Sickness and sickness absence of remaining employees in a time of economic crisis: A study among employees of municipalities in Iceland

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ABSTRACT

This article focuses on sickness and sickness absence among employees of 20 municipalities in Iceland who remained at work after the economic crisis in October 2008. The aim was to examine the impact of economic crisis on sickness and sickness absence of “survivors” working within the educational system (primary school teachers and kindergarten teachers) and the care services (elderly care and care of disabled people) operated by the municipalities. The study was based on mixed methods research comprising a balanced panel data set and focus groups. An online survey conducted three times among 2356 employees of 20 municipalities and seven focus group interviews in two municipalities (39 participants). The generalized estimating equations (GEE) were used to analyze the quantitative data, and focused coding was used to analyze the qualitative data. The main finding showed that the economic crisis had negative health implications for the municipal employees. The negative effects grew stronger over time. Employee sickness and sickness absence increased substantially in both downsized and non-downsized workplaces. However, employees of downsized workplaces were more likely to be sick. Sickness and sickness absence were more common among younger than older employees, but no gender differences were observed.

The study demonstrates the importance of protecting the health and well-being of all employees in the wake of an economic crisis, not only those who lose their jobs or work in downsized workplaces. This is important in the immediate aftermath of a crisis, but also for a significant time thereafter. This is of practical relevance for those responsible for occupational health and safety, as most Western countries periodically go through economic crises, resulting in strains on employees.

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1. Introduction

In October 2008, Iceland was a society at a crossroads, as all three of the country’s major commercial banks collapsed, resulting in serious consequences for society. Until the beginning of the 20th century, Iceland was among the poorest nations in Europe. The situation improved during the 20th century, and 15 years before the crisis, the economy saw substantial economic growth. Opinion polls showed a historic peak in economic expectations, and Iceland was becoming one of the most prosperous countries in the world (Ragnarsson et al., 2013). Therefore, the collapse of the banks created an abrupt change in Icelandic society; though ups and downs continued to characterize the society. By mid-2012, Iceland was regarded as one of Europe’s recovery success stories (Forelle, 2012). It had two years of economic growth, and unemployment dropped from 11.9% (2010) to 6.3% (2012). In September 2014, it was at 4.1% (Statistic Iceland, e.d.). However, Ragnarsson et al. (2013) show that the crisis triggered subjective deprivation and emotional distress due to the affects households and livelihoods. This phenomenon makes Iceland a suitable test case for examining the general lack of well-being among employees in the wake of economic crises. With that in mind, we used longitudinal panel data and focus group interviews to investigate measures of sickness and sickness absence among employees who remained at work after the economic crisis in October 2008 in 20 municipalities in Iceland.

Municipalities play significant roles in every community, both as service providers and employers, as they are legally bound to provide welfare services for all residents. Within these welfare
services, education is the main function, accounting for about half of every municipality’s expenditures. In many communities, the municipality is the largest employer, especially in smaller and rural areas (Samband íslenska sveitarfélaga, 2011). Even if the economic crisis had hit the banking and retail sectors more significantly, the crisis would have deeply affected the municipalities. Many of them have reacted with cutbacks in services and construction projects, with varying degrees of success (Samband íslenska sveitarfélaga, 2011). Some municipalities have also reduced their wage costs by cutting down over time, instituting hiring freezes, offering voluntary retirement, and restructuring jobs. In addition, some municipalities have laid off employees, a previously uncommon approach in the Icelandic public sector.

This study examined sickness and sickness absence of employees who work within the educational system (primary school teachers and kindergarten teachers) and the care services (elderly care and care of disabled people) in the wake of the economic crisis. These occupational groups are particularly interesting because of prior job security and close contact with large numbers of families in the communities. We also analyzed whether the sickness and sickness absence increased between the years 2010 and 2013. Unfortunately, we do not have quantitative data from before the crisis, and no registered data of frequency of sickness absence exist, so the effect size might be underestimated. However, we have results from the focus group interviews, which compensate for the lack of data before the crisis. Snorradóttir et al. (2013a) showed that the effect of downsizing among bankers was strongest among employees who worked in a downsized department. We went further and asked whether sickness absence was greater in workplaces that were downsized than in workplaces that were not. As Snorradóttir et al. (2013b) showed that downsizing affected female and male bankers differently; here, we also ask if the crisis affected women and men in different ways.

1.1. Downsizing, sickness, and sickness absence

According to Archibald (2009) and Carter et al. (2013), studies on well-being and sickness among employees who have seen downsizing in their workplaces but have not been laid off themselves are uncommon; the focus has been on workers who have been laid off. In addition, there are certain inconsistencies in studies on sickness absence. Some studies show a link between downsizing and increased sickness absence among employees (Bryngelson et al., 2011; Røed and Fevang, 2007; Snorradóttir et al., 2013a; Vahtera et al., 1997), whereas others find no or a very small connection (Westerlund et al., 2004a; Østhus and Masteekaasa, 2010). Several longitudinal studies on employees who remain at work after downsizing have shown adverse health consequences such as depression (Grunberg et al., 2001; Kivinäki et al., 1997; Moore et al., 2004), increased sickness absence (Bryngelson et al., 2011; Vahtera et al., 1997, 2004), musculoskeletal complaints (Kivinäki et al., 2001), demand for disability pensions (Vahtera et al., 2005), and risk of mortality (Vahtera et al., 2004). Stressful conditions at work due to downsizing appeared to be the main cause of these adverse effects (Moore et al., 2004; Westerlund et al., 2004b). Kivinäki et al. (2000a,b) explored the underlying mechanisms connecting organizational downsizing and the deteriorating health of municipal employees who remained in employment after downsizing in Finland. The sickness absence rate was much higher following major than minor downsizing. Only part of the increase in sickness absence could be explained by the downsizing alone; changes in work characteristics were also significant factors. The authors concluded that downsizing resulted in changes in work, social relationships, and health-related behaviors. Different from our studies, these results say nothing about changes in sickness absence in workplaces where no downsizing occurred. Allen et al. (2001) discovered that downsizing had a significant impact on work attitudes, that the impact varied over time, and that the initial impact of survivors’ attitudes was generally negative. Because of changed attitudes and behaviors, organizations can expect increasing slowdown, absenteeism, and higher turnover among employees who remain at work (Jick and Greenhalgh, 1989).

In Bryngelson et al.‘s (2011) study of Swedish county councils, a 1% reduction in staff numbers increased the sickness rate on average by 9% for both genders. Conversely, Theorell et al. (2003) found that downsizing in Sweden decreased sickness absence among women but not men. Westerlund et al. (2004a) used the biennial national Swedish Work Environment Survey to explore changes in personnel and long-term medically certified sickness absence and hospital admissions. According to their results, moderate downsizing (reductions of 8–18% of employees per year) is related to a slightly increased risk of long-term sickness absence and hospital admissions, but no relationship was found for large downsizing (more than 18% staff reduction per year). The strongest association was among women in the public sector. Røed and Fevang (2007) also found evidence that downsizing increased sickness absence among Norwegian nurses but, unlike Westerlund et al. (2004a), they found that major organizational changes caused a higher risk of absence from work due to sickness than minor organizational changes. On the other hand, Østhus and Masteekaasa (2010) concluded that, overall, downsizing has only minor if any effects on the sickness absence of Norwegian employees, and there are only weak indications that downsizing may lead to slightly less sickness absence.

We may not be able to assert that downsizing is the only cause of sickness absence. Kivinäki et al. (2000a,b) inferred that stressful working conditions, such as increased job demands, less job security, and decreased social support during downsizing, might have a negative effect on the health of employees and lead to increased absence from work. Sickness is not always the reason for absence from work, although it is the reason employees commonly give (Johansson and Lundberg, 2004; Voss et al., 2001; Østhus and Masteekaasa, 2010), as absence may be a way of coping with stressful situations at work (e.g., Van Rhenen et al., 2008). Other employees, especially those who are strongly committed to, or highly satisfied with, their work will avoid withdrawing their labor and sometimes attend work as usual while sick (Elstad and Vabo, 2008). In the light of this, we chose to use both panel and focus group data in this article to understand the frequency of sickness and sickness absence, as well as the reasons behind, and discourse around, that behavior.

1.2. Data

This work is part of a longitudinal study called Health and well-being of employees of municipalities in Iceland in times of economic crisis. The study was approved by the National Bioethics Committee in Iceland (VSN10-007). The number of employees in the municipalities in 2012 was about 23,000, or about 12.6% of the total Icelandic workforce. Participants came from 20 out of 74 municipalities in Iceland (six from the capital area and 14 outside the capital area), covering about 50% of those working for the municipalities. We requested participation from all 22 municipalities with more than 2000 inhabitants; 20 agreed to participate in the study and two declined. One of the excluded municipalities was the capital city, which is the largest municipality in Iceland, and has about 38% of the total municipality employees. Two complementary approaches were used for data collection: online surveys and focus groups. The online surveys were used to examine the prevalence of sickness and sickness absence, and the focus group...
interviews were used to gather insights on attitudes, feelings, beliefs, experiences, and reactions pertaining to (lack of) well-being and the crisis in a way that would not be feasible using other methods. The focus group interviews were also designed to obtain information about the workplaces before the crisis, since the first measure point of the online survey is 2010: 16 months after the crisis began.

1.3. Online survey and sample

An online survey was conducted three times: first in February–April 2010 (baseline study), then in May–June 2011 (follow-up study 1), and lastly in February–April 2013 (follow-up study 2). All employees with permanent positions (50% or higher) were included in the survey. The survey was sent to 7329 employees in 2010, 4724 of whom responded (response rate 65%) following three email reminders. The response rate of the original cohort still at work was 61.9% in 2011 and 65.9% in 2013. In this article, we only used answers from participants who responded to the survey in all three time points of the survey, in order to monitor changes for each individual. Excluded participants were deleted from the data set. Of the 4724 baseline responders, 4599 were still working 16 months later, at the time of follow-up study 1, and 3647 (80%) responded to the questionnaire a second time after three email reminders. Of the 3647 follow-up 1 responders, 3519 were still working 20 months later, at follow-up study 2. Of these, 2971 responded to the follow-up study 2 questionnaire a third time (84% response rate) after three email reminders, covering all occupational groups. In this article, we use only answers from four occupational groups, employees in education (primary school and kindergarten teachers) and care services (elderly care and care of disabled people), totaling 2356 employees (297 men and 2059 women). Answers from other occupational groups were deleted from the data set. The number of participants varied slightly in the analyses, owing to some missing values on the predictor variables.

1.4. Survey questions

The questionnaire devised for this study was mainly based on two other questionnaires: the Icelandic version of the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS Nordic) and the questionnaire from Health and Well-Being of The Icelandic Nation, published by the Icelandic Public Health Institute. Additional questions were added about personnel reductions and internal reorganization. In this article, we use only answers from four occupational groups, employees in education (primary school and kindergarten teachers) and care services (elderly care and care of disabled people), totaling 2356 employees (297 men and 2059 women). Answers from other occupational groups were deleted from the data set. The number of participants varied slightly in the analyses, owing to some missing values on the predictor variables.

1.5. Statistical processing

Exploratory data analysis was used to examine the differences between independent variables and dependent variables with appropriate statistical tests, Cochran’s Q test, and chi-square test with continuity correction. Generalized estimating equations (GEE) were used to evaluate the impact of downsizing on sickness and sickness absence over time and at specific time points. The GEE method has several advantages for analyzing longitudinal data. For example, it uses all available data points, provides a method for handling the correlated nature of repeated measurements, and accounts for the pattern of change over time. A binomial distribution with a logistic link function was employed to evaluate the dichotomous dependent variables. We selected a first-order exchangeable correlation structure. Main effects models (time point of the study, downsizing, gender, age, marital status, parental status, and occupation) and interaction (downsizing * time point of the study) were tested. We obtained the odds ratio (OR), 95% confidence interval (CI), and associated p-value for each predictor in the GEE models. Statistical tests were conducted at 5% level of significance. Exploratory data analyses and GEE models were obtained from SPSS version 210.

1.6. Focus groups

Seven focus group discussions were conducted in two municipalities in January and February 2010. These two municipalities are similarly populated and have both laid off employees due to downsizing following the crisis. One is located within and the other is outside the capital area. However, we do not compare the results based on municipalities. The purpose of the focus groups was to gain further insights into the well-being and health of municipality employees in times of economic crisis and to examine the nature of certain behaviors to complement the results of the email survey. The personnel manager in each of the two municipalities urged employees, aged 25 or older, who had been working in their current workplace for at least 6 months prior to the economic crisis, to participate in the focus groups. All participants signed informed consent.

Primary school teachers formed 2 groups, kindergarten teachers formed 3 groups, and elderly care workers and providers of care to disabled people formed 1 group each. The seven focus groups consisted of 39 employees (workers and middle management): 34 women and 5 men, which reflected the gender ratio of the employees. The average age was 42 years (range 25–58 years).

The interviews were conducted by the authors using a semi-structured framework to ask the participants about changes in the workplace after the economic crisis; the impact of the crisis on them personally and on their workplaces, job security, atmosphere, and well-being in the workplace; absence of employees; social support; and communication between co-workers and workers and managers. The participants were encouraged to discuss the topics freely. Each focus group lasted about 60–90 min. The discussions were recorded and transcribed verbatim. The coded key word approach was used to analyze the data. The focus groups
notes were read thoroughly, and a code/key word was assigned to each comment to identify themes and categories within the text. The quotes were translated from Icelandic into English.

2. Results

2.1. Characteristics of the study sample

Table 1 shows the increase in reported downsizing between the first and the two follow-up studies for all factors assessed. Sixteen months after the Icelandic banks fell, more than 25% of participants reported that employees in their organization had been laid off or resigned because of the economic crisis. The proportion rose to nearly 46% in 2011 and to 51% in 2013 ($\chi^2 (2, 2356) = 771.2; p < 0.001$). Downsizing occurred 6.5% more among men than women in the first study ($\chi^2 (1, 2356) = 5.0; p < 0.05$), but this difference was lower in follow-up studies 1 (4.5%) and 2 (4.7%). A higher proportion of primary school teachers (32.8%, 56.6%, and 62.3%) in the first study and the follow-up studies, respectively, were laid off than kindergarten teachers (19.9%, 26.2%, and 30.6%) and providers of care to the elderly and disabled people (8.2%, 20.5%, and 26.8%) at workplaces where downsizing occurred (2010: $\chi^2 (2, 2356) = 80.3; p < 0.05$; 2011: $\chi^2 (2, 2356) = 217.7; p < 0.05$; 2013: $\chi^2 (2, 2356) = 225.6; p < 0.05$). The interviews reflected this.

2.2. Job insecurity and stress

All the focus group participants agreed that downsizing on the scale mentioned above was something they thought would never happen in their field of work. One primary school teacher said: “It never came into my head that in my type of work employees would be laid off. They will always have a need for us. That’s what you associated with employment in municipality sector no longer exists. Some respondents reported disappointment or anger over this, especially those who experienced increased workloads because of employee shortages.

Generally, the participants reported having felt positive about their workplaces and having considered the atmospheres quite good, but that this had changed. Since the crisis, people had become afraid, confused, and angry. Everyone tried to do well at work and leave personal issues at home to avoid allowing the national economic situation to overwhelm them. According to the participants, very few employees were absent due to sickness at the beginning of the crisis and everyone acted as a team. However, as time passed and people were confronting long-term stressful situations at home and work, employees began to react differently. Nevertheless, for some, their loyalty to the workplace and to the recipients of their services increased. This was particularly the case among the primary school teachers, who were concerned about schoolchildren living in poor conditions at home because of the crisis. Other participants mentioned reduced commitment to the organization and decreased job satisfaction.

2.3. Sickness and sickness absence

Table 2 presents descriptive statistics for sickness and sickness absence at all three time points of the study. Interestingly, sickness absence increased between all of the points (Cochran’s Q test ($\chi^2 (2, 2354) = 56.2; p < 0.001$), and the proportion of employees who had reported more than 7 sick days also increased ($\chi^2 (2, 2354) = 27.0; p < 0.001$). This applied to both women and men. The proportion of employees who had never been absent due to sickness dropped, both in downsized and non-downsized workplaces. In addition, there was an increase in the number of days employees remained off work due to sickness, both at downsized and non-downsized workplaces. The participants pointed out that, although some employees took sick leave when they were merely tired, other employees continued to work even when they were genuinely sick.

The proportion of those who had gone to work while sick increased between the time points ($\chi^2 (2, 2356) = 88.6; p < 0.001$) and was higher at downsized workplaces for all time points (2010: $\chi^2 (1, 2356) = 11.8; p < 0.001$; 2011: $\chi^2 (1, 2356) = 11.7; p < 0.001$; 2013: $\chi^2 (1, 2356) = 17.0; p < 0.001$). The proportion of those who had visited a doctor because of illness or health problems due to the situation in the workplace in the past 12 months increased between the time points of the study ($\chi^2 (2, 2356) = 46.3; p < 0.001$) and was higher at downsized workplaces (2010: $\chi^2 (1, 2356) = 71.2; p < 0.05$; 2011: $\chi^2 (1, 2356) = 77.0; p < 0.001$).

Table 1

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<thead>
<tr>
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<tbody>
<tr>
<td>Nagin-DS</td>
<td>Nagin-DS</td>
<td>Nagin-DS</td>
<td>Nagin-DS</td>
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<tr>
<td>Married or cohabiting</td>
<td>84.2%</td>
<td>27.7%</td>
<td>72.3%</td>
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<td>Single</td>
<td>15.8%</td>
<td>25.9%</td>
<td>74.1%</td>
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<tr>
<td>Parental status</td>
<td>32.6%</td>
<td>25.5%</td>
<td>74.1%</td>
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<tr>
<td>No children</td>
<td>67.4%</td>
<td>28.1%</td>
<td>71.9%</td>
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<tr>
<td>With children</td>
<td>32.8%</td>
<td>67.2%</td>
<td>56.6%</td>
</tr>
<tr>
<td>Occupation</td>
<td>66.4%</td>
<td>19.9%</td>
<td>80.1%</td>
</tr>
<tr>
<td>Primary school teacher</td>
<td>24.3%</td>
<td>9.3%</td>
<td>91.8%</td>
</tr>
<tr>
<td>Kindergarten teacher</td>
<td>24.3%</td>
<td>9.3%</td>
<td>91.8%</td>
</tr>
<tr>
<td>Carer of elderly care or disabled people</td>
<td>24.3%</td>
<td>9.3%</td>
<td>91.8%</td>
</tr>
</tbody>
</table>

Table 2

| How many days, if any, have you been off work sick in the past 12 months? |
|-----------------------------|-----------------------------|
| Never | 19.0% | 20.7% | 15.9% | 16.5% | 12.3% | 14.7% |
| 1–7 days | 58.8% | 57.9% | 60.2% | 61.1% | 60.0% | 60.6% |
| 8–14 days | 14.1% | 14.5% | 15.4% | 14.4% | 18.2% | 15.2% |
| More than 14 days | 8.1% | 6.9% | 8.5% | 8.0% | 9.5% | 9.5% |

| Have you gone to work while sick due to overload at work in the past 12 months? |
|-----------------------------|-----------------------------|
| Never | 39.9% | 48.0% | 36.2% | 43.0% | 32.2% | 40.5% |
| 1–3 times | 39.0% | 36.4% | 40.7% | 40.0% | 40.7% | 39.5% |
| 4–6 times | 13.6% | 9.5% | 14.2% | 9.6% | 14.2% | 11.9% |
| More than 6 times | 7.5% | 6.1% | 8.9% | 7.4% | 8.9% | 8.1% |

| Have you visited a doctor because of illness or health problems due to the situation at work in the past 12 months? |
|-----------------------------|-----------------------------|
| Yes | 19.3% | 14.7% | 22.4% | 16.8% | 24.0% | 20.1% |
| No | 80.7% | 85.3% | 77.6% | 83.2% | 74.0% | 79.9% |

DS = Downsizing; N-DS = No Downsizing.
Participants also reported that it had become more common for employees to take sick leave, even if they were not actually sick. Before the economic crisis, this was almost unheard of. One kindergarten teacher said:

You wake up in the morning with a headache and other aches and pains and you just stay at home. Before, you took an aspirin and went to work, but not anymore. You are aware of the stressful situation at work and you simply do not feel up to it.

The reasons participants gave for this behavior included increased concern about money, anxiety, and sadness because of the crisis. However, some employees felt obligated to go to work despite being ill because they felt that staying home would contribute to the stressful situation, which was caused by being understaffed.

Participants reported that, due to the increased workload, the only valid absences were due to sickness; therefore, if an employee really needed a day off, he or she would take off as sick. The participants expressed less job satisfaction because of this ongoing absenteeism. Some explained that the workplace used to be a sanctuary where work was demanding but enjoyable; however, the work had now become stressful and demanding. Some participants feared that employees would take more sickness absence in the future or even that they would quit.

Participants in the focus groups agreed that, in the past, many employees had gone to work despite being sick and that loyalty to the workplace was the main reason for their decisions not to take sick leave. Participants thought this behavior had changed since the economic crisis, at least for some employees. According to participants, it was mainly their own consciences that prevented them from staying off work for false reason, as they did not want to burden other employees with their own tasks.

2.4. The impact of downsizing on sickness and sickness absence

Table 3 outlines the results of the GEE analyses predicting the likelihood of sickness and sickness absence over time (only main effects are presented because the interaction between downsizing and time was not significant). The main effects of study time point, downsizing, gender, age, marital status, parental status, and occupation were examined for each dependent variable. Downsizing was not significantly associated with sickness absence over time (see model 1), controlling for other factors in the model. The strongest predictor of reporting sickness absence was the study time point (odds ratio of 1.30 for follow-up study 1 and 1.63 for follow-up study 2). This indicated that respondents in follow-up study 1 were 30% more likely to report a sickness absence than those in the first study, controlling for all other factors in the model. They were 63% more likely in follow-up study 2. Gender did not make a unique, statistically significant contribution to the model.

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<tbody>
<tr>
<td></td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
</tr>
<tr>
<td>Intercept</td>
<td>11.80*** 6.46–21.56</td>
<td>1.84*** 1.14–2.99</td>
<td>0.10*** 0.05–0.18</td>
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<tr>
<td>Age</td>
<td>1.30*** 1.15–1.47</td>
<td>1.22*** 1.12–1.33</td>
<td>1.18** 1.05–1.33</td>
</tr>
<tr>
<td>Follow-up study 1</td>
<td>1.63*** 1.40–1.90</td>
<td>1.42*** 1.29–1.56</td>
<td>1.36*** 1.19–1.55</td>
</tr>
<tr>
<td>Follow-up study 2</td>
<td>1.10 0.94–1.30</td>
<td>1.25*** 1.11–1.41</td>
<td>1.40*** 1.20–1.64</td>
</tr>
<tr>
<td>Downsized workplace</td>
<td></td>
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<tr>
<td>Women</td>
<td></td>
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</tr>
<tr>
<td>Age</td>
<td>0.97*** 0.97–0.98</td>
<td>0.99*** 0.98–1.00</td>
<td>1.01 1.00–1.02</td>
</tr>
<tr>
<td>Married or cohabiting</td>
<td>0.76* 0.60–0.96</td>
<td>0.98 0.82–1.17</td>
<td>0.74** 0.60–0.91</td>
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<tr>
<td>With children</td>
<td>1.22 1.02–1.48</td>
<td>1.12 0.96–1.30</td>
<td>1.08 0.89–1.31</td>
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<tr>
<td>Elderly</td>
<td>1.23* 1.00–1.53</td>
<td>0.91 0.77–1.08</td>
<td>1.41*** 1.16–1.72</td>
</tr>
<tr>
<td>Kindergarten teacher</td>
<td>0.99 0.76–1.30</td>
<td>1.46*** 1.17–1.81</td>
<td>1.29* 1.01–1.66</td>
</tr>
<tr>
<td>Care of disabled people</td>
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Note: ***p < 0.001, **p < 0.01, *p < 0.05.

Married or cohabiting respondents were less likely to report sickness absence over time controlling for other factors in the model (OR = 0.76), but participants with children were more likely to report sickness absence (OR = 1.22). The odds ratio of 0.97 for age indicated that, for every additional year of age, respondents were 0.97 times less likely to report sickness absence, controlling for other factors in the model. For occupation, there was no significant relationship with sickness absence.

However, over time, downsizing was significantly associated with working while sick because of overload at work. Respondents at downsized workplaces were 25% more likely to report being at work while sick than respondents at workplaces where downsizing had not occurred over time, controlling for all other factors in the model (see model 2). The odds ratio of 1.22 for follow-up study 1 and 1.42 for follow-up study 2 indicated that respondents were more likely to work while sick in the follow-up studies than in the first study, controlling for all other factors in the model. Respondents in elderly care and care of disabled people were 46% more likely to report to work while sick than were primary school teachers over time, controlling for all other factors in the model.

Gender and marital and parental status did not make unique, statistically significant contributions to the model, but the odds ratio for age was statistically significant, indicating that for every additional year of age, respondents were 0.99 less likely work while sick because of overload at work.

Downsizing was significantly associated with visiting a doctor because of illness or health problems attributed to the situation at work (see model 3). Respondents at downsized workplaces were 40% more likely to report visiting a doctor because of illness or health problems than were respondents at non-downsized workplaces, controlling for all other factors in the model. The odds ratio of 1.18 for follow-up study 1 and 1.36 for follow-up study 2 indicated that respondents were more likely in the follow-up studies.
than in the first study to visit a doctor because of illness or health problems due to the situation at work, controlling for other factors in the model. Gender, age and parental status did not make unique, statistically significant contributions to the model, but marital status did. Married and cohabiting respondents were less likely than were single respondents to visit a doctor because of illness or health problems. In addition, kindergarten teachers were 41% more likely to visit a doctor because of illness or health problems due to the situation at work than were primary school teachers over time, controlling for other factors in the model.

The participants stated that the economic crisis had affected almost every employee in one way or another, and they agreed that it could be difficult to differentiate stressful symptoms arising from work and home. Therefore, it is likely that sickness absences have increased in all workplaces and that increased absenteeism has led to heavier workloads and mental and physical exhaustion among employees. At some workplaces, the situation is considered critical, and the employees lack the resources to manage the problem. The only choices employees have are to work faster and shorten their lunches and coffee breaks.

Increased workload, mainly because of fewer staff, has taken its toll on employees. One participant in elderly care said:

I was thinking about the staff and increased workload because there are fewer of us, mainly because of increased sickness absence and more difficulties with recipients of our services. We have to keep up the same level of service with fewer employees and less money to spend. It is unfair. It was all right for a while but not in the long-run, and I just wonder, where is the limit? When is the workload too much? How much can we take? No one has shown me any appreciation for the extra effort I have put into my work to keep the workplace running smoothly. The only gratitude I have received is less salary for much more work. This recession is not over yet. [ ... ] I have to say that I have had enough.

Generally, participants shared this view and the frustration toward management in the municipalities. Participants used terms such as “unfairness”, “irritation”, “confused”, “frightened”, “destitute”, and “highly outraged” to describe their feelings. They believed that managers lacked respect for their work and that their professionalism was devalued. Most participants were concerned about the reduced quality of service they were providing because there was not adequate staff to do the work, and the employees were tired. The participants shared the sentiment that “The energy is not there anymore”. They also worried that too few staff would be a permanent arrangement.

3. Discussion

This work explores sickness and sickness absence among Icelandic municipality employees who remained at work 2, 3, and 5 years after the bank collapse in autumn 2008. The overall question is whether sickness and sickness absence increased during the 4-year study period. We also asked whether sickness absences were more common in downsized workplaces that in non-downsized workplaces, and whether the crisis affected women and men differently. By answering these questions, the study fills a gap in the research on sickness among retained employees in downsized workplaces (Archibald, 2009; Carter et al., 2013).

The results show that the number of employees who reported sickness absence increased between the study time points, along with an increased number of sick days per participant. Interestingly, sickness absence was more common among younger than older employees. This can partly be explained by the fact that participants with young children were more likely to report sickness absence than other participants. No gender differences was observed. Increased sickness absence held for both downsized workplaces and non-downsized workplaces. On the other hand, downsizing was significantly associated with working while sick because of overload and was also significantly associated with visiting a doctor because of illness or health problems due to the situation at work.

The interviewed employees described a complicated sickness behavior. They confirmed the increased sickness due to worsened work conditions since the crisis, but they also admitted that part of the sickness absence was a way of coping with stressful situations. However, this was a doubled-edged sword, as the absenteeism increased the workload and the sickness. Due to the workload and staff reductions, they sometimes had to go to work when sick.

As mentioned earlier, there is inconsistency between studies as to whether there are connections between downsizing and sickness absence. Part of this can be explained by the complicated nature of sickness behavior, which is even connected to factors other than health, such as the general situation at the workplace.

The present study is consistent with the works of Westerlund et al. (2004a) and Östhus and Masteaas (2010), which showed combined negative effects of downsizing on Swedish and Norwegian employees’ physical and mental well-being, but only minor, if any, effects on sickness absence among employees. Our results show that, even if sickness absence increased over time, it did not increase more in downsized than in non-downsized workplaces. This could be because, according the interviewees, as time went on, an increasing number of employees in downsized workplaces went to work even when they were sick. Other studies have observed this trend (see Elstad and Våbo, 2008). Nevertheless, commitment to the workplace seems to have weakened and the atmosphere worsened after the economic crisis.

Our study revealed no gender difference in reporting sickness absence, going to work when sick, or visiting a doctor because of the situation at work. However, we hesitate to draw a strong conclusion based on our data, as men comprised only 12.6% of the survey sample and 5 out of 39 of the focus group members. Because of the gender division of labor, men were also more likely to work in the care of disabled people. According to Theorell et al.’s (2003) findings, downsizing decreases sickness absence among women, but not among men. As Snorradóttir et al. (2013b) also showed a gender difference in relation to downsizing and health, we encourage other researchers to further study the connection between economic crisis, sickness, and gender.

It is important to keep in mind that, when responding to a question about the connection between work and health, it can be difficult to know whether a person is sick only because of the situation at work or for other reasons. The participants in the focus groups mentioned this. Studies on sickness absence cannot exclude spread effects, good or bad, from outside the workplace to the behavior at work. Therefore, it is difficult to establish with certainty the extent to which the increased sickness absence in our study was caused by the situation at work and the situation outside the workplace. Consequently, we do not know for sure whether employees felt worse in 2013 than in 2011 and 2010 only because of the poorer work organization, or if this also had to do with worse personal circumstances. The fewer sickness absences of people having a partner or living in a relationship possibly show a buffering effect of marriage/cohabiting, because of a more financial stable situation with a double income etcetera. The fact that participants with children were more likely to report sickness absence probably indicates more stress in those families.

This first study on sickness and sickness absence among employees working in Icelandic municipalities since the economic
In 2008 addresses a debate that has been neglected (Archibald, 2009; Carter et al., 2013), as studies on downsizing and the economic crisis tend to focus on those who have lost their jobs, rather than on retained employees. We see this study's mixed methods (longitudinal balanced panel data and focus group interviews) as a strength, as most other studies on sickness are based on quantitative data alone. The focus groups allowed us to look beyond the facts and numbers obtained via online surveys and allowed the participants to comment in their own words while being stimulated by the thoughts and comments of others in the group. We also consider the balanced panel data as a strength. Nevertheless it can certainly be seen as a weakness to only use self-reported data on sickness and sickness absence. However, by combining the qualitative and quantitative data on the issue we see our resulted as reliable.

Ferrie et al. (2005) compared self-reported sickness absence, with registered data for sickness absence, and found that participants usually reported fewer sickness absence days than were registered. Based on Ferrie et al. and on our focus groups data, we thus believe that the numbers of sick days are underestimated rather than overestimated in the panel data. Even though longitudinal data are valuable, it can certainly be seen as a weakness that the baseline of the quantitative data refers to a time after the collapse of the banks, so there is no comparison with a previous time. Fortunately, however, economic crisis is neither common nor predictable, so it is difficult to plan longitudinal research before one occurs. Lacking the quantitative data before 2008 makes the focus group discussions—where the employees compared the work environment before and after the crisis—especially valuable.

## 4. Conclusions

The economic crisis has had a negative impact on the health and well-being of employees in Icelandic municipalities. Interestingly, sickness has increased in downsized and non-downsized workplaces. Nevertheless, those who worked in downsized workplaces were more likely to suffer sickness. The situation became worse year by year between 2010 and 2013, five years after the collapse of the Icelandic banks. In addition, there was an increase in the number of days employees stayed off work due to sickness. Employees in downsized workplaces were more likely to go to work when sick and were more likely to visit a doctor because of illness or health problems due to situations at work.

As the effects may prevail for many years, this study demonstrates the importance of protecting the health and well-being of all employees in the wake of economic crisis, not only those who have lost their jobs or work in downsized workplaces. This is important not only in the initial aftermath of the crisis, when most of the work layoffs and restructuring occur, but also for a much longer time thereafter. This knowledge is of practical relevance to those responsible for occupational health and safety, as most Western countries periodically go through economic crisis, resulting in an increased strain on employees.

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