

## Chapter 5.19

# Perceived Organizational Environment and Performance Reliability in the Case of Hospital Nurses

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### ABSTRACT

Most hospital organizational environments in Japan are required to redesign the current organization into a new type of organization, namely a knowledge-based or an intelligent organization. Team care formation, for instance, which forms a hierarchy with medical doctors having an initiative, and simply gathering some disciplinary staff in plural areas, is not adequate. Redesigning an innovative organization is not possible without appropriate transformation into a flexible and resilient organization that can cope with the contingency of complex social environment. Professional staff in hospitals need to develop their work organization to be more flexible and adaptive to the changes in society. The accidental events which happen in hospitals are rarely controlled only by technical countermeasures or by traditional human resource

management, but can be purposefully aligned by the appropriate application of knowledge management methodologies. Accuracy of human action is not merely acquired by avoiding erroneous behavior, rather it is ensured by continuously redesigning work organizational climate for the participants to take an autonomic action with the sense of organizational citizenship and social responsibility. The focus in this chapter is placed on the current situations of work organization of hospitals in Japan and on the comparison of perceived nursing work, incidence rates during 24 hours of nursing care work, and reduced reliability among four control modes of organizational environment, such as strategic, tactical, opportunistic, and scrambled. This study suggests that cognitive reliability on work conditions and on perceived work environment plays a critical role in improving performance reliability and in reducing human errors in order to provide a high quality of nursing care.

DOI: 10.4018/978-1-60566-284-8.ch011

## **INTRODUCTION**

Traditional technical countermeasures are not sufficient in controlling the incidents that happen in work organizations and in managing complex situations of the accidents occurring in society. Occurrence of accidental events in society are due to human actions which are roughly estimated at over 80% and have been increasing (Reason, 1990, 1997, Hollnagel, 1993, 1998). Systemic management of organizational environment, in addition with a particular human behavior, therefore, is required to cope with complex workplace issues stemming from inappropriate management of the organizational environment, and to take action at least at three levels of management, 1) operational or day-to-day control in terms of efficiency, 2) strategic control or creation of new values in terms of effectiveness, and 3) normative control or fulfilling the overall responsibility in terms of legitimacy; as in systemic management (Schwaninger, 1990, Flood, 1998). In comparison with the effort simply based on a particular discipline, systemic management based on organizational cybernetics is effective in coping with social changes and plays a great role in creating ideas or values for transforming the organization into an innovative one. According to the notable contributions on systemic management (Beer, 1979, Schwaninger, 1990, Flood, 1991, 1996, Espejo, 1993, 1996), holistic or collaborative approaches are required to manage the work environment and to create a viable organizational climate where people are positively related to help each other to recognize and make them share responsibility when accidents may happen in the future. Although the conceptual models and methodologies of systemic management are known, empirical studies by applying systemic management methodologies have been very few. Field studies are required for identifying the occurrence of erroneous behaviors and inappropriate human actions in the workplace, especially in the

healthcare sector where it is necessary to raise the level of security and quality of care.

The focus in this Chapter is placed on cognitive reliability which plays a crucial role in determining the accuracy of work performance, and on the relationship of the control status of the organizational environment with work performance in the case of hospital nurses. Evidence on the relationship between perceived organizational environment and performance reliability, and evidence on the comparison of the occurrence pattern of incident during 24 hours by organizational control mode were provided for predicting the occurrence of incident. Improvement of perceived organizational environment plays an important role to develop professional discretion and autonomy which leads to transformation of atmosphere or climate of organizational environment for overcoming specific threats or risks.

## **PERFORMANCE RELIABILITY**

Performance reliability is influenced by the levels of perception and cognition of the work organizational environment. Performance reliability, precisely cognitive reliability, is predicted by evaluating the interaction between the intrinsic control of cognitive function at work and the extrinsic control of the work environment (Hollnagel 1993, 1998). Human error is predicted by measuring the interaction between cognitive functions and work organizational control by using the theoretical model of contextual control mode of cognition (COCOM; Hollagel, 1993). According to the theory of CREAM (Cognitive Reliability and Error Analysis Method) (Hollnagel, 1998), human erroneous actions are evaluated by the level of cognition on the work organizational environment including the technical environment. The level of cognition is measured by nine question items of the common performance condition (CPCs) (Hollagel, 1998), asking how do you cognize

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