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# Designing an Adjustable and Compact Ergonomic Chair for Homemakers and Development of a Prototype

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## Abstract

**Background:** Housewives play a crucial role in improving quality of life but face significant risks of musculoskeletal discomfort due to kitchen work. The physical labor, awkward postures, prolonged muscle contractions, repetitive motions, and prolonged standing increase the risk. Tasks like cutting, stirring, and lifting require frequent posture adjustments. Homemakers are particularly vulnerable to musculoskeletal disorders due to lack of awareness, unsuitable working conditions, and reliance on traditional methods and tools.

**Aim:** To design, develop, and validate an adjustable, compact chair to minimize musculoskeletal risks for homemakers during kitchen chores.

Methods: A structured survey of 40 homemakers collected demographic data and kitchen working hours. Their responses were recorded in a Google Form for analysis. Based on their needs, we designed and developed a chair prototype. This chair was tested by selected homemakers for 10 days, followed by feedback collection and statistical analysis.

**Result:** The ergonomic chair received an 89% satisfaction rating. Regarding comfort, 33.3% rated it as excellent, and 66.6% as good. It adapted well to various settings and reduced back strain for 77.8% of participants. Overall, it was highly satisfactory in comfort, adaptability, and reducing physical strain.

**Conclusion:** In conclusion, the chair was found to be comfortable, satisfactory, and feasible for homemakers, making it suitable for future use in real-life situations.

**Keywords:** Ergonomic Chair; Homemakers; Work Related Musculoskeletal Disorders