



Culinary Clothing and Safety: Kitchen Uniforms as Personal Protective Equipment

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Chefs work long hours, often in the kitchen for 8 or more hours daily. While chefs are in this environment, they are exposed to many hazardous conditions including (but not limited to) contamination from raw meat and poultry, exposure to cleaning or pest control products, performing repetitive manual tasks, working in extreme temperatures, working with knives or other sharp equipment, risk of burns from ovens, deep fryers, steam and hot water, and slips, trips or falls (CCOHS, 2004). However, very little research has been done evaluating the effectiveness of personal protective equipment (PPE) and clothing utilized in the kitchen. While the uniform of a chef is quite standard, very little scientific evidence exists that this uniform is indeed effective in preventing against kitchen related accidents and injuries. Foodservice workers reportedly have one of the highest numbers of recordable injuries and illnesses, with the most common injuries being sprains and strains, cuts, burns and lacerations, and slips and falls (Personick, 1991). Burn injuries in food service workers were found to be mostly caused by coffee spills, grease splashes, and inadvertent bumps/contact with hot equipment (Halpin, Forst, & Zautke, 2008). Although ways to avoid these injuries was suggested, there was no mention of aprons or chef's jackets and how they could be used to prevent against such burns. In another study, foodservice employees at one university were among a staff group that filed the highest number of accident/injury reports (Jaskolka, Andrews & Harold, 2008). Most of these injuries were due to being struck or caught by an object, slipping/tripping, and overexertion. Therefore, there is a clear need for more research to be done in regards to injury control and prevention and whether there is any potential for PPE to help lower accident rates, especially in the foodservice industry. This paper reports a study that examined the design, construction and effectiveness of the chef's uniform as PPE in the kitchen environment.

Methods: In order to investigate the effectiveness of the chef's jacket in the kitchen, a focus group was held with nine culinary arts students. Questions in the focus group were divided into three categories; the first dealing with protective clothing in the kitchen, the second dealing with comfort in the workplace, and the third dealing with workplace injuries. There were 13 questions in total, and the focus group lasted one hour in length. Notes were made during the session, and handouts were distributed to the students for additional data collection. Pictures were taken to capture the uniform currently worn by culinary arts students. The results of the focus group were then transcribed and qualitatively analyzed, looking for common themes from the discussion. Qualitative analysis was also carried out when examining the handouts, and notes were compared with transcripts to ensure accuracy.

Results/Discussion: As described by the culinary arts students, typical required wear consists of a double breasted chef's jacket, an apron, 2 side towels, black slip-free shoes, checkered chef's pants, a necktie, and a chef's hat. Within each of the three themes explored, there was one major finding from each group that resulted. First of all, from the section about protective clothing in the workplace, one main conclusion that came from this study was that

slip-free shoes are vital for protection, comfort and safety in the kitchen; however, the current design of the shoe is clunky and hard to walk in, creating another hazard in the kitchen. The second conclusion from this study dealt with comfort in the workplace. Many students felt that the unisex sizing of uniforms was not adequate, and sleeves were often too long. Finally, dealing with workplace injuries, everyone surveyed had experienced injuries while working in the kitchen. Most of these injuries were burns and cuts, and were sustained on hands and forearms. This is likely related to the trend students had of rolling up their jacket sleeves. This was a direct result of improper fitting uniforms. Students complained that long sleeves created another hazard in the kitchen, and that longer cuffs also get soiled more quickly, creating a hygiene concern. Therefore, it is evident that the design, functionality and protectiveness of the chef's jacket needs to be reevaluated, finding a more suitable solution. Issues in sizing need to be addressed, as well as sleeve-to-size proportions. As there is limited literature that looks at the design of the chef's uniform, this leads to the conclusion that researchers have not thoroughly considered the importance of proper PPE in the kitchen. This seemed to be well supported from the results of this study, indicating that students were generally dissatisfied with their uniforms, and felt there could be changes made to increase the level of protection their clothing gave them on the job.

Conclusions: This study acted as exploratory, qualitative research on the effectiveness of the current chef's uniform as PPE. Findings at this stage suggest that future research should be conducted using a larger, more diverse sample of culinary professionals, especially those from other specialties (i.e., retail meat cutting). Future research in this area could evaluate the design of the chef's jacket to determine if there are ways to increase comfort, as well as increase the likelihood the garment will be worn properly. This would include looking at sleeve length in more depth, trying to arrive at a solution that would not only be comfortable and practical for cooks, but also still protect their forearms from injuries. Additionally, future research could search for more comfortable alternatives to the traditional kitchen clog, looking for a shoe that is more athletic and comfortable to wear. Finally, with more time and resources than were available during the course of this study, the issue of culinary uniforms and protection could be explored in much more depth. Laboratory testing could provide evidence to support the findings of this study, providing ample evidence for reevaluating the design of the kitchen uniform. This could include testing jackets with a steam tester to see how the fabric would protect against burns, as well as being tested for flame resistance and thermal comfort. Based on this scientific analysis, future research could examine if both qualitative and quantitative evidence exists that changes to the current chef's jacket design should be made.

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