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An ergonomic approach to improve work conditions of older employees in social housing

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Abstract. French companies are legally required to develop action plans to improve employment and work conditions for older workers ("plans seniors"). These plans contain measures oriented towards recruiting, career evolution, skills developme1nt, knowledge transmission and improvement of work conditions. A tool for assessing work situations experienced by council buildings caretakers ("gardiens") was used in such a plan on behalf of the main agency of council housing in Paris, and we developed. This assessment tool was developed after ergonomic work analysis on a sample of 36 older caretakers (age > 57 y.o). The technical inspectors in charge of technical interventions on buildings and managing caretakers were trained to use the assessment tool and apply it to all caretakers aged 50 and over.

Keywords: work analysis, aging, social housing, management training

1. Introduction

The RIVP, one of the main council housing agencies in Paris, employs more than 600 building caretakers (gardiens d'immeuble). According to legal requirements, the agency had to set up and negotiate with the workers representatives a first 3 years' plan on senior employment and work conditions. The mean age of caretakers is 47 and 26 % of them are 55 years old or more. This plan included the analysis of work situation for all employees aged 50 and over.

2. Methods

A detailed work analysis was conducted on a subset of 36 older caretakers aged 57 and over, sampled to cover the range of different work situations encountered over the very diverse housing stock managed by RIVP.

This sample crossed the following significant parameters affecting the conditions of work:

- small/large apartment blocks
- work alone or with the spouse
- difficult/easy neighborhoods
- type of building
- resident population

A detailed assessment tool was devised and proofed in actual situations. The technical inspectors in charge of technical interventions on buildings and managing caretakers were trained to use the assessment tool and apply it to all caretakers aged 50 and over.

3. Results

3.1. The determinants of activity

Work analysis shows the specific features of this profession, in which work place and work time overlap with private space, time, and values. The caretakers are housed in the buildings they attend, and psychological involvement is important, as a result of living on the place of work and interfacing with sometimes rude and problematic residents.
concerning the building they care for and could be the target of aggressive behavior. The relationship with the site and the residents is to be built on the long term to keep up and maintain a secure and tidy environment.

The ability of aging employees to cope with difficult work situations is related both to site parameters and to personal experience and life circumstances.

To help aging caretakers to remain at work, measures should support both the physical activity (easing garbage can circuits, testing new devices for pulling cans, reducing cleaning duties...) and the psychological involvement (addressing isolation and encouraging team work with peers, management's intervention on difficult residents cases and misbehavior ...).

3.2. Assessment tool

The assessment tool describes site characteristics as they relate to work including building architecture and residents' behavior.

An excerpt of the assessment tool is presented on figure 1.

The tool was devised to review as far as possible, the factors affecting the physical and psychological workload of the caretakers.

Being aimed at technical inspectors, it uses concrete and simple items, relating the site and the activity of work.

The assessment tool comprises of different chapters,

- Location of the building is an important factor as the conditions of safety vary largely according to different neighborhoods in Paris.
- Most of the caretakers are in charge of a group of buildings. These buildings could be adjacent, or separated, sometimes by hundreds of meters.

The activity of caretakers is continuous through the day, including cleaning, maintenance, receiving residents, watching over the site etc...

This activity has a physical impact, linked to site configuration, for example when moving heavy garbage cans to the street for collection. Physical conditions linked to work increase with age (lower back pain, upper limb musculoskeletal disorders).

Caretakers are often alone in their work and they live on the site. The psychological involvement is significant: caretakers receive all the complaints

The distance leads to increased work strain and reduced control on the cleanliness of the premises.

- The configuration appears to be of importance to cope with safety issues. Enclosed buildings around a courtyard, with a single entry are easy to control. In large building groups with multiple entries, the caretaker alone is not able to control entering people at all gates and these buildings are prone to illegal activities involving drugs for example. These large housing groups also have multiple garbage collection points and are usually generating more physical constraints.
- Quantitative daily and weekly activity varies largely. Although there is a set conventional method for evaluating workload, based on work units, it is a national work agreement that is largely outdated and does not relate to the actual difficulty of work. It is thus important to reevaluate the workload when possible. The number of garbage cans moved, the number of stairs cleaned per day, the mail delivery etc.. are part of the evaluation.
- The load of rolling the garbage cans out for collection varies owing to different types of rolling surfaces and pavement. There are often doors and gates to hold while pushing the can. A chapter of the assessment tool describes different situations and their relative impact on physical strain.
- The caretaker is in charge of maintaining a quiet and safe environment in the building. The professional competence appears in keeping a quiet and safe site in troubled neighborhoods. The tool assesses the level of violence and misbehavior, as observed by an external eye and as evaluated by the caretaker. The discrepancy between these two evaluations gives clues to objectify the work of the caretaker and its psychological involvement.
  - In most cases, the situation is seen as more difficult or confrontational by the observer

than by the caretaker: this shows that the caretakers work activity is effective, and the caretaker confident in his/her action.

* In some cases, the evaluation by the caretaker in charge shows danger or confrontation where the observer's evaluation is much lighter. This is the sign of psychological suffering of the caretaker losing ground. He/she cannot cope by his/her work with a developing or installed situation perceived as a danger. There is a risk for physical or psychological decompensation. The assessment tool facilitates the identification of these situations.

- The assessment tool also encompasses the professional history of the caretaker and professional objectives.

The tool covers all aspects of the caretaker's activity and appears to be an easy way to identify the main concerns on a building group, how to improve work conditions on the physical and psychological axis. The tool is also devised to be transmitted through training to the technical inspectors.

Figure 1 shows a part of the assessment tool concerning the characteristics of the building group, which a caretaker has in charge. We devised a two level assessment of the impact of each factor on work activity.

A clear graphical color code (orange, yellow, green) has been used to render the impact of the items on the activity of work and is easy to understand.

On a second level, we developed multiplying factors to account for the relative impact of each category of questions (for example, the site configuration impact is doubled as compared to outdoor space characteristics).

For each category, the summarized rating is displayed by placing an arrow on a continuous colored scale. The arrow is positioned by the observer after summing the color squares with the appropriate multiplying factor.

This objective rating by the observer is compared with the rating proposed by the caretaker who has the knowledge of his work activity and psychological impact of the work situation.

Comparing the respective position of the arrows is a means to understand and discuss work activity and how to improve work conditions.

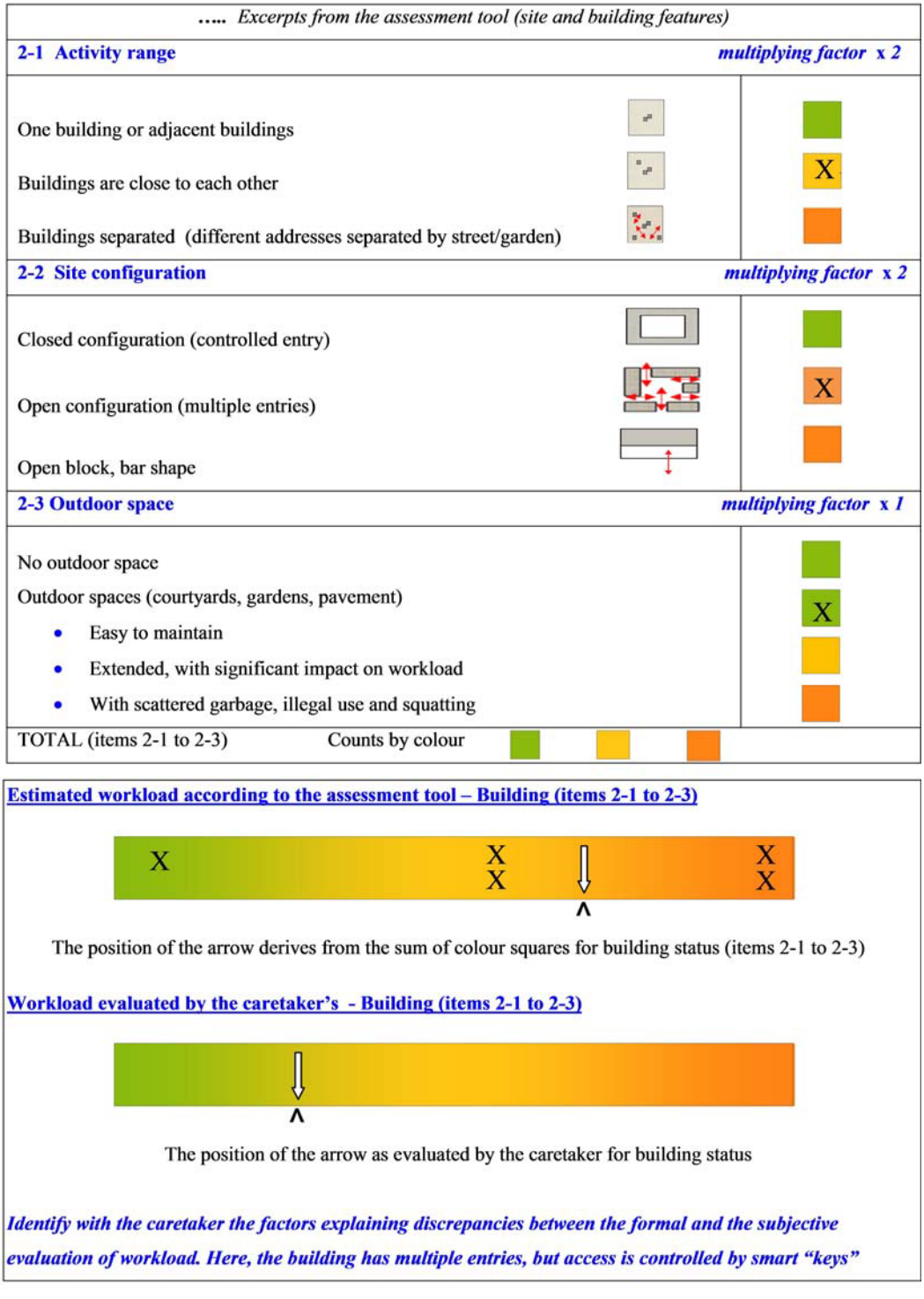

Figure 1 – An extract from the assessment tool, showing the use of color coding and the double scaling – by the observer and by the worker - to describe the factors affecting the activity of work.

3.3. Training inspectors to understand work activity

The assessment tool was built from extended observations of work activity but is not intended to reproduce the complete activity analysis. It is aimed at the technical inspectors to help them understand the activity of work and propose solutions for improving older employees' work conditions in the short term. A better knowledge and understanding of the situations of work will also benefit to caretakers of any age, whose work is dependent of the technical inspectors' activity.

The transfer of the tool to the technical inspectors is of outmost importance for the success of our strategy for work condition improvement. We trained all technical inspectors through 2 days sessions. Understanding caretakers' work activity was a first step. We then delivered and discussed the assessment tool. All technical inspectors had the occasion to use the assessment tool on a site they knew, and we discussed the results with the group.

4. Discussion

Training sessions for the technical inspectors were the occasion to introduce a comprehensive view of work activity, including physical, psychological and social factors.

This was a means to open the range of adaptive actions they could consider, from technical improvements of the building to psychosocial support and the promotion of collective activity as a resource to prevent physical and psychological strain.

Moreover, our analysis of caretakers' work activity was a novel point of view shared with the Human Resources Department to understand work conditions and develop the means to reduce its impact on workers physical and psychological health (Biquand & al) [1].

References

[1] Biquand S., Heddad N. Guerin S. (*under press*). Approche croisée ergonomique et RH du travail des gardiens d'immeuble dans le cadre du plan Senior de la RIVP (Régie Immobilière de la Ville de Paris) – Séminaire Paris 1 – Octares *Eds* – Toulouse, France.