - physical, cognitive, emotional, interpersonal variables that can impact discrepancy between capacity and work demands - workers' perceptions of the workplace/work environment: job stress, flexibility from supervisor, opportunities for promotion, support of co-workers, organisational and social climate - policies, procedures, and economic factors - discrimination due to the lack of communication
Johnsson et al. [63]	- personal feelings about belonging to the labour market - perception of the value of employment - changing attitude to work - financial reasons - social support from employers and co-workers: change timetabling and ease the workload - supportive and negative attitudes from customers - hostile acts from employers
Tiedtke et al. [64]	- disclosure - supportive work environment: lack of support, social network - physical appearance - productivity - disappointing the employer: feeling of being less competent and letting the company down - job loss - financial pressure - workplace modifications - physical and cognitive problems: fatigue - changing perception of work: less work value, unsatisfying work, difficult work - adjustments based on flexibility, gradual assimilation, and changes in tasks - discrimination: altered relations with co-workers and employers - annoyance by colleagues' questions, getting hurtful remarks or experiencing awkward moments of social silence
Varekamp et al. [65]	- commuting and contact with the supervisor or with colleagues - acceptance of the chronic disease - organisational work accommodations: ability to work home, work fewer hours, at a slower pace, more autonomy in work planning - physical complaints: fatigue - worrying about work - job satisfaction - work pace - job autonomy - uncertainty about future
Banning [66]	- employment: avoidance of disclosure, fear of sick leave, financial and insurance pressures, re-evaluation life priorities, reducing work aspirations/work-related ambition, less satisfaction, self-worth, accomplishment, sanity and commitment, meaning of work

	- treatment-induced physical impairment: extreme fatigue, inability to cope with work demands, diminished physical capability, impaired cognitive functioning, loss of confidence - employer comprehension: reduced sympathy and work-related support in terms of requested work adjustments, feelings of reduced competence, demotion, worries over appearance, employer education - fear of work-related failure: altered work priorities, issued of employment competence fear of failure, letting employer down, work-based social support - work atmosphere embedded with social support networks - assistance by medical practitioners and specialists
Culler et al. [67]	- supportive employer - job modifications - physical issues: mobility, fatigue - cognitive issues - psychological issues: internal changes in terms of attitude or self-concept, positive acceptance of disability by individual - fear of losing benefits - changes of job tasks
Hartke et al. [68]	- financial - physical, cognitive, visual perceptual and communication impairments - interpersonal support: instrumental assistance like monitoring the work schedule (but can also be excessive and therefore intrusive), discriminatory reactions, feelings of being valued - involvement of vocational counsellor: support and concrete information, resources and negotiation with employers - organisational influences: how to ask for reasonable accommodations - work or job specific issues: flexibility of the workplace and administration to allow pacing of and - accommodations, open communications with supervisors - psychological issues: performance anxiety, motivational (meaning of work) and coping issues, accept limitations resulting from the disease
Lindbohm et al. [69]	- physical demands - weak support from supervisors and healthcare workers
Van der Meer et al. [70]	- physical limitations: fatigue - having more job control: flexible (fewer) working hours, working at home, changing job tasks - feeling uneasiness in asking the employer for adaptations because of feeling like a burden - supportive colleagues (being concerned and sensitive): emotional support, being able to talk about problems, unasked interference, responses of colleagues experiencing as impeding or patronizing, receiving advice and assistance - communication about work limitations - communication with employer concerning problems - positive working atmosphere

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
	- emotions and feelings: anger from treated unfairly by the employer, grief about negative reactions, feelings of health concerns not being taken seriously, feelings of imposing (guilt) on the organisation - setting boundaries: difficulties in knowing limitations - making many concessions to keep functioning at work - needing information from healthcare professionals
Mehnert [71]	- flexible working arrangements - disclosure to colleagues - impairments: fatigue - non-supportive work environment - perceived employer accommodation for disease and treatments - psychological or self-perceived constraints - adjusted work limitations - training services - changes in occupational role - relation with co-workers and managers - job satisfaction and career prospects - motivational factors: meaning of work, intention to work - perceived employer discrimination: reduced opportunity for promotion
Ten Katen et al. [72]	- job control: organizing own working day, changing shifts, opportunities to rest, participation in decisions - organisational arrangements: finances, days off, irregular/less working hours, decreased accessibility, discrimination, disabled - job content: supported employment, having an independent job, physical job impairments - job conditions: having travel opportunities, social support (co-workers and employers are willing to help), adaption at the workplace (accessibility), mobility - personal factors: wanting to work, ability to work is restricted, acceptance of disease by the individual
Blinder et al. [73]	- experience of normalcy: regain control, feel empowered to cope - acceptance of the diagnosis - work identity - appearance - maintaining privacy: (no disclosure) control over the disclosure of medical information, avoid being the object of gossip, pity, and discrimination, avoid questions - lack of flexibility at work: burden for co-workers, lack of flexibility in terms of medical leave, daily schedule, and requirements at work - employer support: in terms of logistical arrangements at work and personal interactions, flexibility in schedule, adapt to the demands at work, maintain privacy, preserve a 'normal' environment at work, advice from a supervisor - financial stress
Honan et al. [74]	- general cognitive difficulties - fatigue - low-self esteem

	- non-supportive workplace - pain/temperature difficulties - financial concerns - movement/mobility difficulties - workplace inaccessibility
Høyer et al. [75]	- work value - disease-related work limitations - lack of employer accommodation - discrimination at work - lack of support from co-workers
Lindbohm et al. [76]	- low perceived work ability - work limitations
McGrath et al. [77]	- support of employers; the offer of flexibility in relation to the hours that needed to be worked and provided time to cover medical treatment - the type of work the individual is required to do - support from employers that is valued; respect, compassion and care - protection of the individual's right to return to the same position - pleased to be part of the workforce
Verhoef et al. [78]	- work limitation in time management; work the required number of hours, get going at the beginning of work day, start job on arrival, work without breaks or rests, stick to routine or schedule - work limitations in physical demands; walk or move - around, lift/carry/move objects, sit or stand more than 15 minutes, repeat same motions, bend/twist/reach, use hand tools or equipment - work limitations in mental-interpersonal demands; keep mind on work, think clearly, work carefully, concentrate on work, work without losing train of thoughts, read or use your eyes, speak with people, control temper around people, help others to get the work done - work limitations in output demands; handle workload, work fast enough, finish work on time, work without mistakes, done what you are capable of
Antao et al. [79]	- education to implement balance or skill development to change or maintain employment directions and careers - cognitive strategies to cope - assistive device use - pacing - self-advocacy for accommodations - assess job related needs and changes fluctuate - education of employers; nature of illness and procedural support - flexibility in rest breaks and work schedules - access to flexible accommodations (working from home) - reducing environmental barriers, climate control, proximity to restroom - use of flexible benefits, consideration of use medical leaves and time off - modification to the service delivery programs (anti-discrimination laws)

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
	- social support; emotional support - fear; job-related, of disclosure, financial (fear of losing health insurance, coverage/benefits, support) - loss of control; illness related - physical; fatigue, pain, mobility, vision impairments, medication side effects, motor impairments/weakness, incontinence, substance abuse, medical care/regimens - cognition; depression/anxiety, impaired, emotional distress, guilt/personal failure - social isolation; decline in social functioning, decreased leisure - vocational; fluctuations, unmet vocational - rehabilitation needs, poor knowledge of services - working parameters; of job, environmental, lack of reasonable accommodations - lack of employer knowledge; of illness - benefits/funding/social security - stigma - discrimination
Grunfeld et al. [80]	- financial reward, social interaction, provision of routine - general work ethic; the believe that to some extent the role that work plays in a person's life is a strong driving force to RTW - self-identity; lack of confidence about work ability to return to former role, reduced confidence following a period of outside the workplace - postoperative side-effects; urinary incontinence, concerns and anxiety for work environment challenges due to incontinence, perceptions of masculinity - disclosure of diagnosis or subsequent side effects - feelings of embarrassment or fears of stigmatization, concerns about appearing to seek sympathy or causing embarrassment to others, might be asked inappropriate questions, belief that people do not want to hear about the disease and would perceive the employee to be attention-seeking - acceptance of their condition - anger at the negative reactions of others - perceptions of future; concerns of likelihood of cancer recurrence or spread of the disease - reassessed how they spent their time and had made significant changes to their work behaviour, opportunity to reassess the focus of their lives - perceived missed opportunities or being unable to fulfil ambitions - resilience and positive emotional outcomes - requiring a period of adjusting to cope with being back in the work environment and the demands of their role - nondisclosure of one's vulnerability - support of staff - anxiety for financial and practical reasons - distraction from disease related concerns - disappointment and anxiety

Mendelson et al. [81]	- fatigue - desire to remain employed - balance the needs of the illness with the demands of the career - work environment; workplace accommodations - environment getting to work; cold on the hands, limited mobility, modifications to their cars - physical environment at work; challenges with some aspects of physical demands at the job, feeling cold, nonmodifiable building designs - settled into jobs in which they are able to function - use various strategies and accommodations; planning and switching tasks, strategizing needed time off, flexible work schedules - career planning; working less overtime and not volunteering for extra assignments, concerns about what the future would hold with regard to employment - value of working in a large company that affords them the opportunities to move within a company and have a degree of flexibility - limited opportunities and lost dreams were a source of dissatisfaction and sadness - changing responsibilities - supportive employers expressing concern, assistance with accommodations and varying degrees of flexibility form medical needs when employee disclosed disease to employer - supportive co-workers; caring, concerning and (instrumental) helpful but hard to explain the disease
Österholm et al. [82]	- desire to work - meaningful work; exiting, stimulating, challenging, and interesting work - desire to be as everyone else; engaging in work, pride being able to continue working, work as a large part of their identity, perceiving income as a statement being part of the society and financial necessity - adjusted activity pattern; prioritizing work, more recreation, taking more breaks during working hours or resting more at nights or at weekends, balance - between recreation and work - awareness of own capabilities; learning to live with reduced capabilities, adjusting work tasks or work pace, need to control and adjust movement patterns - good work conditions; flexible work conditions, predictable workday which minimize the risk of stressful situations and unpredicted events - environmental support; objects and space in the workplace, the size of the company provides a sense of security that a more suitable workplace will be found if necessary, support from colleagues, support from families, support from authorities and healthcare - use of effective medication
Wells et al. [8]	- conscious of changes in appearance, ability and self-confidence - maintaining identity as a reliable and useful employee

Appendix 2. *(continued)*

Reference	Issues that contribute to Quality of Working Life
	- work ethics; portray oneself as a hard worker - feeling different and perceiving that others see them in a different and less complimentary light which fuels own negative self-perception - being embarrassed by the personal nature and assumptions attached to the disease - meaning and significance of work; structure to everyday life and contributing to identity, self-worth and a sense of purpose - family and financial context; issues of financial necessity - work environment - organisational support; work-related support provided by healthcare professionals, social workers and occupational health, and employers' willingness and ability to make adjustments to the workplace and the job role - interpersonal support; informal personal and emotional support provided in the workplace, along with the actions and attitudes of co-workers - having changes forced upon by the employer (to which one agreed out of fear of losing the job) - presence of negative employer/work colleague attitudes; discriminatory practices and feeling stigmatised at work, experiencing 'awkward silences', inappropriate gossip or sexual stigmatisation