ERGONOMICALLY DESIGNED CHAIR FOR TICKETING OPERATIONS

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ABSTRACT

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Ticketing operations is one of the stated process that demands the operator to sit for a long period of time. Ticketing operators consist of toll plaza operators, box office attendants, parking attendants and ticket booths operators. Prolonged sitting is inevitable to some operation, some process demands the worker or operator to sit for a long period of time for the effectivity of the process. Prolonged sitting has a negative implication on the body of the operators and has been proven to be a significant contributor to chronic disease.

The study focused on the evaluation of the current chair being used for ticketing operation, defining the problems experienced by the users using the current design, determining the frequency and severity of musculoskeletal disorder being experienced by the operators, the relationship of prolonged sitting to the severity of musculoskeletal disorders, and identification of anthropometric measurements needed for the design and possible recommendation for the improvement of the ticketing operations.

The researchers used developmental research and used the Define-Measure-Analyze-Design-Validate (DMADV) method to obtain the objectives of the study The participants of this study were 71 operators from ticketing operations specifically toll plaza and ticket booth operators and box office and parking lot attendants. The researchers then used survey questionnaire, Rapid Entire Body Assessment (REBA) , correlation between the time an operator is seated, and the frequency as well as the severity of musculoskeletal disorder being experienced.

The results indicated that the ticketing operators experienced musculoskeletal disorder frequently accompanied by high severity using the current design of the ticketing chair. According to the bivariate analysis the back, thigh, wrist, hands and legs has a strong positive relationship to the number of working hours. It indicates that the longer the operator sits the higher the severity of pain being experienced.

The measured anthropometric data are, elbow rest height, elbow fingertip, knee height sitting, forearm-forearm breadth, thigh length for designing and developing ticketing chair. The 5^{th} and 95^{th} percentile were then used to determine the standard measurement for the comfortability of the ticketing operators

Results indicated that the current design of the chair for ticketing operations needed an improvement. Define Measure Analyze Design Verify (DMADV) and some engineering tools were used to design and develop an ergonomically designed chair for ticketing operations. The proposed design for an ergonomic chair for ticketing operation was evaluated in terms of factors of functionality, aesthetics, durability, safety and usefulness of the prototype and gained excellent review from the possible users.

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