Subjective Assessments of Floor Slipperiness Before and After Walk under Two Lighting Conditions
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Abstract

A gait experiment was performed. The participants were tested under shoes, floors, surface, and lighting conditions. The participants gave floor slipperiness ratings before and after walked through a walkway. The perceived sense of slip (PSOS) was also collected. It was found that the perceived floor slipperiness before (PFSbefore) walking was affected significantly by the lighting, floor, and surface conditions. The participant gave relative low ratings of floor slipperiness under wet and detergent contaminated surface conditions at normal daylight condition as compared to when they were in dimmed condition. The perceived floor slipperiness after the gait (PFSafter) was significantly affected by the floor and surface conditions. The effects of lighting condition were insignificant. The PSOS was highly correlated with the PFSafter and was also significantly affected by floor and surface conditions. The regression analyses results indicated that both the COF of the floor and lighting were primary predictors of the PFSbefore. The COF and walking speed were the primary predictors of the PFSafter.

Keyword: slip and fall; gait; floor slipperiness; subjective rating; lighting