

ARTICLE

The Need for Support and Adaptation in the Workplace among Persons with Different Types of Disabilities and Reduced Work Ability

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This study aimed to examine support and adaptation needed by persons with four different types of disabilities, either at their workplace or in order to enter the labour market. A secondary analysis was conducted, based on the regular labour market survey (AKU), and an additional survey which included questions specifically posed to persons with disabilities. All participants had either partly or very reduced work ability. There was more need for adaptation than for support, independently of work ability and current employment status. Around 60% of respondents with a psychological disability reported a need for adapted work pace and working time, both at their workplace and in order to enter the labour market. Adapted work tasks were an important factor, especially for persons who were not currently working; around half of the non-employed participants said this adaptation could make it possible for them to work, regardless of type of disability.

Keywords: type of disability; work ability; support; adaptation

Introduction

In order for a person to get and keep a job, it is generally important that there is a good match between the worker's capacity and the demands of the job. This match is probably even more important for persons with disabilities, largely because these individuals have become increasingly marginalized in contemporary working life (e.g. Danermark & Larsson Tholén 2016; OECD 2009; SCB 2017), and many gaps remain regarding acceptance and inclusion of persons with disabilities in the labour market (Vornholt, Uitdewilligen & Nijhuis 2013). Therefore, an important question is whether the workplace is designed to fit persons with disabilities, since a poorly adapted workplace can be a crucial barrier to getting and keeping a job. Persons with disabilities have two types of problems in the labour market: entering the labour market, and continuing to work after changes in functional capacity. This means that persons born with, or acquiring a disability in early age, have problems entering the labour market and that those who experience a later change of their functional capacity will have problems continuing to work. In many European countries, it is mandatory for employers to provide reasonable adaptation and support for persons with disabilities. Studies have shown that such accommodations increase both the probability of continuing to work after the onset of a disability, and the probability of a successful return to work after long-term leave due to a disability (Hogelund & Holm 2014).

From our own research, we know that the barriers to entering the labour market for persons with disabilities vary depending on the type of disability; for example, persons with psychological disabilities experience more difficulties in getting a job than persons with disabilities such as hearing impairment (Boman et al. 2015). In the present study, the need for support (personal assistant, aids, premises and transports) and adaptation (work pace, working time and work tasks) will be analysed separately, since support is essentially what society can offer and adaptation can mainly be seen as an issue for employers. Such forms of support and adaptation to persons with reduced work ability are commonly used, both nationally and internationally. Although some knowledge exists about the need structure for adaptation and support at the workplace for persons with disabilities, there is a need for further knowledge of the need structure for persons with different kinds of disabilities.

In the interaction between individual characteristics and the environment, the former have effects on the outcome, and reduced work ability represents a barrier to having and keeping a job (Boman et al. 2015). A recent survey of the situation on the Swedish labour market for persons with disabilities and reduced ability to work revealed that about 75% of such persons considered themselves to be in need of adapted working conditions or support to carry out their

work (Statistics Sweden 2015). Of these, a large majority (64%) needed more than one type of adaptation or support. Conditions in other EU countries are similar to those in Sweden (Iacovou, Kaminska & Levy 2012).

The present study aimed to contribute more knowledge in this area by analysing the reported needs of persons with reduced work ability in relation to various types of disabilities. This will shed light on the heterogeneity and homogeneity among persons with disabilities regarding the need for support, adaptation and flexibility related to these issues.

Adaptation sometimes seems to be a controversial issue. One barrier to employment is employers' attitudes toward hiring and supporting persons with disabilities (e.g. Burke et al. 2013). Employers generally report positive attitudes towards persons with disabilities, but many are unwilling to hire such persons. One reason for this reluctance is said to be the cost of adapting the workplace (Burke et al. 2013; Kaye, Jans & Jones 2011). However, a review by Ju, Roberts and Zhang (2013) revealed a willingness among employers to make accommodations for workers with disabilities. The studies they reviewed showed that employers reported multiple benefits from accommodating workers with disabilities, including retaining qualified employees, avoiding costs associated with hiring and training new employees, and increased business profitability (Hartnett et al. 2011). Further, Hartnett et al. (2011) and Hernandez et al. (2008) showed that providing accommodations also improves an organization's climate and culture, and that many accommodations require minimal or no additional costs. In line with this, Olson et al. (2001) reported that those respondents who were aware of the costs of accommodations indicated that these costs were low. However, Padkapayeva et al. (2016) found that although the provision of a flexible workplace (e.g. with adapted work tasks and work schedules) may seem not to be costly, it could require ongoing efforts from the employer.

It is worth asking whether the employer's view of adaptation depends on the type of disability that the worker has. A study by Zissi et al. (2007) showed differences in employers' attitudes to different types of disability. The employers perceived that it was easier to employ persons with medical, physical, and hearing impairments than those with a psychological disability. In addition to comparing the need for support and adaptation between persons with different types of disabilities, the present study provides an opportunity to compare the need for support and adaptation between persons with different degrees of self-rated ability to work. This is an important aspect of the labour market situation for persons with disabilities, since we know from previous research (Boman et al. 2014, 2015; Danermark & Larsson Tholén 2016), that persons with a very reduced work ability face more barriers in the labour market than persons with partly reduced work ability. The participants in the present study estimated if their work ability was partly or very reduced, which makes it possible to analyse differences in need for support and adaptation between these two groups.

Successful adaptation requires knowledge. A study of construction jobs such as bricklaying, carpentry and painting revealed that satisfactory adaptation of the work environment requires knowledge not only of the task to be performed but also of the physical, intellectual and organizational demands of jobs, and of the functional capabilities of workers with disabilities (de Guimarães, Martins & Junior 2015). While workers with hearing impairments could perform the work without any adaptations, some adaptation was necessary for persons with other physical impairments. The authors emphasized that if adaptations are to succeed, they must be carried out via a multidisciplinary team including the fields of occupational safety and ergonomics. In line with this, Filgueiras, Vilar and Rebelo (2015) used multidisciplinary teams to develop a method with a support tool, mainly for persons with physical disabilities, to match the individuals' capabilities and the real requirements of the workplace.

The importance of knowledge about the interaction between the person and different aspects of the work environment, when aiming at a satisfactory adaptation, can also be attributed to the relational approach to disability (Grönvik 2009). This model emphasizes that disability can be created by an unfavourable interaction between a person's specific functional limitations and their environment. Further, the model aims to identify and thereby eliminate factors in the surrounding environment and society that contribute to impairments becoming disabilities. Escorpizo et al. (2010) stated that the relational model is in line with, and has influenced, the International Classification of Functioning, Disability and Health (ICF). Besides, the relational model has also been a knowledge base in the development of the Convention on the Rights of Persons with Disabilities (CRPD), which encompasses values for disability policy intended to protect the rights and dignity of disabled persons and to ensure their right to be legally recognised before the law. That is, the CRPD has a focus on moral principles and values as a foundation of disability politics (Degener 2017; Traustadóttir 2009).

Based on the theory of social justice, Fraser (2001, 2003) elaborated the status model of social justice for marginalized groups. The model integrates two paradigms that complement each other: redistribution of resources and social recognition. Fraser (2001, 2003) argues that socio-economic imbalance is the foundation of injustice in society, and if this is to be resolved then a political/economic redistribution of resources in the community is necessary. The second paradigm of justice proposed by Fraser (2001, 2003) is social recognition, which has its roots in social psychology (e.g. social patterns of representation, interpretation and communication) and includes concepts such as misrecognition and disrespect. Social recognition means accepting other persons' characteristics and need for mutual respect that is achieved without giving in to the existing norms in a society (Fraser 2001, 2003). Fraser argues that in order to understand social recognition one must take into account the socio-economic dimension; that is, the two aspects are intertwined. Moreover, Fraser (2003) argued, in polemics with Honneth, that the emphasis on the cultural aspect leads to an underestimation of the importance of the socio-economic conditions for marginalized groups, for example persons with disabilities. Fraser is critical to the so-called cultural turn regarding social justice. In this perspective, social

recognition is seen as the fundamental category. Fraser's (2001, 2003) model of social justice for marginalized groups can be seen as a complement to the relational approach to persons with disabilities and their situation, as a key concept in the relational approach is how access to opportunities can be equalized. Thus, in accordance with Fraser's theory, it is important to give support and adapt the work environment in order to equalize the opportunities for persons with disabilities at the labour market, and the reallocation of resources is of great importance in accomplishing this. An implication of Fraser's approach is that the different forms of adaptations we are addressing in this article are an important part of social recognition, and that such adaptations needs societal resources, and these can be justified from a social justice perspective.

Aim and research questions

There has been only limited research on work adaptation for different types of disabilities. Previous investigations of support and adaptation for persons with disabilities (PWD) have described the situation of specific impairments (e.g. de Guimarães, Martins & Junior 2015; Filgueiras, Vilar & Rebelo 2015), rather than studying differences due to type of disability. Hence, the primary aim of this study was to examine the need for support and adaptation for employed and non-employed persons with four different kinds of disabilities. Further aims were to examine differences in the need for support and adaptation between persons with and without employment, and between persons with varying degrees of work ability. The following research questions were formulated:

- (i) What differences, if any, are there between employed persons with different types of disabilities in their need for support and adaptation in the workplace?
- (ii) Are these differences affected by gender, age group, and education level?
- (iii) What differences, if any, are there between non-employed persons with different types of disabilities in their need for support and adaptation to perform work?
- (iv) Are these differences affected by gender, age group, and education level?
- (v) Are there differences in reported needs between employed and non-employed PWD?
- (vi) Are there differences in reported needs between PWD with partly and very reduced work ability (employed and non-employed)?

Method

Participants

This study was a secondary analysis based on the regular labour market survey (AKU) and an additional survey conducted at the end of 2004 including questions specifically posed to persons with disabilities (Statistics Sweden 2005). Since 1996, the Swedish National Labour Market Board has carried out continuous investigations of the labour market situation for persons with disabilities, on behalf of the Swedish government. Of the 29,816 persons between 16 and 64 years of age who were interviewed, 5,160 stated that they had a disability of some sort. Some exclusions were made in the present study, due to the focus of the research questions. All respondents between the ages of 16 and 19 were excluded, as most of this group were still in secondary school and thus not yet available to the labour market. The 12 respondents who stated that they had an intellectual disability were also excluded, since they have legal rights via the Swedish Act Concerning Support and Service. Another 253 respondents were excluded since they reported a disability that was not among the alternatives given in the questionnaire. The final exclusion was respondents who reported more than one disability without giving information about which was the primary one. Following exclusion, 4,359 persons remained. These respondents were categorized as working or non-working. The working group consisted of those who had worked one hour or more during the current week; those who had sheltered employment, relief work, or a subsidy for starting their own company; and those who worked for the state-owned company that provides subsidized employment or recruitment support. It is worth noting that most of these respondents worked significantly more than one hour per week. The remaining 955 respondents were categorized in the non-working group, which included both those who reported seeking employment and those who did not wish to be employed. Since the present study was concerned with the need for workplace adaptation and support, only respondents who estimated their work ability as partly or very impaired were included. The final sample consisted of 2,268 respondents, 1,586 of whom were in the workforce and 682 of whom were non-employed (**Table 1**). The employed respondents were occupied within following areas: management (2.8%), work requiring special theoretical competence (11.7%), work requiring short university education (14.1%), office and customer service (10.2%), service, care and sales (24.5%), agriculture, gardening, forestry and fishery workers (3.3%), handicraft in construction and manufacture (14.1%), process, machine operator and transport worker (12.9%), military work (0.1%), and elementary occupation (6.3%).

Dependent variables

Support and adaptation

In the additional survey (Statistics Sweden 2005), seven questions were posed to employed respondents with partly or very reduced work ability, asking about their need for support (personal assistant, aids, premises, and transport) and adaptation (work pace, working time, and work tasks) in their current workplace. One example was 'Do you need an adapted work pace?' with response alternatives of 'yes', 'no', and 'do not know'. Respondents who were non-employed,

Table 1: Employed and non-employed participants divided by type of disability.

Type of disability	Employed	Non-employed
Communicative disability	245	72
Psychological disability	116	107
Medical disability	448	164
Physical disability	777	339
Total	1,586	682

with partly or very reduced work ability, were also asked seven questions about whether they would be able to perform work if they could have support and adaptation in the workplace. One example was 'Do you consider that you could perform work if you could have an adapted pace of work at the workplace?' with response alternatives of 'yes', 'no', and 'do not know/not relevant'. The response rate varied between the questions.

Independent variables

Type of disability

The categories of disabilities defined in Statistics Sweden's additional survey were deafness, hearing impairment, dyslexia, blindness/vision impairment, stuttering, language/speech or voice disorder, psychological impairment, asthma/allergy, diabetes, heart-lung condition, gastrointestinal disease, psoriasis, epilepsy, physical impairment and intellectual disability. Persons with more than one disability were asked to report their primary impairment. In our earlier studies (Boman et al. 2014, 2015) we divided the sample into six disability types: communicative-hearing, communicative-speech-reading, communicative-vision, psychological disability, medical disability and physical disability. However, in the present study it was not possible to divide the respondents with communicative disability into three groups, since these groups would then have been too small for statistical analyses. We therefore used a division into four groups: communicative, psychological, medical and physical disabilities.

Self-estimated work ability

In the additional survey (Statistics Sweden 2005), the respondents reported how impaired their work ability was as a result of their disability using three categories: 'very reduced', 'partly reduced' and 'not at all reduced'. As noted above, all those included in the present study had either partly ($n = 1,418$) or very ($n = 850$) reduced self-estimated work ability.

Control variables

Gender and age were included as two control variables. In total, 1,249 women (55.2%) and 1,019 men (45.8%) participated; 67.7% of the women and 72.8% of the men were employed, while the remaining 32.3% of the women and 27.2% of the men were non-employed. All were between 20 and 64 years of age, and were divided into five age groups with boundaries chosen to obtain a relatively even distribution between the age groups: 20–29, 30–39, 40–49, 50–59 and 60–64 years. The final control variable was the highest completed level of education, classified into three groups: primary school, secondary school and higher education.

Statistical analysis

The four questions concerning the need for support in the workplace, and their relation to disability group, were analysed using Pearson's chi-squared test with the help of SPSS 22.0 for Windows. The employed and non-employed groups were analysed separately. The three questions about need for adaptation at the workplace (employed) and in order to be able to work (non-employed) were analysed with logistic regression analyses using adapted work pace, working time and adapted work tasks as dependent variables for employed and non-employed respondents. In the first block, analyses were conducted on the influence of the type of disability, and in the second block the control variables gender, age group and educational level were entered. Communicative disability was chosen as the reference category for the independent variable disability group. In the employed group, the odds ratio (OR) was used as a measure of the probability of need for adaptation in the workplace, and in the non-employed group the OR was used as the probability of need for adaptation to be able to work.

Ethical review

The project was approved by the Regional Ethical Review Board in Uppsala, Sweden in April 2005 (ref: 2005:058).

Results

Type of disability – need for support and adaptation at the workplace

As shown in **Table 2**, the need for support among employed persons varied between the four disability groups concerning adapted aids and adapted transport. Persons with communicative (30.8%) and physical (29.7%) disabilities

Table 2: Percentages of employed participants reporting that they needed support to perform their work, divided by type of disability. Chi² analyses of group differences.

Type of support		Percentage needing support at work	χ^2	Df
Personal assistant				
Communicative	(n = 242)	2.1	ns	
Psychological	(n = 113)	4.4		
Medical	(n = 446)	1.6		
Physical	(n = 762)	2.5		
Aids				
Communicative	(n = 240)	30.8	107.15***	(3, n = 1556)
Psychological	(n = 112)	3.6		
Medical	(n = 447)	8.5		
Physical	(n = 757)	29.7		
Premises				
Communicative	(n = 242)	12.4	ns	
Psychological	(n = 113)	4.4		
Medical	(n = 440)	9.8		
Physical	(n = 686)	8.8		
Transport				
Communicative	(n = 242)	1.7	10.96*	(3, n = 1559)
Psychological	(n = 112)	1.8		
Medical	(n = 444)	0.9		
Physical	(n = 761)	3.8		

* $p < 0.05$, *** $p < 0.001$, ns = not significant.

needed adapted aids to a larger extent than those with a psychological (3.6%) or medical (8.5%) disability, and persons with a physical disability (3.8%) needed more help with transportation to their workplace than the other three disability groups (0.9%–1.8%). There were no significant differences between the groups in terms of need for a personal assistant and adapted premises.

Table 3 shows differences between disability groups regarding need for the three types of adaptation (work pace, working time and work tasks). Persons with a psychological disability were the most likely to report a need for adapted work pace (63.1%), and those with a communicative disability were the least likely (16.9%). Persons with medical (30.4%) and physical (41.3%) disabilities also reported a higher degree of need for adapted work pace in comparison to the reference group (communicative disability). The same pattern was found concerning need for adapted working time, with the highest degree of need seen among persons with a psychological disability (56.9%). A slightly different pattern was found concerning need for adaptation of work tasks, where persons with physical (52.3%) and psychological (42.7%) disabilities more often reported a need for adaptation. The difference between the medical group and the group with a communicative disability was not significant. The results were virtually unaffected when the influences of gender, age group, and education level were controlled (**Table 3**).

Type of disability – Need for support and adaptation to perform work

The need for support to perform work varied between non-employed persons in the four disability groups (**Table 4**). One significant difference was the need for a personal assistant, where persons with psychological (20.5%) and communicative (16.0%) disabilities reported the highest need. There was also a substantial difference concerning access to aids; 50.9% of the group with communicative disabilities considered this important for their ability to work, whereas the need among the other three types of disabilities ranged from 6.9% to 27.3%. The need for adapted premises also differed between the groups, with persons with communicative (23.2%) and medical (22.6%) disabilities reporting more need for this support than persons with psychological and physical disabilities (10.6% and 14.0%). No differences were found between the groups regarding support with transport.

Non-employed respondents with a psychological disability (62.2%) reported a significantly higher need for an adapted work pace compared to the other three disability groups. Differences between the other three groups were

Table 3: Percentages of employed participants reporting that they needed adaptation at the workplace, divided by type of disability. Logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) with and without controlling for gender, age group and education level.

Type of adaptation	Percentage needing adaptation at work	OR	95% CI	OR after control
Work pace				
Communicative (n = 242)	16.9	1		
Psychological (n = 111)	63.1	8.37***	5.02–13.96	8.28***
Medical (n = 438)	30.4	2.14***	1.44–3.17	2.29***
Physical (n = 743)	41.3	3.45***	2.39–4.98	3.32***
Working time				
Communicative (n = 242)	14.0	1		
Psychological (n = 109)	56.9	8.07***	4.78–13.64	8.93***
Medical (n = 445)	22.7	1.80**	1.17–2.75	2.12**
Physical (n = 755)	44.1	4.83***	3.27–7.13	5.04***
Work tasks				
Communicative (n = 239)	24.7	1		
Psychological (n = 110)	42.7	2.28**	1.41–3.67	2.26**
Medical (n = 444)	23.4	0.93	0.65–1.35	0.94
Physical (n = 742)	52.3	3.34***	2.41–4.64	3.30***

** $p < 0.01$, *** $p < 0.001$.

Data coding: 0 = no, 1 = yes; i.e., a high odds ratio implies a higher degree of need.

Table 4: Percentages of non-employed participants reporting that they would need support to perform work, divided by type of disability. Chi² analyses of group differences.

Type of support	Percentage needing support to perform work	χ^2	Df
Personal assistant			
Communicative (n = 50)	16.0		
Psychological (n = 83)	20.5	12.90**	(3, n = 517)
Medical (n = 124)	9.7		
Physical (n = 260)	7.3		
Aids			
Communicative (n = 53)	50.9		
Psychological (n = 87)	6.9	42.74***	(3, n = 537)
Medical (n = 126)	15.1		
Physical (n = 271)	27.3		
Premises			
Communicative (n = 56)	23.2		
Psychological (n = 85)	10.6	8.69*	(3, n = 538)
Medical (n = 133)	22.6		
Physical (n = 264)	14.0		
Transports			
Communicative (n = 54)	11.1		
Psychological (n = 90)	7.8	ns	
Medical (n = 132)	7.6		
Physical (n = 258)	7.2		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns = not significant.

not significant (communicative disability: 29.6%, medical disability: 39.9%, physical disability: 33.9%). The results concerning need for adapted working time showed the same pattern, with the highest degree of need among persons with a psychological disability (61.5%) and no differences between the other three groups (21.2%–32.6%). The need for adapted work tasks was high in all four disability groups (48.6%–55.6%), and no significant differences were found between the groups. The results remained after controlling for gender, age group and education level (**Table 5**).

Differences between the needs of employed and non-employed persons

In terms of differences in the need for support and adaptation between persons with and without employment, the general pattern was that non-employed persons more often reported a need for support and adaptation compared to employed persons (**Table 6**). However, this difference was only significant for personal assistant, premises, transport and work tasks. For aids, work pace and working time there were no differences between employed and non-employed respondents.

Differences between PWD with partly and very reduced work ability

There were also some differences in the need for support and adaptation between persons with varying degrees of ability to work (**Table 7**). The general pattern was that persons with very reduced work ability reported a higher degree of need for support and adaptation than persons with partly reduced work ability. Significant differences between the groups were seen in need for personal assistant, transport, work pace, work tasks and working time. There were no significant differences in need for support with aids or adapted premises.

Discussion

In the present study we found that the need for support and adaptation varied according to type of disability. Persons with psychological disabilities were strongly overrepresented in several of the dimensions, reporting a high need for adapted work pace, work time and work tasks regardless of whether they were currently employed or whether they had partly or very reduced work ability. Adaptations of work pace and work time seemed to be crucial factors, as almost two out of three respondents with a psychological disability expressed their need for this at their present workplace. The pattern was the same for their non-employed counterparts, who reported that adaptations of work pace and work time would make it possible for them to enter the labour market. It is also worth noting that 20.5% of the non-employed respondents felt that they could perform work if they received support from a personal assistant.

These results reveal the need structure for persons with a psychological disability to get and keep a job: adapted work tasks, work pace and work time, along with access to personal assistance. The results also indicate that their need for

Table 5: Percentage of non-employed participants reporting that they would need adaptation to perform work, divided by type of disability. Logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) with and without controlling for gender, age group and education level.

Type of adaptation		Percentage needing adaptation to perform work	OR	95% CI	OR after control
Work pace					
Communicative	(n = 54)	29.6	1		
Psychological	(n = 90)	62.2	3.91***	1.89–8.06	3.50**
Medical	(n = 138)	39.9	1.57	0.80–3.10	1.77
Physical	(n = 280)	33.9	1.22	0.65–2.30	1.50
Working time					
Communicative	(n = 52)	21.2	1		
Psychological	(n = 91)	61.5	5.96***	2.71–13.11	5.70***
Medical	(n = 138)	32.6	1.80	0.85–3.84	2.01
Physical	(n = 280)	28.9	1.51	0.74–3.10	1.72
Work tasks					
Communicative	(n = 58)	53.4	1		
Psychological	(n = 90)	55.6	1.09	0.56–2.11	0.96
Medical	(n = 144)	48.6	0.82	0.45–1.52	0.95
Physical	(n = 282)	48.6	0.82	0.47–1.45	1.11

** $p < 0.01$, *** $p < 0.001$.

Data coding: 0 = no, 1 = yes; i.e., a high odds ratio implies a higher degree of need.

Table 6: Percentages of employed and non-employed participants reporting a need for support and adaptation. Chi² analyses of group differences.

Type of support and adaptation		Need of support and adaptation	χ^2	Df
Support				
Personal assistant				
Employed	(n = 1563)	2.3		
Non-employed	(n = 517)	10.8	66.84**	(1, n = 2080)
Aids				
Employed	(n = 1556)	21.9		
Non-employed	(n = 537)	23.5	<i>ns</i>	
Premises				
Employed	(n = 1547)	9.3		
Non-employed	(n = 538)	16.5	21.05*	(1, n = 2085)
Transports				
Employed	(n = 1559)	2.5		
Non-employed	(n = 554)	7.8	30.32**	(1, n = 2113)
Adaptation				
Work pace				
Employed	(n = 1534)	35.9		
Non-employed	(n = 562)	39.5	<i>ns</i>	
Working time				
Employed	(n = 1551)	34.2		
Non-employed	(n = 561)	34.4	<i>ns</i>	
Work tasks				
Employed	(n = 1535)	39.0		
Non-employed	(n = 574)	50.2	21.58**	(1, n = 2109)

* $p < 0.05$, ** $p < 0.01$, *ns* = not significant.

adaptation of the workplace is not met; that is, employers are unable to adapt the workplace in order to provide the support needed by persons with psychological disabilities. Why does this group stand out? Aside from the need for a personal assistant, the cost of the requested adaptations seems to be relatively low. This is in line with the conclusion of earlier research (Hartnett et al. 2011; Hernandez et al. 2008; Ju, Roberts & Zhang 2013; Olson et al. 2001) that the costs of adaptation are not a crucial factor. An alternative explanation might be lay misconceptions about the nature of persons with a psychological disability, with employers assuming that persons with psychological disabilities would require greater supervision and attention (Ju, Roberts & Zhang 2013). However, Padkapayeva et al. (2016) pointed out another view concerning the cost of adapting work tasks, work pace and working hours; namely that these forms of adaptations could require an ongoing effort from the employer, which might affect their willingness to adapt the workplace and hire persons with psychological disabilities.

The results also showed that persons with a communicative disability differed from the other groups in a number of dimensions. Employed persons with communicative disabilities reported a significantly lower degree of need for adapted work pace and work time compared with the other groups. The pattern was the same for their non-employed counterparts, but here the differences between the groups were not significant. Adaptation of the work tasks seemed to be a crucial factor for non-employed persons with communication difficulties (53.4% for non-employed vs. 24.7% for employed). The results also showed that support with aids was important for persons with communication difficulties; especially for those who were not employed, 50.9% of whom reported a need for this support to be able to work. The non-employed also expressed that adapted premises were important to allow them to work. As for the group with a psychological disability, non-employed respondents with a communicative disability also reported that they would be able to perform work if they received support from a personal assistant. The need structure for non-employed persons with communicative disabilities mainly concerned aids and adapted work tasks to make it possible to enter the labour market. This implies that poor access to adequate aids and adapted work tasks is one barrier to work for non-employed

Table 7: Percentage of participants with partly and very reduced work ability reporting a need for support and adaptation. Chi² analyses of group differences.

Type of support and adaptation	Need of support and adaptation	χ^2	Df
Support			
Personal assistant			
Partly reduced work ability (n = 1321)	3.1		
Very reduced work ability (n = 759)	6.7	14.91**	(1, n = 2080)
Aids			
Partly reduced work ability (n = 1338)	20.7		
Very reduced work ability (n = 755)	25.2	ns	
Premises			
Partly reduced work ability (n = 1329)	10.0		
Very reduced work ability (n = 756)	13.2	ns	
Transports			
Partly reduced work ability (n = 1332)	2.5		
Very reduced work ability (n = 781)	6.3	19.02**	(1, n = 2113)
Adaptation			
Work pace			
Partly reduced work ability (n = 1331)	32.8		
Very reduced work ability (n = 765)	43.9	25.66**	(1, n = 2096)
Working time			
Partly reduced work ability (n = 1348)	31.3		
Very reduced work ability (n = 764)	39.4	14.18**	(1, n = 2112)
Work tasks			
Partly reduced work ability (n = 1348)	38.2		
Very reduced work ability (n = 761)	48.8	22.21**	(1, n = 2109)

** $p < 0.01$, ns = not significant.

persons with communicative disabilities; these are important aspects in the information society of today, which demands good communication skills.

Persons with physical and medical disabilities differed from the other groups in some aspects. One notable result is that employed respondents with a physical disability (52.3%) reported the highest need for adapted work tasks, while persons with a medical disability (23.4%) reported the lowest. Moreover, in terms of aids, the same results emerged as for the group with a communicative disability. However, the need for aids was almost the same among non-employed (27.3%) and employed (29.7%) persons with a physical disability.

In terms of differences between employed and non-employed persons' need for support and adaptation, the overall pattern was that respondents who did not have a job reported higher need for both support and adaptation compared to those who had a job. As mentioned before, adapted work tasks were an important factor, especially for the non-employed, where about 50% in all four disability groups reported that adaptation of work tasks could make it possible for them to work. In a survey by Statistics Sweden (2017), 66% of persons with reduced work ability stated that they would be able to work if they received support and adaptation. The conclusions from that report were that everyone who can work and wants to work should have the opportunity to participate in working life based on their ability, and that they also should receive support from both their employer and the social insurance system. When support is offered to persons who have reduced work ability, the individual and society in general benefit from counteracting exclusion. This reasoning is in line with Fraser's (2001, 2003) theory of the importance of recognition and redistribution as well as the relational approach (Grönvik 2009). Moreover, in Sweden and in many European countries, employers have an obligation to provide reasonable adaptation and support to persons with disabilities (Högelund & Holm 2014).

It was an unsurprising result that respondents with a very reduced work ability reported higher needs for all forms of support and adaptation compared to respondents with only partly reduced work ability. Specific differences to point

out were that the group with very reduced work ability had a higher need for an adaptation of work pace, working time and work tasks compared to respondents with partly reduced work ability. Analysis of the demographic variables showed that respondents with a psychological disability considered that they had very reduced work ability to a higher degree (47%) than the other three disability groups. The explanation for this might lie in the difference between visible and hidden disabilities, or in attitudes, stereotypical beliefs, and fear of the unknown. This is supported by research showing that persons with a psychological disability evoke feelings of vulnerability and anxiety, and that the values of the environment play a crucial role in the treatment of these persons (e.g. Grue, Johannessen & Rasmussen 2014; Michailakis & Reich 2005). One possible explanation is that this view is reflected in the person's own self-perception and belief in their own ability. A psychological disability could also be considered a hidden disability, which can contribute to difficulties in clarifying one's needs to an employer. Thus, persons with a psychological disability with very reduced work ability are a group at risk of being excluded from the labour market. According to Fraser's (2001, 2003) status model of recognition and redistribution, it is important for employers to gain knowledge about the specific needs of support and adaptation among people with a psychological disability, which in turn can change employers' attitudes and increase inclusion in the labour market. It is also important for society to redistribute resources so that employers are able to meet the needs for support and adaptation of persons with a psychological disability. In summary, we can conclude that there was a higher need for adaptations related to the actual work situation than for specific support in the physical work environment.

Strengths and limitations

One strength of the present study is its use of official statistics, which increases the generalisability since the sample size is large and the study population is likely to be representative of the national population of both employed and non-employed persons with disability and reduced work ability. There is a balance to be made in choosing how many groups to divide a research material into. In our previous studies, we divided the communicative group into three groups: 'communicative-hearing', including respondents with deafness or hearing impairments; 'communicative-speech-reading', including respondents with dyslexia, stuttering, or a language/speech or voice disorder; and 'communicative-vision', including respondents with blindness and vision impairment. The reason for dividing the group with communicative disabilities was that we considered it likely that the group with a hearing impairment would differ in many respects from others with a communicative impairment. However, a limitation in the present study was that it was not possible to divide the communicative disability group into three groups, since these groups would have been too small. This means that we cannot analyse whether the need structure for support and adaptation varied within the communicative group. Another limitation is that only one question was asked concerning work ability; the respondents were asked to report the degree to which their work ability was reduced, with response alternatives of 'partly' and 'very' reduced. It is clearly not satisfactory to address the concept of impaired work ability using one simple question, and the use of several items to measure work ability would have increased the validity of the results. Moreover, the estimation the respondents made of their impaired work ability was probably connected to the demands placed by their work, and if a respondent has a certain job, it is probably because his/her disability does not pose a serious obstacle to manage this job. Non-employed may have another basis for estimation of work ability. They may discover that there are jobs that they cannot perform due to their disability. This could be one reason for estimating work ability as more reduced.

Another aspect to consider is the relevance of the study from an international perspective. A comparison between Sweden and other EU countries showed that Sweden had the highest employment rate for persons with reduced work ability of all countries in the EU. This was especially true for women, the elderly and persons with very reduced work ability (Danermark & Larsson Tholén 2016). However, one must take into account that many EU countries use a quota system (Fuchs 2014), which means that employers, in both public and private sector, have an obligation to employ persons with disabilities. Sweden and other Nordic countries have prioritised other forms of support instead (e.g. rehabilitation, vocational training, work training, public support to employers and to PWDs). Therefore, there are some limitations to generalise the results of this study to other EU countries.

Finally, the fact that this study was based on Statistics Sweden data from 2004 could also be considered a limitation. Changes that have taken place in 2005–2019 have made it easier for most groups in society to get a job. One reason for this is that the labour market situation has generally been favourable in recent years (Statistics Sweden 2017, 2020). However, this change does not apply to persons with disabilities, since today they are largely at the same unemployment level as they were in the 2000s. (e.g. Danermark & Larsson Tholén 2016). That is, recent research indicates that the structural situation for persons with disabilities has not changed significantly over the past 16 years (Statistics Sweden 2017, 2020). A tentative conclusion when comparing our data with Statistics Sweden's Labour Market investigation conducted 2019 (Statistics Sweden 2020) is that the need for support and adaptation has increased, or is similar, for most forms of support and adaptation. Furthermore, the distribution by type of disability, support and adaptation is also relatively constant over time. Therefore, it is likely that the same barriers exist today as then. It may even be the case that the barriers have increased, since today's working life involves increasing demands in terms of the work itself (pace, time and tasks). This is probably valid seen from both a national and international perspective.

Conclusion

Among persons with reduced work ability due to disability, the need for support and adaptation at the workplace and to enter the labour market is related to type of disability. Respondents with a communicative disability had a high need for support, particularly in terms of the need for aids, where the non-employed expressed that access to adequate aids could make it possible for them to work. Adaptation of the work pace and work time seemed to be crucial factors, as about 60% of respondents with a psychological disability expressed a need for this regardless of their current employment status. Respondents with a communicative disability were the least likely to report these needs. Adapted work tasks were an important factor, especially for respondents who were not currently working; around half of the non-employed participants said this adaptation could make it possible for them to work, regardless of type of disability. Respondents with very reduced work ability reported high needs, especially for adapted work pace, working time and work tasks. Our results imply that there are substantial existing barriers for persons with disabilities, especially those with a psychological disability, both at their present workplace and to enter the labour market. This indicates that employers are unable to adapt the workplace and that society cannot provide the support that these persons need. Thus, the new contribution of this study is that the need for support and adaptation depends on: the type of disability, the degree of reduced work ability and whether one has a job or not. This knowledge is important to further develop individually tailored support and adaptation, especially one that considers the person's type of disability.

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Competing Interests

The authors have no competing interests to declare.

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