

A STUDY OF WOMEN IN NON TRADITIONAL JOBS IN INDIA

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Abstract

This study investigated vocational educators' perceptions toward female participation in nontraditional postsecondary programs by examining the underlying dimensionality of their perceptions and then determining the relative influence of select variables (gender, ethnic group, age, educational level, and current position) on those dimensions. A self-administered questionnaire containing 22 perception statements was mailed to a systematic sample of 315 vocational educators at 2-year postsecondary technical institutes in Georgia. A 61.58% response rate found a positive perception toward female participation in nontraditional programs. An exploratory factor analysis using a principal components procedure with varimax rotation generated 4 dimensions (promotion of females in nontraditional programs, perceived educators' role in nontraditional programs, female enrollment in nontraditional programs, and barriers for females entering the male's world). MANOVA and post hoc ANOVA procedures revealed that gender and current position had significant impact on educators' perceptions toward female participation in nontraditional programs; female vocational educators' perceptions were more positive than their male counterparts, and counselors were more likely to promote females entering nontraditional programs than administrators and instructors.

Introduction

Many women in nontraditional jobs, such as the construction trades, complain of ill-fitting personal protective clothing (PPC) and equipment (PPE). Clothing or equipment that is not sized, or does not fit, properly can compromise personal safety. It also may not function effectively in the manner for which it was designed.

Poor fit compromises the protection offered by the garment or equipment. The lack of appropriate PPC and PPE can cause serious safety and health risks for women, and men of smaller sizes, who rely on protective clothing and equipment to help them keep safe. Having inadequate or ill-fitting clothing, boots, gloves, or safety equipment presents a safety hazard for any worker.

Studies by NIOSH and the U.S. Department of the Army found that most tools, equipment, and clothing are not designed for a women's physique. When asked if they could easily find protective clothing to fit, 46% of women in the second NIOSH said "no" with respect to work shoes and 41% with respect to finding work gloves. One survey of manufacturers of protective equipment, taken at a National Safety Council Annual meeting, found that only 14 percent offered ear, head, and face protection in women's sizes.

The highest percentage, 59 percent, was manufacturers who offered foot protection in women's sizes. Ill-fitting personal protective equipment may be due to unavailability (i.e., manufacturers don't make or distributors don't stock), limited availability, or lack of knowledge among employers and workers about where equipment designed for a woman's body structure can be obtained. Personal protective equipment intended for use by women workers should be based upon female anthropometric (body measurement) data.

Work gloves must fit properly. Overly large gloves impair the transfer of sensory information from the hand, resulting in excessive force being applied. Tight gloves can restrict blood flow. Hand tools should be designed so that the stress concentrations can be spread evenly throughout the hand.

A recent NIOSH review found that few tools, equipment, or clothing are designed for a woman's physique. A recent study commissioned for the U.S. Army had similar findings. Recent studies have shown that to reduce work-related musculoskeletal disorders, tools, materials, and equipment should be designed based in part on ergonomic considerations. Tools and equipment, like clothing, are often designed to be used by average-sized men. As one woman in the NIOSH study noted:

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They do not make hand tools for women, and women come in all sizes, just like men. Handle size and tool weight are designed to accommodate the size and strength of men, yet the average hand length of women is 0.8 inches shorter than the average man's. Their grip strength averages two-thirds the power of a man's grip. The grips of tools are typically too thick. Tools like pliers require a wide grasp which puts inappropriate pressure on the palm, leading to the loss of functional efficiency. In addition, women do not receive training on how best to use tools and equipment designed for men.

Similarly the epidemiological studies, which provided the strongest basis for the NIOSH guidelines on lifting, were predominantly based on male workers. There is a critical need to increase our knowledge of the "safe limits" for women for lifting and other motions, such as forward flexion of the trunk (bending over). This information would be useful for preventing low back disorders among women working in construction. Back disorders, the most commonly compensated injury in the workplace, are particularly problematic in construction.

Women's size and body build require reconsideration of techniques for lifting and material handling. Not only do women come in all sizes and with varying degrees of muscular strength, their pelvic structure is different and their center of gravity is lower than men's. This would impact jobs that require standing at a work station. Lower equipment handles would facilitate the use of body weight in pushing and pulling tasks. Women's muscular strength is more equal to men's in their legs. Women would be on more equal footing with men if the work load could be transferred downward, with less reliance on the strength of hands and arms.

Since, on average, women tend to have less upper body strength than do men, they cannot use all of the techniques men use for lifting and material handling. Out of necessity, tradeswomen have to develop ways that make the job possible and safer for a woman. For example, a plumber from the first NIOSH study stated:

You learn what not to do.... I have a body, I can use it from here [top of head] down to my feet. I don't have to use my upper body. They [male workers] have upper body strength where we have it [strength] from here [top of head] to our toes. The guys will ... grunt and groan and struggle ... and I'll sit down, put my feet on one side [of the wrench], and pull on the other.... That's what I consider using my brain instead of my brawn.

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