A macroergonomic approach to work-family conflict and employee safety

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1. Introduction

Accidents are unexpected outcomes that result not only from individuals' behaviors, but also from contextual factors (Krause, 1997). Therefore, unsafe behaviors have to be interpreted according to a combination of what is occurring in the environment and what the individual is doing in that environment. The present study sought to create a more comprehensive model of safety by means of macroergonomics. Macroergonomics utilizes sociotechnical systems theory to posit that a work system is composed of a personnel subsystem (i.e., ways *individuals* perform tasks), a technological subsystem (i.e., *tasks* to be performed), and external factors (Hendrick, 2002). Perceived control over work hours, an aspect of the technological subsystem, was examined as an antecedent of work-family conflict. Supervisor instrumental support, an aspect of the personnel subsystem, was examined as a moderator of the relationships between perceived control over work hours and work-family conflict. Supervisor instrumental support was also hypothesized to moderate the relationships between work-family conflict and safety performance.

Frone, Russell, and Cooper's (1992) conceptualized work-family conflict as bi-directional: work-to-family conflict is the interference of the work domain with the family domain and family-to-work conflict is the interference of the family domain with the work domain. The current study is based on the Cullen and Hammer (2007) study in which safety performance was first examined in relation to work-family conflict. Work-family conflict is created by occurrences in the external environment (i.e., the family/nonwork domain) and by occurrences in the work environment. It is consistent with the macroergonomic definition of an external factor because work-family conflict can permeate an organization through individual workers and an organization must be responsive to it in order to be successful and effective (Hendrick, 2002).

2. Methods

Twelve stores in a Midwestern United States grocery store chain were visited by researchers to collect data. A majority of the 360 participants in the present study were grocery store employees who worked in the front end of the store as cashiers. Job tenure in

this particular grocery store chain was an average of 7 years (*SD* = 5.96) and the average number of hours worked per week was 31 (*SD* = 8.55). The employees were an average age of 38 years old (*SD* = 15.25). Two hundred and sixty-two (73%) of the participants were female, 330 (92%) were White, 196 (55%) employees were married or living as married, 146 (41%) employees identified themselves as parents with children living at home, and 58 (16%) employees provided elder care.

3. Results

The data were analyzed using structural equation modeling. Control over work hours was negatively associated with work-to-family conflict (Path A: β = -.26; CI_{95} = -.35, -.17; p < .01). When there was a higher level of perceived control over work hours, less work-to-family conflict was experienced. The relationship between perceived control over work hours and family-to-work conflict was in the hypothesized direction and it was significant (Path B: β = -.15; CI_{95} = -.25, -.05; p = < .05). When employees perceived to have control over their work hours, family did not greatly interfere with work.

It was found that work-to-family conflict was not significantly associated with safety compliance (Path C: β = .04; CI_{95} = -.08, .15; p = .62). Similarly, work-to-family conflict was not significantly associated with safety participation (Path D: β = .06; CI_{95} = -.06, .17; p = .46). Conversely, family-to-work conflict was significantly associated with safety compliance (Path E: β = -.16; CI_{95} = -.28, -.03; p < .05). When more family-to-work conflict was experienced, employees did not follow safety rules on the job. The relationship between family-to-work conflict and safety participation was also found to be significant (Path F: β = -.14; CI_{95} = -.25, -.03; p < .05). When family responsibilities interfered with work, employees were less willing to participate in safety-related activities.

4. Discussion and Conclusion

This study, consistent with Cullen and Hammer (2007) and Smith and DeJoy (2012), has found that family-to-work conflict impacts safety compliance and participation. Future safety research may incorporate macroergonomics, which emphasizes that focusing on one adverse aspect of the system may not be enough to create valuable change if there are other adverse factors still creating demands elsewhere in the system.

References

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