

Analyzing the Effects of Distractions While Working from Home on Burnout Complaints and Stress Levels among Office Workers during the COVID-19 Pandemic

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Abstract: The COVID-19 pandemic has led to a massive switch from working at the office to working from home fulltime to minimize the spread of the virus. One of the main challenges, while working from home, are workspace distractions that might also affect employees' mental health. This study aims to analyze the influence of workspace- and personal characteristics, mediated by workspace distractions at home, on employees' stress and burnout levels. Results indicate a major influence of workspace distractions on stress levels and disengagement from the job, affected by physical workspace characteristics.

Keywords: COVID-19; working from home; distractions; stress; burnout; exhaustion; engagement

1. Introduction and literature review

The COVID-19 pandemic has led, worldwide, to an extraordinary situation, that suddenly obliged millions of people to work from home [1]. These new work arrangements have several implications for people's mental health [2]. A recent survey by the National Institute for Public Health and the Environment [3] in the Netherlands indicated that approximately 30% of the Dutch population felt more stressed than they did before the COVID-19 pandemic. While immediate reactions to workspace stressors can result in short-term, reversible consequences, repeated, long-term exposure to such stressors could potentially cause burnout complaints. Here, burnout is defined by two dimensions, namely exhaustion and disengagement from the job [4]. Therefore, it is important to understand which workspace characteristics impair short-term feelings of stress to reduce the risk of burnout complaints while working from home [5].

Although working from home (WFH) has several benefits (e.g. more time with family and less commuting time), it also has several known disadvantages, such as blurred lines between personal and professional life [6]. People who work from home tend to work longer and more continuous hours [7] and may experience more workspace distractions than they would at the office [8]. According to Lee and Brand [9], work distraction refers to the extent to which workers are disturbed or irritated by negative or undesirable stimuli at the workplace.

Previous research showed that the temperature, noise level, size of the workspace, the adjustability of the furniture, the colours on the walls, and the cleanliness of the workspace could all potentially cause workspace distractions [9]. Research also indicated that high noise levels [11]–[13], unclean or messy workplaces [14] and high workspace temperatures [15] are frequently mentioned sources of stress [12]. Here, stress is defined as the objective stressors that mentally affect an individual [16].

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Personal characteristics might also have an effect. For instance, studies have shown that an individual's personality could affect their perception of distractions at the workspace and their stress levels [17], [18]. Furthermore, Quick et al. [19] suggested that gender differences exist in how (much) people respond to work-related stressors. In open-plan office settings, it was found that males have a more positive perception of office conditions than females, which might indicate that females are more prone to workspace distractions than males [20]. However, these studies have usually been focused on workplace satisfaction or perception and have been conducted in office settings instead of at home.

Although previous studies have shown how distractions in the office could lead to negative effects on workers' well-being [21], still little is known about distractions while working from home, and how they affect people's mental health (i.e. stress and burnout symptoms). Therefore, the aim of this study is to analyse the influence of workspace characteristics and personal characteristics, mediated by the perceived distractions at home, on employees' stress levels and burnout complaints (i.e. exhaustion and disengagement), during the COVID-19 pandemic. The results of this study provide valuable insights for both workplace managers and employees, to optimize their home workspace to improve their mental well-being.

2. Materials and methods

2.1. Measurement

To study the relationships between personal and workplace characteristics, workplace distractions, exhaustion, disengagement and stress, a cross-sectional approach in the form of an online survey was used. Respondents were asked about their age, gender, personality, household composition, number of children in the household, job rank, years of deployment, complexity of work tasks, contractual hours and hours worked at home before COVID-19 and during COVID-19. Personality was measured according to the 10-item Big Five Inventory that distinguishes five personality types: extraversion, conscientiousness, neuroticism, openness and agreeableness [22]. Household composition was divided in three categories, namely single-person households, couples with children, and couples without children. The complexity of work tasks was based on the perceived task complexity survey that was developed by Maynard and Hakel [23] and adapted by Gupta et al. [24]. Respondents were also asked to indicate their perception of several workplace characteristics, such as the cleanliness, workspace colors, furniture (desk size and chair adjustability), size of the workspace, temperature, noise, work setting and number of people in the work setting, which were expected to influence people's perceived distractions [11]–[15].

The level of workplace distraction was measured by the 5-item distraction scale developed by Lee and Brand [25]. Furthermore, exhaustion and disengagement from work were used as the two core dimensions of burnout and were measured by the 16-item Oldenburg Burnout Inventory (OLBI) [4]. Finally, stress was measured based on the 4-item Patient Health Questionnaire (PHQ-4) of which two items were selected that measure stress (i.e. 'feeling nervous, anxious, or on edge' and 'not being able to stop or control worrying'). These items were combined with two items (i.e. 'feeling stressed' and 'think deeply about something') by Beute and de Kort [26]. Cronbach's Alpha (α) equals 0.862, which indicates that the sum score could be used. Data were collected in November and December 2020, during the COVID-19 pandemic among 271 employees of a large-sized Dutch technology company.

2.2. Analytical approach

To study the expected relationships between personal- and workplace characteristics, distractions and mental health, a path analysis was performed. The advantage of a path analysis over bivariate or regression analysis is that multiple indirect and direct relationships between dependent and independent variables can be analyzed simultaneously.

The path model was estimated by the statistical package LISREL Version 8.54. First, bivariate analyses were conducted to observe the significant relationships between independent and dependent variables. All significant relationships of the bivariate analyses were added to the path model. Relationships that were not found to be significant in the path model at the 0.05 ($t \geq 1.96$) significance level were then stepwise deleted. This backward stepwise process was repeated until all insignificant relationships were removed from the model.

3. Results

3.1. Sample

Almost 80% of the sample consists of male employees who have a regular job rank, with a mean age of 47. Before the COVID-19 pandemic, employees worked on average five hours of their work week from home, while during COVID-19 this increased to 37 hours per week. Employees indicated to have quite a cluttered desk (54.6%), to have an adjustable office chair (59.4%), and to have a dedicated work room (49.4%) (see Table 1). Only 20% of the employees indicated to share their workspace with at least one other person. The sum score for stress ranged from 4 to 16 and had a rather low mean ($M=6.469$), while the sum score for disengagement ranged from 11 to 30 with a somewhat higher mean ($M=22.144$). The sum score for exhaustion ranged from 10 to 32 and also had a somewhat higher mean ($M=22.476$).

Table 1. Descriptive statistics.

| | | Sample (%) |
|---|-----------------------------|------------|
| Gender | Male | 20.3 |
| | Female | 79.3 |
| | Missing | 0.4 |
| Job rank | Regular employee | 80.8 |
| | Manager | 12.5 |
| | Other | 6.6 |
| Workspace cleanliness | Very clean, empty desk | 1.8 |
| | 2 | 6.6 |
| | 3 | 19.2 |
| | 4 | 54.6 |
| | Cluttered desk | 17.7 |
| Furniture: chair | Adjustable office chair | 59.4 |
| | Non-adjustable office chair | 11.8 |
| | Regular chair | 28.8 |
| Amount of workspace | Small | 42.4 |
| | Medium | 41.0 |
| | Large | 16.6 |
| Work setting | Non-work setting | 20.7 |
| | Dedicated area | 28.0 |
| | Dedicated room | 49.4 |
| | Other | 1.8 |
| Nr. of people in work setting (simultaneously) | Nobody | 80.1 |
| | 1 other person | 16.6 |

| | | |
|-----------------------------------|-------------------------|-------------|
| | 2 other persons | 3.0 |
| | 3 other persons or more | 0.4 |
| | Range | Mean |
| Stress | 4-16 | 6.469 |
| Disengagement from the job | 11-30 | 22.144 |
| Exhaustion | 10-32 | 22.476 |

3.2. Path analysis

Table 2. Goodness-of-fit of the model.

| | |
|---|----------|
| Degrees of Freedom | 31 |
| Full Information ML Chi-Square | 45.95 |
| RMSEA (Root Mean Square Error of Approximation) | 0.040 |
| 90 Percent Confidence Interval for RMSEA | 0.0;0.13 |
| P-value for Test of Close Fit (RMSEA < 0.05) | 0.71 |
| Goodness of Fit Index | 0.98 |

Table 2 shows the Goodness of Fit of the model, which indicated that the path model has a good fit. In addition, Table 3 and Figure 1 show the unstandardized coefficients of the path model. As the figure shows, stress is affected by age, neuroticism and distractions. The negative relationship between age and stress indicates that younger employees experience higher stress levels than older employees. In addition, highly neurotic employees are more likely to be stressed compared to less neurotic employees. Employees who perceive more distractions at their workspace are also more likely to experience stress.

Exhaustion is negatively affected by the size of the workspace and stress. Employees with a small workspace are less exhausted than employees who work in medium or large sized workspaces. Employees who are stressed are also found to be less exhausted. For disengagement, significant relationships are found with conscientiousness, the job rank manager, the complexity of work tasks, the distractions and the stress level of employees. Conscientious employees, as well as employees with the job rank manager are more disengaged than employees with other personality traits or other job ranks. People who perceive their work tasks to be complex are also more disengaged. In contrast, stressed employees are found to experience less disengagement from the job. People who experience distractions in their work are also found to perceive less disengagement from the job.

Distractions are significantly affected by the personal characteristics age and the personality type conscientiousness. Older aged employees are found to be less disturbed in their work than younger aged employees. Conscientious employees are also found to be less disturbed than employees with other personality types. Workplace characteristics that significantly influence distractions are cleanliness, type of chair, workplace size, type of workspace, number of people in the room and noise. People who work in non-dedicated work areas that are small, or have a cluttered desk, or with more persons in the room, are found to be more frequently disturbed. In addition, the significant relationship between noise and distractions indicates that the experience of noise in the home workplace could lead to distractions in employees' work. Finally, people who have a non-adjustable chair seem to be less disturbed in their work tasks. In workspaces with low levels of distractions, workers were found to report lower stress levels. Results also indicated that low levels of distractions and low stress levels caused more disengagement from the job.

Table 3. Results path model (unstandardized coefficients).

| Variables | Categories | Distractions | Stress | Exhaustion | Disengagement |
|-------------------------------|--|------------------------------------|--------|------------|---------------|
| | | <i>Unstandardized coefficients</i> | | | |
| Age | | -10.73 | -9.46 | | |
| Personality | Conscientiousness | -1.00 | | | 1.95 |
| | Neuroticism | | 2.24 | | |
| Job rank | Manager (dummy variable) | | | | 0.18 |
| Complexity of tasks | | | | | 2.47 |
| Cleanliness | | 0.76 | | | |
| Type of chair | Not adjustable chair (dummy variable) | -0.14 | | | |
| Size of workspace | Small (dummy variable) | 0.44 | | -0.29 | |
| Type of workspace | Non-dedicated workspace (dummy variable) | 0.42 | | | |
| Number of people in workspace | | 0.63 | | | |
| Noise | | -3.79 | | | |
| Distractions | | | 2.93 | | -4.56 |
| Stress | | | | -5.14 | -3.89 |
| Exhaustion | | | | | 6.20 |
| R-squared | | 0.48 | 0.39 | 0.48 | 0.40 |

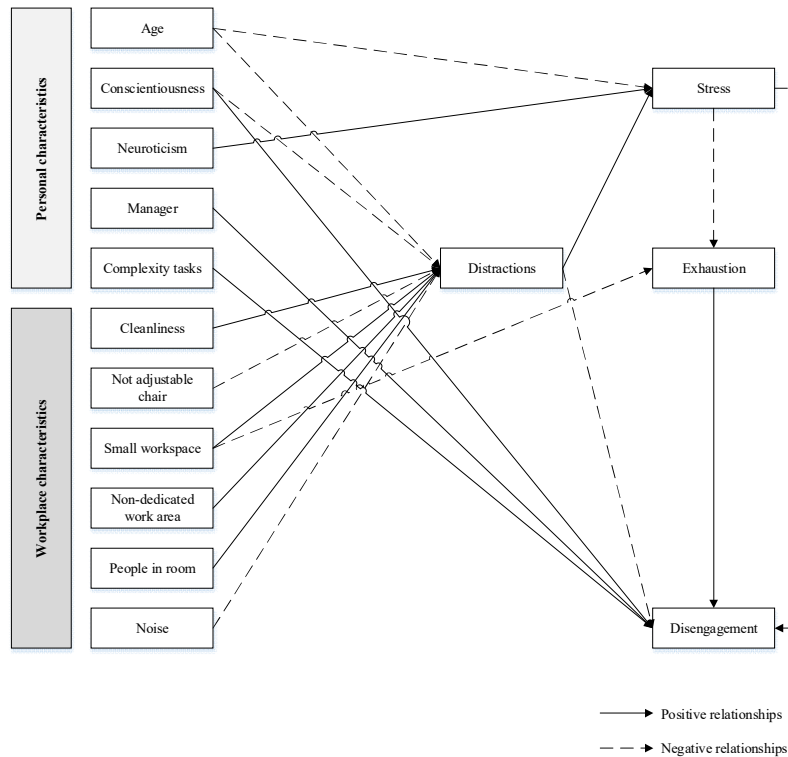


Figure 1. Relationships in path model.

4. Discussion

As the path model indicated, several personal and workspace characteristics affect the perceived distractions, stress level, exhaustion or disengagement from the job directly, as well as indirectly via distractions. First, younger employees were found to experience more stress and more workplace distractions than older employees. Previously, it has been shown that job stress among young employees is influenced by family-related factors, such as family conflicts, and the number and age of children [27]. It seems that older colleagues have a greater ability to regulate negative feelings caused by work-family imbalance, and might therefore experience less job stress [28] and less workspace distractions. Especially when working from home, young employees might be more distracted by family members and (young) children. Furthermore, employees' personality type affects their level of distractions, stress and engagement. In line with previous studies [29], [30], current research found a strong link between stress and neuroticism. In addition, conscientious employees were found to be less distracted in their work. As Mateo et al. [31] indicated, conscientious people are characterized by their accuracy on the job, especially when working in a tidy work environment. Contradicting to previous research [32], [33] is the finding that conscientious employees are more disengaged from their job. It could be that conscientious people, who are known for their self-discipline and responsibility [32], became more disengaged from their job due to being obliged to work from home for a prolonged period. Future research could investigate the influence of WFH in more depth. In addition, managers were found to be more disengaged from their job. Although it is generally believed that job ranks with high autonomy and responsibility could contribute to employees' engagement [34], such demanding jobs could also decrease employees' engagement, especially when available job resources are low [35]. This could explain why people who perform more complex tasks were found to be more disengaged from their job. People in higher job positions, such as managers, might thus have more difficulties to stay engaged in their job while working from home. Future research could investigate whether such disengagement affects people's work performance.

In line with previous studies on office workplaces, current research showed that medium-or large-sized home workspaces that are clean and tidy, without noise interruptions, appear to reduce workspace distractions [31], [36], [37]. As the path model indicated, only the size of the workspace directly affected feelings of exhaustion, while the influence of other workspace characteristics on dependent variables were mediated by distractions. These results indicate that distractions play a major role in the level of stress and burnout complaints while WFH. While workspace distractions were found to cause stress, results also indicated that they increased employees' engagement from the job. It could be that some arousal, caused by workspace distractions, is necessary for people to perform better, to stay motivated and to keep engaged in their job. Such argumentation is in line with the Yerkes-Dodson law [38].

5. Conclusion and limitations

Due to the COVID-19 pandemic, office workers were obliged to work from home, which led to considerable changes in employees' work settings and behaviours. Research that explains the influence of distractions while working from home on people's stress levels and burnout complaints is limited. This study contributes to existing theory by studying the relationships between workspace and personal characteristics and burnout symptoms (i.e. exhaustion and disengagement from work) and employees' stress levels, mediated by perceived workspace distractions at home.

Although this research provided some valuable new insights on the importance of distractions at home for office users and workplace managers, there are a couple of limitations. First, the study was based on a rather small sample that was generated among

employees of only one large technology company, with a lot of male employees, in the Netherlands. For future research, it would be interesting to collect data, using a more heterogeneous sample, among multiple companies in different sectors, to increase the generalizability of the results. Second, an overrepresentation of male respondents with a regular job rank occurred in the sample. Future research should include a more representative distribution of males and females, to gain understandings of the importance of gender on workspace distractions, stress, and burnout.

Overall, this study showed the significant role of workspace distractions in the relationships between workspace characteristics and stress and disengagement. While workspace distractions, caused by physical workspace characteristics, could potentially cause increased stress levels, workspace distractions could also lead to more job engagement. Results of this study could be used by workplace managers and employees, to optimize their home workspace and eventually to improve their mental well-being.

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