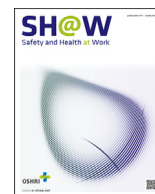




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Short Communication

Organisational Changes and Psychosocial Work Factors: Prospective Findings From the National French Working Conditions Survey

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ABSTRACT

The studies exploring the mechanisms by which organisational changes may impact health outcomes are lacking. The objectives of the study were to examine the prospective associations of organisational changes with the deterioration of psychosocial work factors. The study was based on the prospective data of the national French working conditions survey collected in 2013, 2016, and 2019. The study sample included 5200 employees working in the private sector. A large set of organisational changes and psychosocial work factors were collected from employers and employees respectively. Multilevel mixed-effects robust Poisson regression models were used. Organisational changes were prospectively associated with the deterioration of psychosocial work factors related to job insecurity, role stressors, and job demands. The strongest prospective association was found between downsizing and the increase in job insecurity. The associations between organisational changes and health outcomes may be mediated by psychosocial work factors.

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1. Introduction

Organisational changes include a large variety of changes related to work organisation, and some of them, such as downsizing, may be major as they may threaten job continuity and security, or may impact job features drastically. Literature reviews [1–5] showed that organisational changes may impact health outcomes. The literature is, however, scarce on the mechanisms that may explain the potential effects of organisational changes on health. One hypothesis may be that organisational changes may impact psychosocial work factors, which in turn may impact health outcomes, in agreement with the multilevel concept by Sauter et al. [6]. Indeed, the literature reported that psychosocial work factors may be considered as risk factors for health outcomes [7].

Compared to the existing literature on the associations between organisational changes and psychosocial work factors, which included only a few studies [8–10], the present study had the double benefit of having a prospective design and using data for organisational changes assessed by employers and not by employees, to avoid any reporting bias.

The objectives were to study whether organisational changes were associated with the deterioration of psychosocial work factors prospectively in a national sample of the working population of private sector employees.

2. Methods

The study was based on the prospective data of the national French working conditions survey collected in 2013, 2016, and 2019 by the French ministry of labour (DARES). The target population was the national population of workers, i.e. employees and self-employed workers. The survey was designed to be a prospective open cohort, i.e. workers entered the cohort in 2013 or 2016 and were followed up until 2019. Workers were asked to respond to a questionnaire by interviewers and a self-administered questionnaire. The response rate to the self-administered questionnaire was 90% and the 3-year follow-up rate was 65%. For the purpose of the study, we focused on the subsample of private sector employees as organisational changes were collected from private companies only.

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Supplementary Figure S1 presents the design of the study.

Psychosocial work factors, collected in the questionnaire asked by interviewers and the self-administered questionnaire, included 16 factors, that were constructed using 36 items, inspired from the COPSQ questionnaire [11]. These 16 factors were: quantitative demands (6 items), cognitive demands (2 items), demands for hiding emotions (1 item), influence (5 items), degree of freedom (2 items), possibilities for development (2 items), meaning of work (2 items), predictability (1 item), role clarity (1 item), role conflict (2 items), social support (3 items), job satisfaction (3 items), work–family conflict (1 item), job insecurity (1 item), internal violence (3 items), and external violence (1 item). The scores of psychosocial work factors were calculated from one single item or from the sum of items. The higher the score, the higher the exposure. Differences in the scores between the end and beginning of each 3-year follow-up period were calculated. The studied outcomes were the deterioration of psychosocial work factors, i.e. a difference in the scores higher than 0, or in other words an increase in exposure.

Data for organisational changes were collected from the employers of the employees working in private companies, in 2016 and 2019, using the following binary items:

- 1) Within the last year, has the establishment undergone a downsizing plan or collective redundancies?
- 2) Within the last 3 years, has the company, to which the establishment belongs, undergone ... ?
 1. Acquisition by another company
 2. Acquisition of another company
 3. Diversification or creation of activities
 4. Cessation of activity, a refocusing
 5. Change in the management team
 6. Restructuring or reorganisation leading to a change in the organisational chart
 7. Relocation

Two variables were additionally constructed: the presence of at least one organisational change (i.e. any change) and the number of organisational changes within the last 3 years.

The statistical analyses were done using R and Stata software and included the two 3-year periods of 2013–2016 and 2016–2019. The study sample was described according to all studied variables and gender differences were tested using the Chi-Square test. The correlations between organisational changes were assessed using tetrachoric correlation coefficients. The prospective associations between organisational changes and the deterioration of psychosocial work factors (outcomes) were studied using multilevel mixed-effects Poisson regression models with robust variance estimation. Random intercepts were used to take into account that there may be two observations for some employees, i.e. two 3-year periods, and that some employees may work within the same company. Three models were performed: (1) without adjustment, (2) with adjustment for covariates i.e. gender, age, marital status, occupation, and economic activity of the company, and (3) with additional adjustment for the baseline score of the studied psychosocial work factor (i.e. at the beginning of the 3-year period). If significant associations were found between any organisational change and the deterioration of psychosocial work factors, then the linear associations were tested between the number of organisational changes and the deterioration of psychosocial work factors using trend tests. Interactions between gender and organisational changes were tested. The following sensitivity analyses were performed: (1) models were additionally adjusted for full/part time work, and (2) the analyses were performed among the subsample of employees working for more than one year or three years in the same job for the study of downsizing and of the other organisational changes, respectively.

3. Results

Among the employees aged 15–65 included in the survey, 38% were working in private companies. The response rate to the employer questionnaire was 63.6% and 59.7% in 2016 and 2019, respectively. After the exclusion of employees with missing values, the study sample included 3732 employees followed up from 2013 to 2016, and 2967 employees followed up from 2016 to 2019, representing a total of 5200 employees, including 1499 employees who had data for the two 3-year periods (Supplementary Figure S2).

There were differences between genders for all covariates (Supplementary Table S1). The prevalence of downsizing within the last year was a little higher among men than among women (Supplementary Table S2). More than 60% of the employees were exposed to at least one organisational change within the last 3 years, without any gender difference. There were a few differences between genders for the 7 specific organisational changes within the last 3 years, and if any, the prevalence was higher among men than among women. The most frequent organisational changes were restructuring and changes in the management team. The study of gender differences in the deterioration of psychosocial work factors showed that there were only a few differences between men and women (Supplementary Table S3).

The correlations between organisational changes showed that all these correlation coefficients were significant (except one), meaning that organisational changes were associated with each other (Supplementary Table S4). Particularly strong correlations (>0.40) were found between downsizing and cessation of activity, downsizing and restructuring, acquisition of another company and diversification, cessation of activity and restructuring, and change in the management team and restructuring.

Table 1 shows that downsizing within the last year was associated with the increase in job insecurity and the deterioration of possibilities of development.

The presence of any organisational change within the last 3 years was associated with the deterioration of role clarity and the increase in job insecurity (Table 2). A significant linear trend was observed between the number of organisational changes within the last 3 years and the increase in job insecurity (Supplementary Figure S3). The results for the 7 specific organisational changes are presented in Supplementary Tables S5–S11. The acquisition by another company was associated with the deterioration of role clarity and the increase in job insecurity (Supplementary Table S5), while the acquisition of another company was associated with the deterioration of meaning of work and the increase in role conflict (Supplementary Table S6). Cessation of activity was associated with the increase in job insecurity (Supplementary Table S8). Change in the management team was associated with the deterioration of role clarity and the increase in role conflict and job insecurity (Supplementary Table S9). Restructuring was associated with the deterioration of role clarity and the increase in cognitive demands and job insecurity (Supplementary Table S10). Relocation was associated with the increase in quantitative demands (Supplementary Table S11). The study of gender-related interactions between organisational changes and the deterioration of psychosocial work factors suggested that these associations were likely to be the same for both genders.

The sensitivity analyses confirmed the results.

4. Discussion

To summarize, a high prevalence of organisational changes was observed in our study with more than 60% of employees exposed to at least one change within the last 3 years. These changes were associated with each other, meaning that organisational changes

Table 1
Prospective associations between downsizing within the last year and the deterioration of psychosocial work factors

	IRR (95% CI) [†]	IRR (95% CI) [‡]	IRR (95% CI) [‡]
Quantitative demands	0.93 (0.83–1.05)	0.93 (0.82–1.05)	0.93 (0.83–1.04)
Cognitive demands	1.04 (0.88–1.24)	1.06 (0.89–1.27)	0.98 (0.83–1.16)
Demands for hiding emotions	1.07 (0.88–1.29)	1.10 (0.91–1.33)	1.12 (0.94–1.34)
Influence	1.00 (0.89–1.12)	0.99 (0.88–1.11)	1.04 (0.93–1.17)
Degree of freedom	0.90 (0.72–1.12)	1.00 (0.81–1.24)	0.99 (0.80–1.23)
Possibilities for development	1.08 (0.93–1.26)	1.13 (0.97–1.32)	1.19 (1.04–1.37)*
Meaning of work	0.96 (0.84–1.11)	0.99 (0.86–1.14)	1.04 (0.91–1.19)
Predictability	1.05 (0.79–1.40)	1.06 (0.80–1.41)	1.07 (0.80–1.42)
Role clarity	1.01 (0.77–1.34)	1.02 (0.77–1.34)	1.04 (0.80–1.35)
Role conflict	1.00 (0.86–1.17)	1.00 (0.86–1.17)	1.04 (0.89–1.21)
Social support	0.94 (0.83–1.08)	0.97 (0.85–1.11)	0.96 (0.85–1.09)
Job satisfaction	1.00 (0.89–1.13)	1.03 (0.91–1.16)	1.03 (0.92–1.16)
Work-family conflict	0.93 (0.77–1.12)	0.98 (0.81–1.18)	1.03 (0.87–1.22)
Job insecurity	1.86 (1.49–2.32)***	1.95 (1.55–2.44)***	2.33 (1.89–2.87)***
Internal violence	0.88 (0.73–1.06)	0.86 (0.71–1.04)	0.86 (0.71–1.04)
External violence	0.68 (0.48–0.97)*	0.69 (0.48–0.97)*	0.72 (0.51–1.01)

IRR: Incidence rate ratio.

Results from multilevel mixed-effects robust Poisson regression models.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

* Unadjusted.

[†] Adjusted for covariates and follow-up period.

[‡] Additionally adjusted for the baseline score of psychosocial work factor.

Table 2
Prospective associations between any organisational change within the last 3 years and the deterioration of psychosocial work factors

	IRR (95% CI) [†]	IRR (95% CI) [‡]	IRR (95% CI) [‡]
Quantitative demands	1.03 (0.97–1.09)	1.02 (0.96–1.08)	1.02 (0.97–1.08)
Cognitive demands	1.04 (0.96–1.14)	1.05 (0.96–1.14)	1.03 (0.95–1.12)
Demands for hiding emotions	0.91 (0.83–1.00)*	0.90 (0.82–0.99)*	0.91 (0.83–1.00)*
Influence	1.01 (0.95–1.07)	1.01 (0.95–1.08)	1.05 (0.99–1.11)
Degree of freedom	0.88 (0.79–0.98)*	0.97 (0.87–1.07)	0.97 (0.88–1.08)
Possibilities for development	0.97 (0.89–1.05)	1.00 (0.92–1.09)	1.01 (0.94–1.10)
Meaning of work	0.99 (0.92–1.06)	1.00 (0.93–1.07)	1.03 (0.96–1.10)
Predictability	1.02 (0.88–1.19)	1.02 (0.87–1.19)	1.01 (0.87–1.18)
Role clarity	1.18 (1.02–1.36)*	1.14 (0.99–1.33)	1.17 (1.02–1.36)*
Role conflict	1.04 (0.96–1.13)	1.05 (0.97–1.14)	1.07 (0.99–1.16)
Social support	1.00 (0.93–1.07)	1.00 (0.93–1.07)	0.99 (0.92–1.06)
Job satisfaction	1.00 (0.94–1.06)	1.01 (0.95–1.07)	1.04 (0.98–1.10)
Work-family conflict	0.92 (0.84–1.01)	0.95 (0.87–1.04)	0.98 (0.90–1.07)
Job insecurity	1.21 (1.03–1.43)*	1.24 (1.04–1.46)*	1.34 (1.13–1.58)***
Internal violence	1.03 (0.93–1.13)	1.01 (0.92–1.11)	1.02 (0.92–1.12)
External violence	0.88 (0.76–1.01)	0.86 (0.74–0.99)*	0.86 (0.74–0.99)*

IRR: Incidence rate ratio.

Results from multilevel mixed-effects robust Poisson regression models.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

* Unadjusted.

[†] Adjusted for covariates and follow-up period.

[‡] Additionally adjusted for the baseline score of psychosocial work factor.

were likely to coexist. Organisational changes were prospectively associated with the deterioration of some psychosocial work factors. The most impacted factor was job insecurity. A linear trend was observed between the number of organisational changes and

the increase in job insecurity. Five types of organisational changes were associated with the increase in job insecurity. The strongest prospective association was found between downsizing and the increase in job insecurity. Other factors associated with organisational changes included the increase in role stressors (role clarity and role conflict) and in job demands (quantitative and cognitive demands). No difference between genders was observed in these associations.

There have been only a small number of previous studies in the literature on the associations between organisational changes and psychosocial work factors, especially with a prospective design and/or data for organisational changes assessed independently from employees. We found two cross-sectional studies [8,10] and one prospective study [9]. Ferrie et al. [8] explored downsizing and expansion (i.e. contraction or expansion of the workforce), derived from tax registry data, in a sample of the Swedish population in paid employment. The authors showed that the cross-sectional associations of these organisational changes with psychological demands, decision authority, skill discretion, and social support differed according gender, the level of downsizing/expansion, and the sector (private or public), suggesting that organisational changes might not systematically result in poorer psychosocial work factors. Using data from managers and union representatives, Westerlund et al. [10] studied a classification of organisations including three categories defined as stable, changing/growing, and threatened/questioned in a sample of white-collar employees in Sweden. Their cross-sectional results showed that organisational instability was associated with higher job strain, lower decision authority, and lower skill discretion. Flovik et al. [9] explored five types of organisational changes (restructuring, downsizing, layoffs, partial closure, and partial outsourcing) in a sample of employees working in 66 organisations in Norway. Their prospective results showed that these organisational changes were associated with some psychosocial work factors, including job demands, role clarity, and role conflict, in line with our own results. However, contrary to our study, in this study [9], all data were self-reported and may have been influenced by a reporting bias.

The strengths of our study deserve to be underlined. We studied a large national sample of both men and women, and explored gender differences. Our study had a prospective design, making possible the study of the predictive effects of organisational changes on the deterioration of psychosocial work factors. The assessment of organisational changes was performed by employers, making this assessment independent of employees and removing any reporting bias. Various types of organisational changes and a large set of psychosocial work factors were explored, making our study one of the most comprehensive on this topic. We included important covariates and took the baseline score of psychosocial work factors into account. We performed adequate statistical analyses and sensibility analyses.

Our study had a number of limitations. The study included private sector employees only. There was no precise information about organisational changes such as their intensity and exact timing, and the way they were implemented. Organisational changes were assessed at establishment or company level, but no information was provided on whether they impacted the whole establishment or company or only a part inducing potential misclassification. The assessment of organisational changes was done by employers retrospectively within the last (or last 3) year(s). Consequently, our study included employees who remained in the companies and did not lose their job leading to a potential selection bias. Our study may be underpowered to study some organisational changes with low prevalence, such as downsizing, which might be explained by the above mentioned selection bias. The response rate

of the employers was about 60%, leading to a potential response bias (indeed, employees included in the study, i.e. whose employer responded to the questionnaire, were more likely to be men, to work full time, to be blue collar workers, and to work in the manufacturing than those who were not). In addition, we could not rule out the possibility that the employers who responded were different from the others, for example more interested in or receptive to the topic of organisational changes, or even more able to manage organisational changes. All these potential biases might have led to an underestimation of the observed associations.

To conclude, our study showed that organisational changes may impact various psychosocial work factors, especially job insecurity, role stressors, and job demands. More research using high-quality studies may be needed to confirm our results. Indeed, prospective design and the assessment of organisational changes independently of employees were the two major assets of our study. Our study suggested that the effects of organisational changes on health outcomes may be mediated by the deterioration of psychosocial work factors, especially job insecurity, recognized as a risk factor for various health outcomes [7].

Ethical statements

The survey was approved by French ethics committees (CNIL no 2015-079, CNIS no 2015X073TV, and Comité du Secret no ME414 and ME1553).

CRedit authorship contribution statement

Isabelle Niedhammer: Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Supervision, Project administration, Funding acquisition. **Sandrine Bertrais:** Methodology, Software, Validation, Formal analysis, Resources, Data curation, Writing – review & editing, Visualization.

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Conflicts of interest

Authors declare no conflicts of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.shaw.2024.10.002>.

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