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Presenter/author	Title	Abstract
Kim, Hyunwook (Prof., PhD, CIH) Dept of Preventive Medicine, The Catholic University of Korea, Seoul Han, Don-Hee Department of Biostatistics, College of Medicine, The Catholic University of Korea, Seoul Park, Yong-Gyu and Roh, Young-Man Department of Industrial Safety and System Engineering, Inje University, Pusan, Korea	**Anthropometric Dimensions of Koreans and Their Associations with Fit of Quarter-Mask Respirators**	Historically, majority of respirator research have been focused on White, male subjects. Therefore, little information on respirator performance for Asians does exist. This study was designed to analyze the association between facial dimensions of Koreans and respirator fit factors obtained from three quarter-masks with quantitative fit testing using a PortaCount 8020 (TSI Co. USA). In addition, the performances of the three respirators, two domestic brands(Sejin SK-6 and Youngsung YS-2010) and one imported (3M-7500, medium, USA), were compared. Total 110 students, 70 males and 40 females, from a university located in Pusan were volunteered for the study. One person who was trained for facial dimensions from the Anthropology Research Project, Inc, USA, measured 12 facial dimensions to reduce interpersonal variations. All measurements were made in centimeters to one decimal point using a sliding-, and a spreading caliper and a steel measuring tape. Preliminary results showed that the imported respirator performed better than those of domestic ones ($P<0.05$, by Friedman nonparametric ANOVA). And males were fitted better than females regardless of respirator brands. A stepwise regression analysis using log-transformed fit factors and facial variables was used to select common prognostic variables. No common variables, however, were found for all three respirators studied. In males, the coefficients of determination (R2) were less than 5% while they were 21.5% to 60.9% in females. To find the most predictable model, we used the stepwise logistic model with heuristic method which maximizes the efficiency (E, probability of correct classification) and has the smallest number of facial measurements, using the fit factor of 100 as a pass/fail criterion. For the 3M-7500, predictive facial dimensions were bizygomatic breath(face width) and menton-subnasale length(lower face lenth) in males(E=65.2%), and menton-subnasale length and lip width in females (E=67.5%). For the SK-6, those were bigonial breath and bitragion subnasale arc in males (E=61.4%), and bitragion subnasale arc in females (E=76.9%). For YS-2000, none were found in males while biectoorbitale breath, subnasale-nasion length, lip width, and bitragion-menton arc were found in females(E=75%).