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Dr. Debra Moser, Director of Graduate Studies

RISK FACTORS FOR WORKPLACE SEXUAL HARASSMENT IN FEMALE TRUCK DRIVERS

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Nursing
at the University of Kentucky

By
Kimberly Marie Riddle

Lexington, Kentucky

Director: Dr. Ellen Hahn, Professor of Nursing

Lexington, Kentucky

2021

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ABSTRACT OF DISSERTATION

RISK FACTORS FOR WORKPLACE SEXUAL HARASSMENT IN FEMALE TRUCK DRIVERS

Sexual harassment is one of the most common forms of workplace violence in the United States. Sexual harassment is defined as unwanted verbal and physical behaviors of a sexual nature (e.g., physical advances, requests for sexual favors, inappropriate sexist or sexual comments or jokes, pornography, or other unwanted conduct) that creates an uncomfortable working environment or interferes with the employee's job responsibilities. In general, it is estimated that nearly one in every two women have experienced sexual harassment at the workplace over their lifetime. In male-dominated occupations, such as truck driving, law enforcement, firefighting, and construction, females may have a higher-than-average risk of workplace sexual harassment, as their male counterparts may have more power and influence over their working environment. Organizational antecedents, or risk factors, for sexual harassment have been identified in general workplaces such as academia; however, research on organizational antecedents for sexual harassment in male-dominated occupations is limited. Identifying organizational antecedents of sexual harassment in the workplace can guide employers on the development of policies that could prevent or reduce the physical, psychological, and work-related consequences of workplace sexual harassment in male-dominated occupations.

The purpose of this dissertation was to examine the organizational antecedents associated with workplace sexual harassment in the male-dominated occupation of truck driving. The specific aims were to 1) conduct a systematic review of the research on the antecedents that put women at risk for and responses to sexual harassment in selected male-dominated occupations and identify gaps in research; 2) evaluate the psychometric properties of the author-developed Sexual Harassment Organizational Antecedent (SHOA) scale; and 3) examine the relationships between perceived organizational antecedents, demographic variables, and sexual harassment; and determine associations between job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure. A cross-sectional study design was used to develop and test a measure of organizational antecedents of sexual harassment and to examine the association with sexually harassing behaviors in a convenience sample of 236 female truck drivers who were at least 21 years of age, held a Class A Commercial Driver's License (CDL-A), and had a minimum of 3-months truck driving experience.

Female truck drivers were recruited via social media, email, online newsletters, and word of mouth and invited to complete an anonymous online survey comprised of the 15-item author-developed SHOA scale to assess job control and workplace culture; and the 18-item Sexual Experiences Questionnaire-Workplace version to measure self-reported sexually harassing behaviors while on the job.

Important gaps in the research on sexual harassment of female truck drivers were identified. The systematic literature review revealed inconsistent theoretical models guiding research with male-dominated occupations of law enforcement, firefighting, and construction, and there was limited research on the sexual harassment of female truck drivers. Organizational antecedents of and female responses to sexual harassment have been identified in the law enforcement, firefighting, and construction occupations, but in truck driving, sexual harassment has been studied as a part of workplace violence within the context of personal health, not as a specific phenomenon. Another gap was a lack of standard instruments to measure organizational antecedents that put females at risk for sexual harassment in the workplace. The 15-item author developed SHOA scale used in this study was developed based on constructs from the Sexual Harassment in Organizational Context Model. Psychometric evaluation of the SHOA scale revealed an overall reliable and valid instrument with two reliable and valid subscales: job control and workplace culture as organizational antecedents of sexual harassment in female truck drivers. However, research is needed to develop and test measures of formal grievance policies and peer relationships and to examine their associations with sexual harassment of female truck drivers. Finally, the SHOA scale, and the two subscales of job control and workplace culture were associated with sexual harassment in a sample of female truck drivers. In this convenience sample of female truck drivers, 92% reported experiencing at least one incident of sexual harassment in the workplace. Female truck drivers who reported more control over their jobs and a more positive workplace culture reported fewer incidences of sexual harassment in the workplace. When controlling for age, race, ethnicity, income, and tenure, workplace culture, age, and tenure accounted for 43% of the variance in self-reported sexual harassment. Female truck drivers who reported greater job security, less conflict with dispatchers, less physically demanding jobs, and equal pay and job opportunities in the workplace reported fewer incidences of sexual harassment. Older female drivers and those with less time driving a truck (shorter tenure) were less likely to report sexual harassment in the workplace. Women who lived in the West and Midwest indicated a greater number of incidences of sexual harassment.

This study evaluated female truck drivers' perceptions of organizational antecedents and experiences of sexual harassment in the workplace. Future studies need to include measures to determine if respondents based their answers on their current company or a company where they previously worked. In addition, it would be important to determine the time frame in which sexually harassing behaviors occurred. Future studies are also needed to examine and compare perceptions of organizational antecedents in the trucking occupation from both the female and male driver perspective, as well as perceptions from minority drivers. Finally, measures of formal grievance policies and peer relationships need to be developed and tested. Overall, more research is needed to evaluate organizational antecedents of sexual harassment in female truck drivers so that individual companies and employers in the trucking industry can understand the problem and develop policies and practices to prevent sexual harassment.

KEYWORDS: female, motor vehicles, workplace, sexual harassment, culture, risk factors

Kimberly Marie Riddle

Student's Signature

04/20/2021

Date

RISK FACTORS FOR WORKPLACE SEXUAL HARASSMENT IN FEMALE TRUCK DRIVERS

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For My Husband, Thomas

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CHAPTER 1: Introduction

Sexual harassment was first publicized as a problem in the workplace in the 1970's when more women began to enter the workforce. Globally, 1 in 2 women have reported being sexually harassed while at work (UN Women, 2012). In the United States, 40% to 75% of women have reported experiencing sexually harassing behaviors while at work (Aggarwal & Gupta, 2000; Das, 2009; Snyder, Scherer, & Fisher, 2012; United States Equal Employment Opportunity Commission, 2016), and more than 70% have reported offensive verbal behaviors as the most frequently experienced type of sexual harassment (Kearl, 2018).

Definition of Sexual Harassment

Prior to 1964, there was no conclusive definition of workplace sexual harassment. Title VII of the Civil Rights Acts of 1964 identified and defined workplace sexual harassment as unwelcome sexual comments, advances, physical conduct, or requests for sexual favors that interfere with job performance and create an uncomfortable or hostile workplace (Cates & Machin, 2012; United States Equal Employment Opportunity Commission, n.d.-a). There are two categories of sexual harassment: quid pro quo and hostile environment. Quid pro quo, meaning 'this for that', usually occurs between an employee and someone in a managerial position. It may also be considered sexual blackmail or sexual coercion (Bacharach, Bamberger, & McKinney, 2007; Cates & Machin, 2012; Dickinson, 1995). Hostile environment occurs when an individual or individuals create a sexualized work environment that interferes with another's ability to perform their role effectively (Merriam-Webster, n.d.). Gender harassment and unwanted

sexual attention contribute to a hostile environment in the workplace (Fitzgerald, Gelfand, & Drasgow, 1995).

Gender harassment, while classified as sexual harassment, may or may not be of a sexual nature. Gender harassment is defined as the act of exclusion or offensive remarks or actions based on an individual's sex (e.g., women are too weak to do this job) (United States Equal Employment Opportunity Commission, n.d.-b). Unwanted sexual attention encompasses a broad range of verbal, non-verbal and physical behaviors that are offensive and unwanted (Fitzgerald et al., 1995). Verbal harassment may include jokes of a sexual nature, sexual innuendos, intimate questions or comments, or proposals for sexual relationships or services. Non-verbal harassment may include voyeurism, pornographic material, or staring or ogling. Physical sexual harassment may include touching or caressing, pinching, or attempts to kiss (United Nations, n.d.).

Theories of Sexual Harassment

Theories of sexual harassment are broad, and there is no single theory that explains the phenomenon. Five theories contribute to a better understanding of the problem in the workplace: 1) Power model, 2) Sex-Role Spillover theory, 3) Social-Contact theory, 4) Integrated Process Model of Antecedents, and 5) Sexual Harassment in Organizational Context model. The Power model posits an unequal power dynamic between men and women that may degrade women and make them feel powerless (Cleveland & Kerst, 1993; Farley, 1978; MacKinnon, 1979). The Sex-Role Spillover theory, the most cited sexual harassment model, postulates that gender-based expectations or behaviors that are inappropriately brought into the workplace contribute to sexual harassment (Gutek & Morach, 1982). In organizations where workplace

expectations or tasks are assigned to individuals based on sex, higher rates of sexual harassment are reported as women may be feminized and made to feel powerless in their jobs (Folgerø & Fjeldstad, 1995; Rogers & Henson, 1997). The Social-Contact theory suggests that sexual harassment is a direct result of contact between men and women (Gutek, Cohen, & Konrad, 1990). The Integrated Process Model of Antecedents (IPMA) speculates that organizational context (i.e., worker and workplace attitudes regarding sexual harassment and the presence or absence of sexual harassment policies) and job context (i.e., gendered nature of the workgroup including male to female ratios) are antecedents to sexual harassment (Fitzgerald, Hulin, & Drasgow, 1994). Organizations that are slow to react to charges of sexual harassment, have passive leadership, and increased levels of incivility have higher incidences of sexual harassment, as passive managers may be less likely to intervene (Bass, 1990; Holtz & Harold, 2013; Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007). In gendered environments (e.g., more males than females in an organization), men may work to protect their social status and use gender hierarchy as a basis for sexual harassment (Berdahl, 2007). Lastly, the Sexual Harassment in Organizational Context model theorizes that a combination of the IPMA constructs identified by Fitzgerald et. al. (1994) and workplace culture (i.e., values, beliefs, behaviors, and interactions within a workplace) are associated with sexual harassment in the workplace (Chamberlain, Crowley, Tope, & Hodson, 2008). In masculine occupations (e.g., those where physical strength and resistance are necessary), sexual harassment is higher as men may employ sexuality as a means to control women (Gruber, 2003; Gutek & Morach, 1982; Wasti, Bergman, Glomb, & Drasgow, 2000).

Truck Driving as a Male-dominated Occupation

Male-dominated occupations employ a workforce comprised of fewer than 25% women. There are 68 occupations identified as male-dominated (United States Department of Labor, 2019). They include farmers (24%), software developers (19%), police officers (14%), firefighters (8%), truck drivers (5%), and construction workers (3%) (United States Department of Labor, 2019). The reason women chose male-dominated fields is varied: better pay, job satisfaction, advancement opportunities, and the chance to work with their hands (American Federation of State County and Municipal Employees, 2019). However, women in male-dominated occupations may face improper training, isolation, lack of acceptance by peers and supervisors, and sexual harassment (American Federation of State County and Municipal Employees, 2019). Female truck drivers may be especially vulnerable to sexual harassment due to the nature of their jobs (limited contact with other females and a mobile workplace) (Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997; Willness, Steel, & Lee, 2007).

There are nearly 8 million people employed by the trucking industry; 2 million heavy truck and tractor operators and 1.5 million delivery drivers or driver/sales workers (United States Department of Labor, 2020a, 2020b). Of the 3.5 million drivers employed by the trucking industry, between 175,000 and 245,000 are women (5%-7%) (United States Department of Labor, 2021). Due to the limited number of female trainers, most women are paired with a male during their initial training period prior to going over-the-road as either a solo driver or part of a team (with a friend or family member or with a company-appointed partner) (Voie, 2016). As trucking is considered a mobile workplace, the majority of female drivers' daily interactions are with men inside and outside their companies (e.g., dispatchers, other drivers, dock hands) who may or may not support

women as truck drivers. This seemingly unavoidable contact with men may put female truck drivers at risk for increased incidences of sexual harassment.

Purpose

The purposes of this dissertation were to: 1) conduct a systematic review of the research on the antecedents that put women at risk for and responses to sexual harassment in selected male-dominated occupations and identify gaps in research; 2) evaluate the psychometric properties of the author-developed Sexual Harassment Organizational Antecedent (SHOA) scale; and 3) examine the relationships between perceived organizational antecedents, demographic variables, and sexual harassment; and determine associations between job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure. Each purpose of the dissertation is addressed in Chapters 2-4.

Chapter Overviews

Chapter Two

Chapter Two of this dissertation was a systematic review to provide an overview of the research related to sexual harassment of women in selected male-dominated occupations, specifically in law enforcement, the fire service, truck driving, and construction. The aims of this systematic review were to: 1) provide a focused summary of the state of science related to antecedents that put women at risk for and responses to sexual harassment in selected male-dominated occupations; and 2) identify gaps in the research related to sexual harassment in selected male-dominated occupations. Electronic databases were searched from 1980 to 2020 utilizing the key words: *sexual harassment* in combination with *workplace*, *police or law enforcement*, *firefighters*, *truck driver or*

trucker, and *construction*, *construction trades*, *construction industry*, or *construction worker*. The studies retained for the review focused on organizational antecedents that put women at risk for sexual harassment and responses to sexual harassment. Findings of the review revealed limited research on organizational antecedents in the occupations of law enforcement, firefighting, and construction. Sexual harassment of female truck drivers was addressed as part of larger studies focusing on general workplace violence and health-related issues.

Chapter Three

Chapter Three was a psychometric analysis of the author-developed Sexual Harassment Organizational Antecedent (SHOA) scale. The purposes of the study were to design an instrument to measure organizational antecedents of sexual harassment in male-dominated workplaces and to evaluate its psychometric properties in a sample of female truck drivers. The specific aims were to: 1) develop items based on the Sexual Harassment in Organizational Context Model and determine content validity of the item characteristics (e.g., relevance, objectivity, clarity, simplicity, practicality, and vocabulary) using an expert panel of reviewers; 2) provide evidence of internal consistency reliability of the instrument and its subscales in a sample of female truck drivers; and 3) examine the construct validity of the items to verify they are measuring each construct. The survey items, with response choices on a 5-point Likert-type scale, were designed to measure constructs of worker power, workplace culture, and gender context of the workplace. Three reviewers with expertise in occupational and public health evaluated the initial 15 items for relevance, objectivity, clarity, simplicity, practicality, and vocabulary, as dimensions of content validity. There was low-moderate

agreement ($\kappa = .42$, $p < .0001$) among the three expert panel reviewers for the original 15-item scale, and the scale was revised. Three items were added to capture the aspects of the constructs related to the truck driving population. The 18-item scale was tested in a sample of female truck drivers ($N = 236$). Three items were removed from the scale prior to analysis as two items more closely resembled demographic characteristics and the third item was removed as it measured the male to female ratio in a male-dominated occupation. Content validity, Cronbach's alpha, primary component analysis, and post hoc analysis demonstrated adequate reliability and validity of the instrument to measure organizational antecedents to sexual harassment in a sample of female truck drivers.

Chapter Four

Chapter Four was a cross-sectional, non-experimental research study to determine the relationship between perceived organizational antecedents and sexual harassment in a sample of female truck drivers. The specific aims were to: 1) examine the relationships among perceived organizational antecedents, demographic variables, and sexual harassment; and 2) determine associations among job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure. We hypothesized that female truck drivers who reported greater job control and a positive workplace culture would be less likely to report incidences of sexual harassment in the workplace (Aim 2). Female truck drivers ($N = 236$) were asked to complete an anonymous 48-item on-line questionnaire to evaluate perceptions of organizational antecedents that may put female truck drivers at risk for sexual harassment, behaviors they have experienced associated with sexual harassment, and demographic and job characteristics. The survey consisted of the 15-item author-developed SHOA scale to

assess job control (5 items; e.g., when and where to take a 34-hour restart, when to take a 30-minute break, control over loads, and control over route planning) and workplace culture (6 items; e.g., job security, dispatcher conflict, physicality of the job, equal pay and job opportunities, and job take-over); and the 18-item Sexual Experiences Questionnaire-Workplace version (SEQ-W) to measure self-reported sexually harassing behaviors (e.g., sexual stories or jokes, crude or sexist remarks, sexual propositions, deliberate, unwanted touching) while on the job. Study variables and demographic characteristics were summarized utilizing means and standard deviations (continuous variables) and frequency distributions (categorical variables). Interval level correlations utilizing Pearson r were conducted to evaluate the relationship between the Sexual SHOA scale and its subscales, job control and workplace culture; demographic and job-related variables, and SEQ-W. Analysis of Variance (ANOVA) or independent T-tests were used to assess bivariate associations between additional demographics (e.g., education level) and variables specific to truck driving (e.g., state of residence, driving status, nights away from home per month, and owner status). Multiple linear regression was conducted to evaluate the strength of associations between the multiple variables. The SHOA scale, and the subscales of job control and workplace culture were negatively correlated with sexual harassment. The greater the job control and more positive the workplace culture, the lower the reported incidences of sexual harassment. Age was also negatively correlated with sexual harassment. Older female truck drivers were less likely to report sexual harassment on the job. Independent T-Test indicated a significant correction between the control variable of ethnicity and reported incidences of sexual harassment. Female drivers who identified with Hispanic/Latino ethnicity were more likely to report

incidences of sexual harassment while on the job. In addition, there was a significant correlation between the job-related demographic of nights away from home and reported incidences of sexual harassment. However, post hoc analysis revealed no significant differences between groups (e.g., 4 or fewer nights away, 10-14 nights away, 20 or greater nights away). Regression analysis revealed that workplace culture (i.e., job security, dispatcher conflict, physicality of the job, equal pay and job opportunities, and job take-over) was associated with sexual harassment in this sample of female truck drivers, controlling for age, race, ethnicity, income, and tenure. In addition, age and tenure (length of time as a truck driver) were significantly associated with sexual harassment. Two regions (West and Midwest) indicated a greater number of incidences of sexual harassment, compared to the reference region of Canada. Job control was not associated with reported incidences of sexual harassment. Over 40% of the sample of female truck drivers reported previous experience with sexual harassment. However, approximately 92% reported at least one sexually harassing behavior.

Chapter Five

Chapter Five is a synopsis of study results and conclusions from the prior chapters of this dissertation. In addition, limitations and recommendations for future research as well as implications for practice and policy development are discussed.

In summary, this dissertation provided an understanding of the perceived organizational antecedents of sexual harassment in a sample of female truck drivers. As research on female truck drivers is limited and it centers on general workplace violence and health issues, there was a knowledge gap regarding the role organizations and job characteristics played in the sexual harassment of female drivers. The results of this study

may help the truck driving industry and female drivers themselves begin to understand why sexual harassment occurs in the workplace and provide organizations guidance in developing training programs, policies, and procedures for combating sexual harassment in this male-dominated occupation.

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CHAPTER 2: Sexual Harassment of Women in Selected Male-Dominated Occupations: A Systematic Review

Abstract

Background: Sexual harassment affects approximately 50% of women in all workplaces. Women who work in male-dominated occupations in community settings (e.g., buildings or places not owned by the employer) may be more susceptible to sexual harassment than those who work in employer-owned (e.g., factory, office, school) settings. Male-dominated occupations are those in which men outnumber women by 75% or more of the workforce. Research on factors contributing to workplace sexual harassment in male-dominated occupations is limited.

Objective: To review the research literature on antecedents that put female workers at risk for sexual harassment and their responses to sexual harassment in select male-dominated occupations in community settings (e.g., protective services, transportation, and construction) in the United States and to identify gaps in the research literature.

Method: A search was conducted using *PubMed*, *CINAHL*, *PsycINFO* and *Web of Science* from 1980 to 2020 using the following key words: *sexual harassment* and *workplace* in combination with *police, law enforcement, firefighters, truck drivers, trucker, construction industry, construction trades, construction worker*, and *construction laborer*. Criteria for inclusion were sexual harassment of females in male-dominated occupations such as law enforcement, firefighting, truck driving, and construction. Articles from the search were used to identify the antecedents that put women at risk for

sexual harassment and the responses to sexual harassment in male-dominated occupations.

Results: The search returned 32 relevant research articles that used cross-sectional designs, qualitative designs, and mixed methods. Twenty-three of the studies (72%) were with police or firefighters. Twenty of the 32 studies (63%) employed a theory, model, or framework to guide the research. Twelve of the 32 studies (38%) investigated specific constructs (e.g., sexualized work environment, workplace and gender identities or roles, masculinity, bullying, gender ratios) but did not specify a theory, model, or framework. Twelve of the 32 studies (38%) utilized established, or tested, measures to collect data; 17 (53%) utilized researcher-developed measures, and three (9%) employed both established and researcher-developed measures. Antecedents contributing to sexual harassment in the workplace included lower rank, shorter tenure, greater physicality of the job, job insecurity, negative relationships with peers and/or supervisors, treating women as outsiders, exaggerated gender differences (e.g., characteristics of an individual that pertain to or differentiate between masculine and feminine), unequal gender ratios, and promotions based on gender not ability. Women who reported sexual harassment in male-dominated occupations describe direct (e.g., confrontation) as well as indirect (e.g., avoidance, formal complaints) responses to cope with harassment, and they report negative physical, psychological, and work-related outcomes.

Conclusion: As identified in this review, workplace sexual harassment is a problem in male-dominated occupations in community settings such as law enforcement, firefighting, truck driving, and the construction industry. Common antecedents to sexual

harassment in the workplace identified in the literature include organizational culture (e.g., co-worker and supervisor relationships) and gender composition (e.g., unequal gender ratios). Women who report sexual harassment on the job respond by ignoring the problem, directly confronting the harasser, and/or filing formal complaints. Research is needed to better understand the organizational antecedents of sexual harassment in male-dominated occupations in community settings in order to determine how organizations can prevent the incidence of sexual harassment.

Introduction

Workplace sexual harassment affects an average of 25-80% of all working women over their lifetimes (Feldblum & Lipnic, 2016) and is one of the most common forms of workplace sexual violence (Fitzgerald, 1993). Sexual harassment in the workplace has received much attention since the 1980s, and there has been an increase in research studies in the last few years relating to workplace sexual harassment, especially in academia (Bates et al., 2018; Bursik & Gefter, 2011; De Haas & Timmerman, 2010; Jagsi et al., 2016; Jenner, Djermester, Prügl, Kurmeyer, & Oertelt-Prigione, 2019; Lampman, Crew, Lowery, & Tompkins, 2016; Walton, 2015). However, research in male-dominated occupations, workplaces where men have more power and influence over their working environment than women in the same environment, is limited.

Sexual harassment has its origins in power and control, and it is generally used as a means of social exclusion in male-dominated occupations (Lopez, Hodson, & Roscigno, 2009; Lunenburg, 2010; McDonald, 2012). Women are often described as weak or fragile, inferior, outsiders, and unqualified in male-dominated occupations (Gruber & Bjorn, 1982; Hulett, Bendick, Thomas, & Moccio, 2008; Lillydahl, 1986; Morral et al., 2014). In contrast, men in male-dominated occupations are often described as having masculine qualities (e.g., power, toughness, and aggressiveness) (Vogt, Bruce, Street, & Stafford, 2007). The use or misuse of power between co-workers (informal power) and between management and subordinates (formal power) can be a precursor to workplace sexual harassment (Benson & Thomson, 1982; Cleveland & Kerst, 1993; McKinney, 1994; Rospenda, Richman, & Nawyn, 1998).

Prior to 1964, there was no accepted definition of workplace sexual harassment. Title VII of the Civil Rights Acts of 1964 identified and defined workplace sexual

harassment and made it a crime (Cates & Machin, 2012; United States Equal Employment Opportunity Commission, n.d.). Workplace sexual harassment is any unwanted behavior of a sexual nature (e.g., physical advances, requests for sex favors, inappropriate sexist or sexual remarks, or other unwanted conduct) that unreasonably interferes with the job duties of an individual (e.g., work performance) or creates an environment that is uncomfortable or hostile (United States Equal Employment Opportunity Commission, n.d.).

Types of Sexual Harassment

The types of sexual harassment women face in male-dominated occupations range from bullying and discrimination to threats and sexual assault (rape) (Jahnke et al., 2019; Murphy, Beaton, Cain, & Pike, 1995; Pogrebin & Poole, 1997; Rosell, Miller, & Barber, 1995; Yoder & Aniakudo, 1995, 1996). More often than not, women in male-dominated occupations are the victims of gender harassment (also called sex-based harassment or gender discrimination), unwanted sexual advances (e.g., jokes, teasing, pranks, pornography, etc.), and in some instances, quid pro quo, also called sexual coercion (someone with higher power requesting sexual favors in exchange for something), and sexual assault (Curtis, Meischke, Stover, Simcox, & Seixas, 2018; Hulett et al., 2008; Prokos & Padavic, 2002; Texeira, 2002). The most prevalent types of sexual harassment in male-dominated occupations are gender harassment and unwanted sexual attention (Anderson, Westneat, & Reed, 2005; Griffith, Roberts, & Wakeham, 2016; Martin, 1978; Reed & Cronin, 2003). Sexual coercion and attempted or actual rape are the least prevalent types of sexual harassment reported (Lonsway, Paynich, & Hall, 2013; Somvadee & Morash, 2008; Texeira, 2002). The majority of sexual harassment in male-

dominated occupations comes from coworkers and supervisors (Morris, 1996; Pogrebin & Poole, 1997; Prokos & Padavic, 2002; Rabe-Hemp, 2008; Seklecki & Paynich, 2007; Texeira, 2002).

Male-Dominated Occupations

Male-dominated occupations are those in which women make up less than 25% of the workforce (American Federation of State County and Municipal Employees, 2019). There are 68 occupations with fewer than 25% of women in their workforce (United States Department of Labor, 2019). **Table 2.1** outlines the percentage of women in each occupation category, grouped according to the 2018 Standard Occupational Classification System (United States Department of Labor, 2018). Arts, design, entertainment, sports, and media occupations (e.g., musicians, singers, and other related workers) have the highest average percentage of women (21.8%). Building and grounds cleaning and maintenance occupations (e.g., grounds maintenance workers) have the lowest average percentage of women (4.7%). Women who work in community-based settings such as police officers (13.6%), firefighters (8%), truck drivers (5.3%), and in construction as laborers and in specialty trades (2.9%) fall in the lower one-half of the list (United States Department of Labor, 2019).

Most women who work in male-dominated occupations are often attracted to hands-on work in community-based settings. A community-based setting is described as a place outside of an employer's walls, not owned by the employer, where employees provide services (Commission on Accreditation of Rehabilitation Facilities, 2020; Law Insider, 2020). The reasons women choose male-dominated occupations in community-based settings are varied: better pay and benefits, greater autonomy, and the opportunity

to work with their hands (American Federation of State County and Municipal Employees, 2019). However, the barriers for women in male-dominated occupations are even greater than for those in more conventional occupations including lack of acceptance by peers and supervisors, improper training, isolation, and sexual harassment (American Federation of State County and Municipal Employees, 2019).

Women in male-dominated occupations may be especially vulnerable to workplace sexual harassment due to the nature of their jobs (Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997; Willness, Steel, & Lee, 2007). It is estimated that 20%-100% of women working in male-dominated occupations have reported being the victim of sexually harassing behaviors while at work (Curtis et al., 2018; Hom, Stanley, Spencer-Thomas, & Joiner, 2017; Lonsway et al., 2013; Seklecki & Paynich, 2007; Somvadee & Morash, 2008). However, those numbers may not be accurate as not all women label the behaviors associated with sexual harassment as such (Denissen, 2010), indicating there is either a lack of knowledge about sexual harassment or systemic organizational factors that may put women at risk and impact how women (and men) respond to harassment (Griffith et al., 2016; Hom et al., 2017; Khan, Davis, & Taylor, 2017; Lonsway et al., 2013; Seklecki & Paynich, 2007; Somvadee & Morash, 2008; Texeira, 2002).

Organizations where workplace expectations or tasks are assigned to individuals based on gender have higher rates of sexual harassment as women are often feminized and made to feel powerless in their jobs (Folgerø & Fjeldstad, 1995; Rogers & Henson, 1997). In traditionally masculine occupations (e.g., those where physical strength and resistance are necessary), sexual harassment of women is greater than in workplaces that do not require physical strength (e.g., commerce) as men may employ sexuality as a

means to control women (Gruber, 2003; Gutek & Morach, 1982; Wasti, Bergman, Glomb, & Drasgow, 2000). In gendered environments (e.g., more males than females in an organization), men may protect their social status and use gender hierarchy as a basis for sexual harassment (Berdahl, 2007).

Sexual harassment in male-dominated occupations has been studied, but there has been little research with women in community-based male-dominated occupations such as protective services (police officers and firefighting), truck driving, or construction. This systematic review focuses on sexual harassment among women who work in law enforcement, the fire service, truck driving, and construction as these women share a similar work setting, and these occupations typically employ a relatively low percentage of females.

Purpose and Aims

The purpose of this systematic review was to provide an overview of the research related to sexual harassment of women in selected male-dominated occupations, specifically in law enforcement, the fire service, truck driving, and construction. The aims of this systematic review were to: 1) provide a focused summary of the state of science related to antecedents that put women at risk for and responses to sexual harassment in selected male-dominated occupations; and 2) identify gaps in the research literature related to sexual harassment in selected male-dominated occupations.

Methodology

The systematic review included database searches in *PubMed*, *CINAHL*, *PsycINFO*, and *Web of Science*. MeSH headings used in PubMed included *sexual harassment* in combination with *workplace*, *police or law enforcement*, *firefighters*, and

construction industry. No MeSH headings were found for *truck drivers* or the *trucking industry*. The searches in *CINAHL*, *PsycINFO*, and *Web of Science* utilized the following key words: *sexual harassment* in combination with *workplace*, *police or law enforcement*, *firefighters*, *truck driver or trucker*, and *construction*, *construction trades*, *construction industry*, or *construction worker*. Peer-reviewed articles in English from January, 1980 to January, 2020 were included in all searches. Additional search options employed included female, USA and adult. Abstracts and text from the searches were reviewed for relevancy. Duplicate articles, reviews, books, dissertations; and studies outside the United States, those on the sexual harassment of women under the age of 18, those relating to the medical profession, and those solely on sexual harassment of men were excluded. References from retained studies were reviewed for additional articles that met the search criteria. The retained studies focused on selected male-dominated occupations within the United States that investigated antecedents that put women at risk for workplace sexual harassment and responses to sexual harassment.

The initial literature search returned 330 articles. Nineteen articles on women in police or law enforcement, fire service, truck driving, and construction were identified from the initial search using the methods described above. An additional 13 articles were identified following a review of references from the original 19 articles. In total, 32 articles were retained for inclusion in this review. **Figure 2.1** summarizes the search methodology and the numbers of articles reviewed.

Results

The 32 studies of selected male-dominated occupations included in this systematic review used cross-sectional designs (n = 16), qualitative methods (n = 9), or

mixed methods (*n* = 7). Of the 32 studies, 14 investigated antecedents of sexual harassment, seven were responses to sexual harassment, and 11 were examinations of both antecedents and responses to sexual harassment. Twenty-three studies (72%) focused on women in the protective services. Ten of these studies were investigations of antecedents to sexual harassment and five were responses to sexual harassment; eight studies were investigations of both antecedents and responses. Five of the 32 studies (16%) were on women in truck driving, and they focused on general workplace violence (e.g., physical violence and sexual harassment) and health related issues (e.g., obesity, fatigue, stress, muscle strains). All five studies identified antecedents to workplace violence. Responses to sexual harassment were identified in three of the five studies of women in truck driving. Four of the 32 studies (13%) were on women in construction, and three of them identified both antecedents and responses to sexual harassment; only one was focused solely on responses to sexual harassment in the workplace. Twenty of the 32 studies (63%) utilized one or more of 16 frameworks, theories, or models to guide the study of antecedents in response to sexual harassment.

Sample sizes ranged from 21 to 2,531. Twenty-four of the 32 studies (75%) were comprised of only female participants. Twelve (38%) of the 32 studies utilized established, or tested, measures to collect data: 17 utilized researcher-developed measures, and three employed both established and researcher-developed measures. **Tables 2.2 - 2.5** describe each of the 32 articles included in this systematic review.

Antecedents of Sexual Harassment in the Workplace

Twenty-five of the 32 articles (78%) summarized in **Tables 2.2 - 2.5** investigated antecedents of sexual harassment. Antecedents, or risk factors, for sexual harassment in

the workplace include culture of the workplace and gender composition of the workplace. Of these, 18 were specific to protective services (e.g., law enforcement [**Table 2.2**] and firefighters [**Table 2.3**]); four were specific to truck driving (**Table 2.4**); and three were specific to construction (**Table 2.5**). Of these 25 studies, 12 were cross-sectional designs; seven were qualitative designs; and six were mixed methods. Only eight (32%) of the 25 studies on antecedents of sexual harassment used theoretical frameworks, theories, or models to guide the research. The theories or models used include: a) Tokenism (Kanter, 1977); b) Sex-Role Spillover theory (Gutek & Morach, 1982); c) Social-Contact Hypothesis theory (Gutek, Cohen, & Konrad, 1990); d) Person-Environment Fit (PEFit) model (Shirom, Quick, & Tertick, 2003); e) Behavioral Model of Health Services (Andersen, 1968); and f) the Power model (Remick, Salisbury, Ginorio, & Stringer, 1990). Three of the eight studies used a combination of two or more of these six theories or models. The Sex Role-Spillover theory and the theory on Tokenism were the most frequently utilized.

Of the 25 studies on antecedents to sexual harassment, sample sizes ranged from 21 to 2,531. Thirteen studies (52%) were comprised of only female participants. Twelve studies were comprised of both male and female participants. Of the 25 articles, six used established measures to collect data; 15 employed researcher developed measures; and two employed both established and researcher developed measures to collect data. Two studies utilized untested researcher developed measures from prior studies. The antecedents of sexual harassment identified in the 25 studies were categorized as organizational culture in the workplace or gender composition of the work environment.

Findings from these 25 studies on antecedents revealed that organizational culture (80% of the studies) and gender composition (32% of the studies) were the primary antecedents to sexual harassment in the selected male-dominated occupations. Coworker relationships and traits associated with the job were most often reported while gender composition and remedies were the least investigated in the research. Studies on antecedents to sexual harassment of women in protective services were the most prominent (72%) while those with women in construction were less common. The studies on women in trucking did not directly address antecedents to sexual harassment; instead, sexual harassment was integrated into measurement of workplace violence and health of drivers.

The research on antecedents to sexual harassment included a variety of study methods that yielded descriptive information in selected male-dominated occupations. While cross-sectional and qualitative designs were only observational in nature, they provided a wealth of information; however, they did not provide understanding of the causes of sexual harassment and effects on women in male-dominated occupations. In addition, the studies on antecedents relied on self-report data and investigated convenience samples that were often small, resulting in potential selection, response or social desirability bias and data that were not generalizable. Further, researchers have not consistently used theories or models to guide their research; nor have they used established, or tested measures which could result in contradictions and test results that are not reliable or valid. Sixty percent of the studies on antecedents used researcher-developed measures and either did not report psychometric data or reported poor psychometrics. Only 13 of the 25 studies on antecedents included one or more of six

identified frameworks, theories, or models. The theory on Tokenism (Kanter, 1977) and the Power model (Remick et al., 1990) guided the study of organizational culture factors associated with sexual harassment. The Sex-Role Spillover theory (Gutek & Morach, 1982) and the Social-Contact hypothesis (Gutek et al., 1990) guided the investigation of gender composition.

Organizational Culture

Twenty (80%) of the 25 articles on antecedents to sexual harassment made reference to organizational culture as a precursor to sexual harassment (Bernard, Bouck, & Young, 2000; Goldenhar, Swanson, Hurrell Jr, Ruder, & Deddens, 1998; Goldenhar, Williams, & Swanson, 2003; Griffith et al., 2016; Hassell, Archbold, & Stichman, 2011; Hollerbach et al., 2017; Hulett et al., 2008; Lembright & Riemer, 1982; Maeder, Wiener, & Winter, 2007; Martin, 1978; Morris, 1996; Murphy et al., 1995; Pogrebin & Poole, 1997; Prokos & Padavic, 2002; Rabe-Hemp, 2008; Seklecki & Paynich, 2007; Somvadee & Morash, 2008; Stohr, Mays, Beck, & Kelley, 1998; Texeira, 2002; Yoder & Aniakudo, 1996). Organizational culture refers to the beliefs, attitudes, and assumptions that people in a particular environment share that impart acceptance of sexual harassment (Fitzgerald, Hulin, & Drasgow, 1994). The organizational culture of the workplace was comprised of many facets that reportedly contributed to sexual harassment of women in male-dominated occupations. It included traits associated with the job (e.g., teamwork, acceptance, and physicality), workplace relationships (e.g., coworker-to-coworker and employee to supervisor), and the presence, accessibility and effectiveness of harassment remedies (e.g., the presence of policies and consequences for the harasser and protections against sexual harassment).

Women in male-dominated occupations in community settings face risk of sexual harassment due to, in large part, the culture of the workplace (Bernard et al., 2000; Goldenhar et al., 1998; Lembright & Riemer, 1982; Morris, 1996; Stohr et al., 1998) as women in male-dominated occupations (e.g., law enforcement, firefighting, truck driving or construction) were often not accepted as part of the team. Consistent with the theory of Tokenism (Kanter, 1977), they were often hired to give the appearance of equality between genders in a workplace thus setting women up for increased incidences of sexual harassment. In these workplaces, women may have been excluded from organizational socialization and been forced to endure hostile work environments meant to further alienate women (Pogrebin & Poole, 1997; Rabe-Hemp, 2008; Yoder & Aniakudo, 1996). These exaggerated circumstances and the presence of hegemonic masculinity (the culture dynamics that legitimize men's higher social standing and make women subservient) may have begun in training and eventually followed women into their careers (Prokos & Padavic, 2002; Rabe-Hemp, 2008) where they reported being treated as outsiders in their jobs; made to feel less welcomed into the profession; or reported they were perceived as weak and incompetent (Griffith et al., 2016; Hulett et al., 2008; Martin, 1978; Pogrebin & Poole, 1997; Prokos & Padavic, 2002; Rabe-Hemp, 2008; Seklecki & Paynich, 2007). Additionally, the behaviors associated with sexual harassment were often considered part of the job. When women chose not to accept them as a trait associated with the job, their positions within the workplace were reportedly jeopardized as negative reactions to harassment by women (e.g., sensitivity, overreaction) could have caused them to lose their social status within the workplace or increased the degree of harassment they face (Martin, 1978; Texeira, 2002).

In addition to teamwork and acceptance, organizational culture traits, physicality, the physical stature, or strength required to complete a job, was an important organizational culture trait that was associated with sexual harassment. As many females lack the physicality of men, they often did not make it through assessments, physical training, or orientation. For firefighters, the pass rate on agility tests for women was one-half that of men (Hulett et al., 2008) as women did not have the same physical strength as men but were tested using the same criteria. Women in the protective services and construction have raised physical safety concerns related to physicality as they were inadequately trained, forced to learn on their own, and given equipment that did not fit (Curtis et al., 2018; Griffith et al., 2016; Hollerbach et al., 2017; Hulett et al., 2008; Pogrebin & Poole, 1997). Women in construction reported being given difficult tasks in which skills were reported to be underutilized or reported having to overcompensate to prove themselves, setting the stage for sexual harassment (Goldenhar et al., 2003). Women in law enforcement reported that their physical stature had been called into question, and as a result, they were perceived as less competent setting them up for sexual harassment (Hassell et al., 2011; Martin, 1978; Pogrebin & Poole, 1997; Somvadee & Morash, 2008). Female officers also expressed that male officers thought their female counterparts needed to be protected just because they were women and had fewer physical capabilities (Pogrebin & Poole, 1997), setting the stage for how workplace relationships affected the incidence of sexual harassment, as indicated in 15 of the 25 studies on antecedents to sexual harassment.

In addition to job traits, poor workplace relationships might have increased the risk of sexual harassment for women in male-dominated occupations. Poor workplace

relationships include mistrust and lack of confidence in coworkers leading to safety concerns and low morale setting the stage for sexual harassment. In law enforcement, women reported being put into more danger during training and while on the job if they were considered troublemakers for reporting harassing behaviors. Also, as a way of maintaining control and punishing women for reporting, men might have preferred to see women struggle with a task rather than help them which set them up for sexual harassment because of lack of strength and or/knowledge (Griffith et al., 2016; Hollerbach et al., 2017; Hulett et al., 2008; Pogrebin & Poole, 1997; Texeira, 2002). Furthermore, women were often humiliated or demoralized as men made them the focus of sexual jokes or engaged in inappropriate workplace gossip about them (Martin, 1978; Pogrebin & Poole, 1997) creating tension and further mistrust between coworkers.

Workplace gossip about women in protective service occupations and in the construction industry was reported to result in decreased productivity, giving men an unfair advantage and making women seem incompetent and unqualified (Goldenhar et al., 1998). As a result, women were frequently passed over for promotions or job assignments (Griffith et al., 2016; Hulett et al., 2008; Prokos & Padavic, 2002; Rabe-Hemp, 2008; Seklecki & Paynich, 2007) and forced to do "women's work" such as clerical duties, making men feel superior (Rabe-Hemp, 2008) and women the object of derision. Even when women initially reached positions of power, they were often not taken seriously and were subjected to gender harassment or unwanted sexual attention by coworkers and supervisors that was often brushed aside by organizations (Prokos & Padavic, 2002). However, female truck drivers reported that having a male co-driver protected against harassment and discrimination (Lembright & Riemer, 1982), and they

felt that occupation type affected judgment of harassment (e.g., women in male-dominated occupations were less likely to label harassment as such) (Lembright & Riemer, 1982; Maeder et al., 2007).

In addition to coworker relationships making a difference in the working environment, relationships with supervisors might have also had a positive or negative effect on sexual harassment in the workplace. Women in construction felt if a male supervisor was accepting of a woman working in the occupation, the environment was comfortable and safe, allowing her to obtain training, work without harassment, and perform to the best of her ability (Goldenhar et al., 2003). In contrast, male supervisors who were not supportive could make the working environment unpleasant and the workplace ripe for sexual harassment (Denissen, 2010). In law enforcement, individual traits such as personality, expertise, and access to critical information made co-worker harassment more likely than harassment by someone in management (quid pro quo) (Somvadee & Morash, 2008), and while coworker harassment was more common, women who were victims of quid pro quo experienced it more frequently and more severely before they recognized it as sexual harassment (Burgess & Borgida, 1997). However, women might not voice concern over harassment as supervisors and organizations failed to adequately address the complaints (Denissen, 2010; Hulett et al., 2008) and remedies to sexual harassment might or might not occur.

Six (24%) of the 25 studies on antecedents to sexual harassment addressed remedies in the form of policies and procedures and protections against sexual harassment. Increased incidents of sexual harassment were linked to organizational cultures which tolerated the behaviors associated with sexual harassment, and they might

lack policies to prevent the behavior (Hulin, Fitzgerald, & Drasgow, 1996; Khan et al., 2017). In contrast, organizations with sexual harassment policies in place helped deter workplace sexual harassment and had lower incidents of sexual harassment (Hulett et al., 2008; Rosell et al., 1995). However, many women in male-dominated occupations were unsure if their companies had reporting policies (Anderson et al., 2005), or they believed the policies might not adequately tackle the issue (Denissen, 2010; Hulett et al., 2008; Somvadee & Morash, 2008). In one study, 28% of female truck drivers reported having knowledge of their company's sexual harassment training; only 11% reported knowing that their companies had reporting policies (Anderson et al., 2005). In addition to policies and procedures, for female law enforcement officers, being married to someone in the same field and longer tenure and higher rank were protective against sexual harassment (Haarr & Morash, 2013; Texeira, 2002).

Gender Composition

Gender composition was another common antecedent to sexual harassment identified in eight (32%) of the 25 studies on antecedents (Hulett et al., 2008; Martin, 1978; Murphy et al., 1995; Pogrebin & Poole, 1997; Somvadee & Morash, 2008; Stohr et al., 1998; Texeira, 2002; Yoder & Aniakudo, 1996). Gender composition referred to the ratio of men to women within the work group. It also referred to the nature of the job duties and tasks assigned to each member of the work group, as well as the sex of the supervisor (Fitzgerald et al., 1997; Fitzgerald et al., 1994; Gutek et al., 1990). Women who had more contact with men (e.g., a female secretary who works in an environment dominated by males) were more likely to be sexually harassed than women who worked in gender neutral environments or those dominated by females (Hulett et al., 2008;

Murphy et al., 1995; Stohr et al., 1998) which was consistent with the social-contact hypothesis (Gutek et al., 1990). Females who worked in primarily female environments (e.g., female correction institutions) reported fewer experiences with sexual harassment (Stohr et al., 1998).

Because job descriptions were often based on gender roles (behaviors, attitudes or activities assigned to a person based on their biological sex), women in male-dominated occupations who performed the same work as men reported being treated differently (generally discriminated against) and reported experiences of being sexually harassed (Murphy et al., 1995; Pogrebin & Poole, 1997; Yoder & Aniakudo, 1996) as they were seen as women first rather than workers (Rosell et al., 1995). This was consistent with the Sex-Role Spillover theory (Gutek & Morach, 1982). However, female truck drivers reported that harassment and discrimination were societal/cultural issues based on gender issues as opposed to company issues (Bernard et al., 2000).

Responses to Sexual Harassment

Eighteen of the 32 articles (56%) summarized in **Tables 2.2 - 2.5** related to responses to sexual harassment. Of these 18 studies, 13 (72%) focused on protective services (e.g., law enforcement [**Table 2.2**] and firefighters [**Table 2.3**]); one related to truck driving (**Table 2.4**); and four (22%) addressed construction (**Table 2.5**). Of these 18 studies, eight (44%) were cross-sectional designs; five were qualitative designs; and five were mixed methods. Seven (39%) of the 18 studies of responses to sexual harassment used a theoretical framework, theory, or model or a combination of two or more to guide the research. Nine theories or models used include: a) the Transactional Theory of Stress and Coping; (Lazarus & Folkman, 1984); b) a model of Workplace

Injustice and Occupational Health Disparities (Okechukwu, Souza, Davis, & De Castro, 2014); c) Work-Related Stressors model (McGrath, 1970); d) Occupational Strain model (Karasek & Theorell, 1990); e) Job Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) f) the Partially Mediated Stressor-Injury/near miss model (Goldenhar et al., 2003); g) Job Stress model (Hurrell & Murphy, 1992); h) Cognitive-Behavioral Stress and Coping framework (Fitzgerald, Swan, & Fischer, 1995); and i) the Micro-Politics of Trouble framework (Emerson & Messinger, 1977). Only one of the seven studies was based on a combination of two or more of these nine theories or models. The theories and models on job stress and strain were used most frequently.

Of the 18 articles on responses to workplace sexual harassment, sample sizes ranged from 21 to 2,531. Eleven (61%) studies were comprised of only female participants. Eight (44%) used established, or tested, measures to collect data; seven employed researcher-developed measures; and two employed both established and researcher developed measures. Responses to sexual harassment identified in the 18 articles were categorized as physical, psychological, and work-related constructs.

In summary, findings from the 18 studies on responses to sexual harassment in selected male-dominated occupations in community settings revealed that physical, psychological, and direct and indirect work-related responses were ways women cope with sexual harassment. Work-related responses were most often reported in these studies while physical responses were reported in one-third of the studies. In addition, 78% of the studies described why women did not report harassment or reported mitigating circumstances that changed the reported level of sexual harassment or their responses to sexual harassment. Nearly three-fourths (72%) of the studies on responses to sexual

harassment focused on women in protective services while studies with women in truck driving and construction were less common.

The research on responses to sexual harassment included a variety of study methods, with most (72%) using qualitative and cross-sectional designs (72%). Studies on responses relied on self-report data and investigated convenience samples that were often small, resulting in potential selection bias and data that were not generalizable. Researchers did not consistently use established measures for data collection nor theories to guide their research. Nearly four in 10 studies used researcher developed measures that either did not have psychometric data or reported poor psychometrics. Seven (39%) of the studies on responses were guided by one or more of nine identified frameworks, theories, or models. The majority (89%) of the models related to job stress and strain (Demerouti et al., 2001; Goldenhar et al., 2003; Hurrell & Murphy, 1992; Karasek & Theorell, 1990; Lazarus & Folkman, 1984; McGrath, 1970; Okechukwu et al., 2014), revealing the importance of physical and psychological responses to sexual harassment.

Physical Responses

Physical outcomes of sexual harassment were reported in eight (44%) of the 18 studies of responses to sexual harassment (Bernard et al., 2000; Curtis et al., 2018; Goldenhar et al., 1998; Goldenhar et al., 2003; Hassell et al., 2011; Hollerbach et al., 2017; Jahnke et al., 2019; Rosell et al., 1995). The physical responses (e.g., poor health, insomnia, headaches, physical injuries) to harassment were similar across firefighting and construction. Consistent with models related to job stress and strain (Demerouti et al., 2001; Goldenhar et al., 2003; Hurrell & Murphy, 1992; Karasek & Theorell, 1990; Lazarus & Folkman, 1984; McGrath, 1970; Okechukwu et al., 2014), physical symptoms

were reported to be the result of increased stress; stress was reported to be higher in women who were sexually harassed (Bernard et al., 2000; Curtis et al., 2018; Goldenhar et al., 1998; Goldenhar et al., 2003; Jahnke et al., 2019; Rosell et al., 1995). As a result of increased stress from sexual harassment, women reported decreased job satisfaction (Hassell et al., 2011) and an increase in missed days of work (Jahnke et al., 2019; Rosell et al., 1995). Further, women felt they needed to try harder to prove themselves to fit in (overcompensation) to increase job satisfaction and decrease stress. Women in construction reported an increase in insomnia and headaches because of the increased stress from trying to overcompensate. In addition, women in firefighting and construction who tried harder to prove themselves, might not ask for help when needed and were more likely to be injured and those injuries were reported to be more severe (Curtis et al., 2018; Hollerbach et al., 2017; Jahnke et al., 2019), in turn causing psychological symptoms such as fear and anxiety as well.

Psychological Responses

Seven (39%) of the 18 studies identified psychological symptoms as responses to sexual harassment, (e.g., depression, anxiety, risk of suicide, fear) (Goldenhar et al., 1998; Goldenhar et al., 2003; Hassell et al., 2011; Hom et al., 2017; Jahnke et al., 2019; Murphy et al., 1995; Pogrebin & Poole, 1997; Rosell et al., 1995). Female police officers, firefighters, and construction workers who had been harassed or threatened might have reported an increase in psychological symptoms. In law enforcement, firefighting and construction, women often developed fear and anxiety from stress and worry about their jobs, and depression and/or anger as a direct result of the harassment; and they might have accepted and endured sexual harassment to ensure their job security (Goldenhar et

al., 1998; Goldenhar et al., 2003; Jahnke et al., 2019; Murphy et al., 1995; Pogrebin & Poole, 1997; Rosell et al., 1995). These observations were consistent with models related to job stress and strain (Demerouti et al., 2001; Goldenhar et al., 2003; Hurrell & Murphy, 1992; Karasek & Theorell, 1990; Lazarus & Folkman, 1984; McGrath, 1970; Okechukwu et al., 2014). In addition, female firefighters who reported being sexually harassed were more likely to report suicidal ideations and increased alcohol consumption than those who reported no harassment (Hom et al., 2017; Jahnke et al., 2019). However, there were some protections against developing psychological symptoms. In female construction workers, having supportive coworkers and supervisors was related to a decrease in psychological symptoms as sexual harassment was less tolerated (Goldenhar et al., 1998; Goldenhar et al., 2003).

Work-Related Responses

In addition to the physical and psychological responses to sexual harassment that women might have reported, they reacted by using various work-related responses as identified in the cognitive-behavioral stress and coping framework (Fitzgerald et al., 1995) and micro-politics of trouble framework (Emerson & Messinger, 1977). Nine (50%) of the 18 articles on responses to sexual harassment documented direct and/or indirect work-related responses.

Work-related responses were found to be either direct or indirect. Direct responses were those that were meant to bring about an immediate reaction from the harasser. They included verbal requests to immediately stop the behaviors, ignoring the behaviors thus causing the harasser to stop, using humor to deal with the situation to show it did not bother them, putting up with the harassment in hopes it would stop,

accepting harassment as part of the job, and withdrawing from the situation to get away from the harasser (Denissen, 2010; Haarr & Morash, 2013; Lonsway et al., 2013; Rabe-Hemp, 2008; Somvadee & Morash, 2008; Texeira, 2002). The most common direct response was to confront and directly respond to the harasser (Denissen, 2010; Haarr & Morash, 2013; Yoder & Aniakudo, 1995). Indirect responses were alternate ways of stopping the harassment. They included physical and psychological symptoms (Curtis et al., 2018; Goldenhar et al., 1998; Goldenhar et al., 2003) that could be attributed to job stressors such as discrimination and harassment, isolation, job uncertainty, skill underutilization, and overcompensation to prove themselves (Curtis et al., 2018; Goldenhar et al., 1998; Goldenhar et al., 2003). Indirect responses also included filing informal complaints with supervisors or formal complaints with human resources (Denissen, 2010; Haarr & Morash, 2013; Yoder & Aniakudo, 1995). However, not all sexual harassment was reported either informally or formally.

The reasons women gave for not reporting sexual harassment varied. They believed reporting was not productive, might lead to being considered a 'black sheep', and could put them in more danger (Denissen, 2010; Lonsway et al., 2013; Texeira, 2002). In addition, they worried that their future careers might have been endangered; that they would not be believed, or that nothing would be done (Denissen, 2010; Hulett et al., 2008; Khan et al., 2017; Lonsway et al., 2013). Due to the hypermasculine environment, women were hesitant to speak up about or report sexual harassment issues for fear of retaliation (Hulett et al., 2008). In addition, when sexual harassment did occur, women who had experienced it reported they were less likely to complain to supervisors as supervisors might have influenced the organizational subculture within the work

environment and might not have made an effort to resolve the problem (Hulett et al., 2008; Martin, 1978; Pogrebin & Poole, 1997). However, there were several mitigating circumstances that could change the level of harassment a woman might experience and could also change responses to sexual harassment. Mitigating circumstances have included good working relationships with coworkers and supervisors and working in a primarily female environment (Anderson, 2004; Bernard et al., 2000; Goldenhar et al., 1998; Goldenhar et al., 2003; Haarr & Morash, 2013; Lembright & Riemer, 1982; Morris, 1996; Rabe-Hemp, 2008; Stohr et al., 1998).

Discussion

Sexual harassment of females in male-dominated occupations has been a growing concern over the last few decades as more women enter male-dominated workplaces. This systematic review summarizes the state of the science related to antecedents and responses to sexual harassment in selected male-dominated occupations and identified gaps in the literature. Findings from these studies identified key constructs related to organizational culture (physicality, workplace relationships and harassment remedies) and gender composition (male to female ratio, contact, and gendered job roles) as primary antecedents to sexual harassment and identified physical, psychological, and work-related responses to harassment that were consistent across the selected male-dominated occupations of law enforcement, firefighting, truck driving, and construction. Some antecedents and responses have been studied in more detail than others as much of the research focused on coworker relationships and work-related responses to sexual harassment as opposed to physicality of the job, harassment remedies, gender composition, and physical and psychological responses. In addition, the majority of

researchers focused on women in law enforcement and firefighting with few studies concentrated on women in truck driving and construction.

Researchers indicated organizational culture, particularly workplace relationships, played a large part in determining whether sexual harassment was an issue within the workplace or not. Coworker relationships included peer-to-peer and worker to supervisor relationships. Fifteen studies on law enforcement, firefighting and construction indicated that poor workplace relationships were a precursor to sexual harassment. However, researchers in these occupations failed to address the lack of harassment in workplaces where there were good relationships between coworkers nor did the researchers exam the reasons for the poor relationships. Only one study on truck drivers addressed coworker relationships (Lembright & Riemer, 1982). Authors of that study discussed having a male co-driver was protective against sexual harassment but failed to address the possible negative relationships between coworkers.

Physicality of the job and the presence or absence of harassment remedies were mentioned in studies on law enforcement, firefighting and construction but were not as prominent as the discussions on coworker relationships, and while physicality was identified as an important trait in male-dominated occupations, it was not addressed in studies on truck drivers. Harassment remedies were mentioned in six studies on law enforcement, firefighting, and construction. It was also mentioned in one study on truck drivers as part of a larger study on workplace violence (Anderson et al., 2005), but did not delve into the relationship between harassment remedies and the presence or absence of sexual harassment as a result of the remedies.

Researchers briefly examined gender composition as part of larger studies on sexual harassment in seven of the studies on law enforcement, firefighting, and construction. In these studies, gender composition was discussed within the context of the ratio of men to women within a workplace and the discrimination women face in predominately male workplaces. Sexual harassment of women in predominately female workplaces was discussed in only one study (Stohr et al., 1998). In addition, one study on truck drivers (Bernard et al., 2000) discussed discrimination of women as a societal issue as opposed to an organizational issue but did not examine gender composition of the workplace as a risk for sexual harassment.

Responses to sexual harassment were examined less frequently than antecedents to harassment in the selected male-dominated occupations. The majority of studies focused on work-related responses of women in law enforcement, firefighting, and construction. The studies on truck driving did not include work-related responses, but rather discussed the reasons why women did not report incidences of harassment. Psychological and physical responses were addressed in law enforcement, firefighting, and construction. However, in truck driving, these specific responses were addressed as an increase in stress. Specific physical and psychological symptoms were not identified in this population.

In addition to the identified gaps, major limitations identified included 1) weak to moderate study designs, 2) non-standardized instrumentation, and 3) self-report or response bias. The majority of the literature reviewed was cross-sectional, qualitative, or mixed method studies with small sample sizes which limits the ability to generalize the

findings. Furthermore, the majority of studies utilized researcher developed instruments without tested psychometric properties which calls into question validity and reliability.

Another identified limitation is the potential for self-reporting or response bias. In many of the studies, respondents were asked perceptions of sexual harassment or perceptions of experiences in male-dominated occupations leaving the responses open to interpretation. In addition, physical and psychological responses may be exaggerated or minimized based on the respondent's current frame of mind or length of time since the incident occurred.

Implications for Research

While antecedents to, or risk factors of, sexual harassment have been studied in the protective services and construction occupations, investigation of antecedents to sexual harassment has been limited in these occupations. Most of the studies described prevalence, type, and responses to harassment. The studies on sexual harassment in female truck drivers are described as part of larger studies on workplace violence and the health of drivers (Anderson et al., 2005; Bernard et al., 2000; Lembright & Riemer, 1982; Reed & Cronin, 2003).

In evaluating the state of knowledge related to sexual harassment in male-dominated occupations, it is evident that future research is needed to more fully investigate what factors contribute to workplace sexual harassment especially among selected male-dominated occupations to reduce the risk for adverse responses. Understanding the extent characteristics of organizations (e.g., male to female ratio) play in frequency and type may help to determine how and why sexual harassment occurs. Also, determining how and why sexual harassment occurs is vital to understanding the

effects on women's physical and mental health in the workplace. Understanding perceptions of sexual harassment between harassers and complainants is critical in assessing risks and developing harassment remedies such as policies and procedures. In addition, understanding coworker and supervisor relationships can help to build interventions to change attitudes and behaviors on respectable workplaces and make training and education over new or revised policies effective.

Studies on female truck drivers are limited. Researchers who examined workplace violence and health issues incorporated sexual harassment as part of those larger studies. Studies are needed to specifically target sexual harassment of female truck drivers. Prevalence rates reported in the larger studies are more than a decade old and need to be updated to determine the extent of the problem within this population. Antecedents such as traits associated with the job (teamwork, acceptance, and physicality) and workplace relationships need to be better examined to help organizations in developing, refining, and implementing sexual harassment remedies such as policies and procedures for reporting incidences of sexual harassment, to encourage a positive working environment where women feel welcomed, safe, and appreciated. The limited knowledge regarding responses to sexual harassment in female truck drivers limits the ability to understand health and workplace issues females face and makes it difficult to address physical and psychological responses and improve work-related responses. Studies that include both antecedents and responses will help researchers and companies understand why women are reluctant to enter truck driving.

Conclusion

Workplace sexual harassment is a continuing problem as more women seek employment in male-dominated occupations in community settings. Despite growing concerns and recognition that organizational culture and gender composition of the workplace play a role in incidence of sexual harassment, the majority of researchers did not consistently measure antecedents to sexual harassment in protective service, truck driving and construction occupations. Further, researchers did not compare how men and women view the risk factors for sexual harassment in these selected male-dominated occupations. The scientific rigor of many of these studies was insufficient as the psychometric properties of many of the research-developed measures either were not reported, or studies included instruments with poor psychometric performance. Many of the studies rely on qualitative design and self-report data, creating the potential for response or social desirability bias. Frameworks, theories, and models are inconsistent and often lacking in both antecedent and response studies. Developing and testing a framework to guide the study of antecedents and responses to sexual harassment in male-dominated occupations is warranted. Employers' understanding of the organizational culture that contributes to sexual harassment in male-dominated occupations could inform policies and procedures that serve as deterrents to sexual harassment as well as a promote a more cohesive and accepting workplace.

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Table 2.1 Occupations with fewer than 25% of women in their workforce by occupational category

	Average percentage (range)
1. Arts, Design, Entertainment, Sports, and Media Occupations (e.g., Musicians, singers, and related workers	21.8%*
2. Personal Care and Service Occupations (e.g., morticians, undertakers, and funeral directors)	20.4% (14.4-24.9)
3. Food Preparation and Serving Related Occupations (e.g., chefs and head cooks)	18.7% (18.3-19.1)
4. Farming, Fishing, and Forestry Occupations (e.g., miscellaneous agricultural workers)	18.2%*
5. Computer and Mathematical Occupations (e.g., computer support specialist)	17.1% (7.5-23.9)
6. Community and Social Service Occupations (e.g., clergy)	16.4%*
7. Management Occupations (e.g., chief executives)	15.4% (7.9-24.3)
8. Business and Financial Operations Occupation (e.g., information security analyst)	15.1% (13.3-16.8)
9. Production Occupations (e.g., butchers and other meat, poultry, and fish processing workers and cutting workers)	14.9% (3.0-22.2)
10. Office and Administrative Support Occupations (e.g., couriers and messengers)	14.6%*
11. Architecture and Engineering Occupations (e.g., industrial engineer)	14.5% (8.6-21.2)
12. Protective Service Occupations (e.g., security guards, gaming surveillance officers, police officers, and firefighters)	13.9% (3.9-23.4)
13. Sales and Related Occupations (e.g., parts salespersons)	12.1%*
14. Transportation and Material Moving Occupations (e.g., laborers, freight, stock, and material movers, and truck drivers)	11.6% (5.3-17.9)
15. Installation, Maintenance, and Repair Occupations (e.g., computer, automated teller, and office machine repairers)	6.5% (2.0-11.0)
16. Construction and Extraction Occupations (e.g., construction and building inspectors, electricians, and plumbers)	5.6% (1.9-14.2)
17. Building and Grounds Cleaning and Maintenance Occupations (e.g., grounds maintenance workers)	4.7%*

Note: Based on the 2018 Standard Occupational Classification System
* indicates no range available

Table 2.2 Workplace Sexual Harassment in Male-dominated Occupations: Police (*n* = 13)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Haarr & Morash, 2013	Determine how rank and tenure affect responses to negative work environments Qualitative	Transactional theory of stress and coping	Female police officers *n* =21 United States (Metropolitan area in Southwest)	Independent: coping strategies Dependent: rank and tenure	Researcher developed	-those with longer tenure and higher rank had more coping strategies than those with lower rank and shorter tenure -common strategies by both: straight talk, hard work/good work to prove themselves, putting up with it, using mentors -low ranking women strategy: help/protection from male coworkers -high ranking women strategies: avoidance, self-define and self-assessment, formal action to address grievances	-small sample size -not generalizable -limited distinctions in rank -possibility policies and procedures have reduced harassment

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Hassell et al., 2011	Examine relationship between workplace problems and whether experiences differ between genders Cross-sectional	None Research based on workplace problems (need for mentoring programs, stress, job satisfaction and consideration of career changes)	Male (70) and female (17) police officers *n* = 87 United States (Midwest)	Independent: workplace problems; workplace stress; job satisfaction Dependent: gender	Survey from prior study (Morash and Harr, 1995)	-females felt ability due to physical stature called into question was statistically significant -positive correlation between officers who believe department needs mentoring program and increased levels of stress -workplace stress lowered job satisfaction causing officers to consider job change -gender did not influence job change consideration	-not generalizable -differences may not have been captured due to survey design -construct validity concerns -statistical power restricted -department had higher than national average of female officers

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Lonsway et al., 2013	Examine incidence, impact and perception of sexual harassment in law enforcement Mixed methods	None	Study 1-male and female officers from 1 agency *n* = 679 Study 2-female officers nationwide *n* = 2,531 United States	Independent: health and well-being; individual tolerance of sexual harassment Dependent: work attitudes and behaviors	Independent: Satisfaction with Life Scale; Brief Symptom Inventory; Sexual Experiences Questionnaire Dependent: Work Withdrawal and Job Withdrawal; Job Descriptive Index; Stress in General Scale	-82.6% of men and 92.5% of women (sample 1) experienced at least 1 behavior of sexual harassment; 5 respondents reported being sexually harassed -most experienced behaviors: gender harassment and unwanted sexual attention (jokes, teasing, pornography, gestures) -most frequent response to harassment: no complaint filed because reporting not productive, fear retaliation, and fear black sheep status; use of humor to cope - behavior stopped due to direct response (42.5%) and harasser reprimanded (12.7%); 12.9% reported retaliation	-self-report data -small sample of women in study 1 -ethnicity/ race not diverse in sample 1 -due to lack of males in study 2-no gender comparisons done -no outcome measures for study 2

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Martin, 1978	1. Examine dynamics of male-female interaction 2. Explore ways policewomen are pressured to "stay in their place." Mixed methods	None Research based on tokenism, male-female interactions, and sexualized work environment	Police officers and officials *n* = 120 United States (Washington DC)	Independent: workplace interactions Dependent: environmental cues; verbal cues; non-verbal messages	-Observation -Researcher developed	#1: women entering "male establishments" cause a scene, attract attention and are "out of place" #2: use of terms and language convey messages about status and what behavior people expect (girl, broad, lady, woman, bitch); joking and verbal putdowns are considered "permitted disrespect"; gossip controls behavior thereby reducing productivity and provides men with unfair advantage; non-verbal messages include unwanted touching and chivalrous rituals; women become victims to sexual harassment to "put them in their place"	-small sample size -not generalizable

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Morash & Haarr, 2012	Examine how female officers describe their identifies as women and officers Qualitative	None Research based on workplace and gender identities	Female officers *n* = 21 United States (Southwest)	Gender and workplace identity	Researcher developed	-fundamental gender differences noted by 76.2% of women -76.2% rejected traditional hierarchy of masculine/feminine -52.4% stated female-related characteristics made job performance better in some instances -overall resistance to negative stereotyping	-purposive sampling -small sample size -not generalizable

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Morris, 1996	Examine gender and ethnic differences in experience of social constraints Cross-sectional	Tokenism theory	Male and female officers *n* = 372 United States (New York)	Independent: social interactions and support Dependent: gender and ethnicity	Researcher developed-adapted from Army Work Environment Questionnaire, Supervisory and Peer Support Leadership Scale	-minority women reported more job-related guidance -minority and female officers reported more positive social interactions -female officers reported greater supervisor fairness -women more likely to be sexually harassed from supervisors and coworkers and perceived it as a greater problem -minority officers reported more bias and criticism on the job -men reported more socialization with other officers -white women received strong support from families	-reliability and validity concerns -not generalizable -self-report data

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Pogrebin & Poole, 1997	1. Explore sexualized jail setting faced by female officers 2. Understand significance of gender in their work Qualitative	None Research based on sexualized work environment and sex-roles	Female officers *n* = 119 United States (Denver)	Independent: work environment Dependent: harassment and effects of harassment	Researcher developed	#1: males believe: females not physically capable of doing job, females need protection from aggressive inmates; females perceived as less competent; females excluded from organizational socialization and forced to learn on their own; females identity demeaned by male coworkers; sexist remarks send message females are not equals; reports of sexual harassment numerous among interviewees #2: females accept and endure harassment to ensure job security; harassment has psychological effects: anger, irritability, fear, anxiety, depression; elimination of gender and sexual harassment falls back to	-not generalizable -small sample size

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
						administration enforcing policies	
Prokos & Padavic, 2002	Examine the creation of hegemonic masculinity in police training academy Ethnographic	None Research based on masculinity in the workplace	Students enrolled at academy (n = 30) Instructors (n = 40) over 5 months United States (Rural Southeast)	-hidden curriculum -gender	Observation by researcher	-hidden curriculum filled with gendered lessons -women treated as outsiders -gender differences exaggerated -women denigrated and objectified -women not taken seriously if in a position of power	-not generalizable -observations from 1 academy

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Rabe-Hemp, 2008	1. Explore experiences of female officers 2. Examine coping mechanisms 3. Establish themes in success stories of acceptance and integration Qualitative	None Research based on tokenism and masculinity	Female officers *n = 24* United States (Midwest)	Independent: coping mechanisms Dependent: acceptance and integration; workplace culture	Researcher developed	#1: -almost all females had achieved acceptance in their agencies; hegemonic masculinity found throughout training and department; experiences of sexual harassment started in training and continued through promotions and job assignments; obstacles included hostile work environments #2: coping included accepting segregation into feminine duties #3; 3 mechanisms to be accepted: through violent show of force, achieving rank that demanded respect and being unique or different from male counterparts	-small sample size -not generalizable -snowball sampling -interview questions may shape responses -lack of racial diversity

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Seklecki & Paynich, 2007	Examine employment motivations, experiences, and attitudes of female law enforcement officers Cross-sectional	Tokenism theory	Female officers *n* = 531 United States	Independent: motivation for pursuing, maintaining and leaving career Dependent: sexual harassment - work environment perceptions; stress	Researcher developed	-treated worse than men and were less welcomed into profession -every female officer encountered at least 1 situation of harassment, 72.8% stated they had not been sexually harassed	-selection bias -self-report data -validity and reliability concerns

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Somvadee & Morash, 2008	1. Examine sexual harassment experiences 2. Describe incidents of discomfort and patterns of responses Mixed methods	None	Female officers *n* = 117 United States (Midwest)	Sexual harassment experiences	-Sexual Experiences Questionnaire -Researcher developed	#1: 58.2% sexually harassed; 90.6% reported at least 1 behavior associated with sexual harassment: suggestive jokes or offensive stories (86.6%) most often reported; quid pro quo rarely reported; significant difference in gender harassment between majority and minority groups #2: double standard; women's ability to do the job questioned; competence disregarded; women joke back to be part of "in" group; women able to influence and stop some harassing behaviors; policies and training may not directly confront issue	-purposive sampling -small sample size -not generalizable

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Stohr et al., 1998	1. Determine if the extent of the problem will be tempered by the number of females at the jails 2. Determine if gender and victimization led to greater support for affirmative action Cross-sectional	Extant models (power, biological, organizational, sex-role spillover, and proportions)	Staff and correctional officers at women's correctional facilities *n* = 182 United States	Independent: actions taken and predicted by victims and nonvictims Dependent: event characteristics	Researcher developed	#1: sexual harassment low in primarily female-dominated environments #2; weak relationship between victimization and non-victimization and affirmative action; female victims more supportive of affirmative action than males; victims tend to be older, white females with longer employment history; similar education levels as nonvictims	-self-report data -not generalizable -facility selection bias

Table 2.2 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Texeira, 2002	Examine experiences and perceptions of sexual harassment Qualitative	Tokenism theory and sex-role spillover theory	African American female officers *n* = 65 United States	Experiences and perceptions of sexual harassment	Researcher developed	-sexual harassment acceptable to keep job -those who report considered troublemakers and put into more danger -actual or attempted rape least reported but most traumatic -most experienced behaviors: pressured for dates (24%), unwanted/ inappropriate touching (18%), quid pro quo and unwanted letters, phone call or materials of sexual nature (15%) -females married to officers less likely to be sexually harassed	-snowball sampling -not generalizable -small sample size

Table 2.3 Workplace Sexual Harassment in Male-dominated Occupations: Firefighters (n = 10)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Griffith et al., 2016	1. Examine firefighter perceptions of bullying including gender, race and sexual orientation 2. Compare and contrast results with 2008 study Cross-sectional	None Research based on organizational culture and bullying	Firefighters in US (56 females, 57 males) n = 113 United States	Perceptions of harassment based on gender, race and sexual orientation	Survey used from Hulett et al., study in 2008	#1: workplace bullying not perceived as discrimination or deferential treatment; more women reported issues with treatment based on gender, race and sexual orientation; females reported promotion decisions not fair; females experienced ill-fitting uniforms and equipment #2: findings similar to 2008 study	-self-report data

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Hollerbach et al., 2017	Explore perceptions, beliefs, and attitudes regarding injury Qualitative	Person-Environment Fit (PEFit) model	Female firefighters *n* = 73 United States	Perceptions, beliefs, and attitudes	Researcher developed	themes identified: -impact of working in male environment -harassment and discrimination -similar rates/types of injuries -inadequate training -gear that does not fit -functional techniques and endurance	-questions may have influenced answers -not generalizable

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Hom et al., 2017	Explore association between harassment, career suicidality, and psychiatric symptoms Cross-sectional	None	Women firefighters *n* = 290 United States	Independent: career suicidality; psychiatric symptoms Dependent: experiences with sexual harassment and other threats/ harassment on the job	Independent: ACSS-FAD; Anxiety Sensitivity Index-3; AUDIT-C; CESD-R; Interpersonal Needs Questionnaire; Insomnia Severity Index; PTSD Checklist for DSM-5; SITBI-SF; SBC-R Dependent: QWM	-21.7% experienced sexual harassment -20.3% reported threats or other harassment -threats and harassment (including sexual harassment) associated with higher risk of suicide and severe psychiatric symptoms	-self-report data -unable to determine if suicide thoughts occurred before or after threats or harassment -not generalizable -limited information on harassment and threat experiences -sample underpowered

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Hulett et al., 2008	Examine hiring and promotion and harassment in fire service Mixed methods	None	Male and female firefighters *n* = 675 Fire departments *n* = 114 Female firefighters *n* = 175 United States	Independent: circumstances which most reduce women firefighters' rating of their careers Dependent: discrimination or harassment experienced by firefighters; recruitment and hiring	Researcher developed	-less recruitment of women than men -women have ½ the pass rate on physical agility test -differences in promotion, roles and assignments at same rank -women experienced more discrimination/ harassment than men -women faced with ill-fitting uniforms/ equipment -women report greater harassment and pranks -procedures for addressing complaints weak and women face retaliation for reporting	-self-report data

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Jahnke et al., 2019	Evaluate relationship between discrimination/ harassment and physical/mental health, substance use and job efficacy, stress and satisfaction Cross-sectional	A model for understanding the contribution of workplace injustice to occupational health disparities	Career women firefighters *n* = 1773 United States	Independent: physical health; mental health; health behaviors; family well-being Dependent: job related factors	Independent: self-report height and weight; BRFSS; self-reported occupational injury; CES-D10 -MHI-A; TSQ; CAGE SRPA questionnaire; FFCSE; family stress evaluated on 5-point Likert-type scale (strongly disagree-strongly agree) Dependent: CWDH-A Scale	-verbal harassment and sexual advances experienced most -the higher the discrimination severity the more lost workdays reported -negative mental health outcomes, increased alcohol consumption and high work-related stress experienced by those with moderate to severe discrimination/ harassment	-snowball sampling -potential for response bias -not possible to determine direction of relationships -did not ask about personal experiences with harassment -self-report data

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Khan et al., 2017	Explore degree to which gender affects safety behaviors and outcomes Qualitative	None Research based on gender roles and organizational safety climate	Career female firefighters from 5 departments *n* = 30 [(*n* = 8 interviews, *n* = 22 (4 focus groups)] United States (Eastern, Central, Western Regions)	Independent: safety outcomes (e.g., injuries, less safe environments) Dependent: safety climate	Researcher developed	-experiences variable (dependent on leadership, crewmates and years of service) -hypermasculine environment; all firefighters afraid to speak up about harassment and safety concerns which increase injuries and decrease safety precautions taken -some women making changes in departments in regard to trainings, job tasks, policies on reporting harassment -workplace harassment creates unsafe environment and detracts from safety being priority	-weak methodology -mostly white participants -did not seek data saturation -potential for investigator bias

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Murphy et al., 1995	Evaluate gender differences in appraisal of job stressors and symptoms of stress Cross-sectional	Work-related stressors model	Firefighters with less than 10 years' service (670 men, 41 women) *n* = 711 United States (Pacific Northwest state)	Independent: symptoms of stress Dependent: job stressors	Independent: Symptoms of Stress Inventory Dependent: Sources of Occupational Stress The Edwards Social Desirability Scale	-females reported more job discrimination -females had higher levels of depression -females had more job skills concerns -financial strain higher for men -5 highest job stressors for both: sleep disturbance, wage/benefit concerns, job skill concerns, substandard equipment, safety	-self-report data -not generalizable

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Rosell et al., 1995	Compare women who experienced sexual harassment to those who did not Cross-sectional	None Research based on power and control issues, gender ratios, and tokenism	Female firefighters and department chiefs from 103 fire departments (Department chiefs *n* = 37, Female firefighters *n* = 206) United States	Independent: department characteristics; occupational hazards; organizational resources Dependent: sexually harassed and non-harassed female coworkers	Data extracted from 1990 survey	-sexually harassed women reported more job stress, sexual stereotyping and acts of violence, used more sick leave and feared coming to work	-self-report data

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Yoder & Aniakudo, 1995	Describe response strategies to sexual and gender harassment Mixed Methods	None	African American Female firefighters *n* = 22 United States	Independent: response strategies Dependent: personality and situational factors	Independent: 3 researcher developed questions Dependent: Job Descriptive Index; Organization Based Self-Esteem Scale; Personal Attributes Questionnaire; Attitudes Toward Women Scale; Indicators of harassment (as outlined by US Merit Systems Protection Board)	-unwanted behaviors experienced: sexual teasing (91%), pressure for dates (46%), letters, sexual material (56%), looks or gestures (68%), deliberate touching (64%), asked for sexual favors (23%), rape (0%) -100% had externally focused responses (direct confrontation, filed external complaints or transferred or avoidance)	-not generalizable -unable to compare internal and external responses -small sample size -findings limited to survivors of harassment

Table 2.3 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Yoder & Aniakudo, 1996	1. Describe incidence and nature of gender harassment 2. Identify conceptual indicators of harassment 3. Understand conceptual underpinnings of indicators Mixed Methods	Sex-role spillover theory	African American Female firefighters *n* = 22 United States	Independent: harassing behaviors Dependent: organizational culture	Independent: Indicators of harassment (as outlined by US Merit Systems Protection Board) Dependent: Job Descriptive Index; Organization Based Self-Esteem Scale; Personal Attributes Questionnaire; Attitudes Toward Women Scale	#1: most behaviors focused on teasing, jokes, remarks; general indicators of harassment are subtle #2: gender climate, ignoring, disregard of competence, magnifying mistakes, double standards, double edge of affirmative action, physical environment, ambiguous occurrences; direct indicators (comments and actions conveying exclusion) #3: cultural underpinnings: exclusion, excluded but committed, intertwining of race and gender	-small sample size -not generalizable -need better understanding of contextual indicators (other than behavior and perception of person involved)

Table 2.4 Workplace Sexual Harassment in Male-dominated Occupations: Truck Drivers (n = 5)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Anderson et al., 2005	Describe workplace violence in long-haul female truck drivers Cross-sectional	None Research based on workplace violence, personal safety, and risk factors related to violence	Female long-haul truck drivers n = 51 United States (Truck show in Boston, MA)	Independent: health status; health behaviors Dependent: workplace violence; relationship violence	Independent: Perceived Stress Scale; Perception of Job Safety Questionnaire Dependent: Conflict Tactics Scale	-42% women reported at least 1 type of violence while working -67% feared for their safety -28% of companies provide sexual harassment training-11% had reporting policy	-self-report data -not generalizable -CTS not useful in this population -partner close by (potential answering bias)

Table 2.4 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Bernard et al., 2000	Examine stress factors experienced by female truck drivers Cross-sectional	None Research based on workplace stressors	Female truck drivers from Western Kentucky *n* = 77 United States (Kentucky)	Independent: physical health problems and stress symptoms; job satisfaction Dependent: safety climate; job control and demands; social support and discrimination; training issues	Independent: stress factors (physical and psychological) measured on Likert-type scale; researcher developed Dependent: researcher developed	-high-priority training topics: stress reduction, physical exercise, self-defense, preventing driver fatigue -management ensures safe working conditions, however external factors were stressful	-not generalizable -only 1 mailing opportunity -self-report data

Table 2.4 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Lembright & Riemer, 1982	Determine if sponsorship decreases problems encountered by women truck drivers Mixed Methods	None Research based on male sponsorship, support and protection	Women truck drivers *n* = 90 Male (100) and female (10) truck drivers *n* = 110 United States (all geographic regions)	Independent: physical health problems Dependent: socially based tensions and troubles	Researcher developed	-heavy physical work reduced for women who have male codriver -women experience less harassment and discrimination when they have a male codriver -most harassment comes from dock hands, employers and truck stop personnel	-small sample size

Table 2.4 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Maeder et al., 2007	Examine how prevalence of harassment in different occupations influence workers' perceptions Cross-sectional	Social-contact hypothesis and sex-roll spillover theories	Male (242) and female (261) workers n = 503 United States (Nebraska)	Independent: occupation Dependent: measures of harassment; gender	Researcher developed	-link between occupation type of perceiver and perception of harassment occupation type can affect judgement of harassment due to different levels of comfort in workplace and familiarity with social sexual misconduct	-irregularities in coding -limitation in external validity -did not include gender and occupation of complainant

Table 2.4 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Reed & Cronin, 2003	Identify health conditions, health care access, and driving environments of female drivers Descriptive, cross-sectional	Behavioral model of health services use	Long-haul female truck drivers *n* = 284 United States (Truck show in Louisville, KY)	Independent: health conditions; health risk behaviors; access to health care Dependent: workplace factors	Researcher developed-adopted from National Health Interview Survey, Vital and Health Statistics: Access to Health Care, Chronic Everyday Stressor Index and Kentucky Farm Family Health and Hazard Surveillance Project	-60.3% experienced gender bias	-self-selected sample -strong healthy worker effect -self-report data -instrument not valid and reliable

Table 2.5 Workplace Sexual Harassment in Male-dominated Occupations: Construction (n = 4)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Curtis et al., 2018	1. Examine differences in men and women to determine how gender affects women's health 2. Determine if there is association between psychosocial exposure and injury and stress in men and women Cross-sectional	Occupational strain model and job-demands resource model	Construction trade workers (198 women, 93 men) n = 291 United States (Washington)	Independent: -Stress and injury Dependent: -Physical and psychosocial exposures	Independent: -Perceived Stress Scale -NIOSH GJSQ Dependent: -SEQ-W -Loneliness at Work Scale -Subjective Experiences of Tokenism (2 items) -Nordic Occupational Safety Climate Questionnaire	#1: higher perceived stress in women experiencing gender and age discrimination, bullying, sexual harassment (high levels) and isolation, and poor work/life balance; women reported more bullying and discrimination than men #2: women had >2 times odds of being injured if they reported gender discrimination	- not generalizable -non-random sampling method -possible survivor bias -possible positive information bias -self-report data -small sample of men -under-representation of non-white and non-union subjects

Table 2.5 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Denissen, 2010	Examine how women interpret and respond to sexual conduct of coworkers Qualitative	Cognitive-behavioral stress and coping framework and micro-politics of trouble framework	Tradeswomen *n* = 14 United States (Southern California)	Interpretation and response to sexual harassment (passive vs. assertive)	Researcher developed	3 themes identified: "doesn't cross the line"- foul language, porn, sex talk about other women, sex jokes, teasing, nicknames "I don't know where the line is" - relief measures (ignore it or get used to it, modifying how they dress and act, withdrawal from situation, quitting) "cross the line" -men are persistent, and situations escalate; remedies and sanctions of harassment: direct responses, complaints to foreman's, formal complaints; not all sexual harassment is harmful; not reported for fear of retaliation, not being believed, being shamed, and endangering future career	-purposive and snowball sample -not generalizable

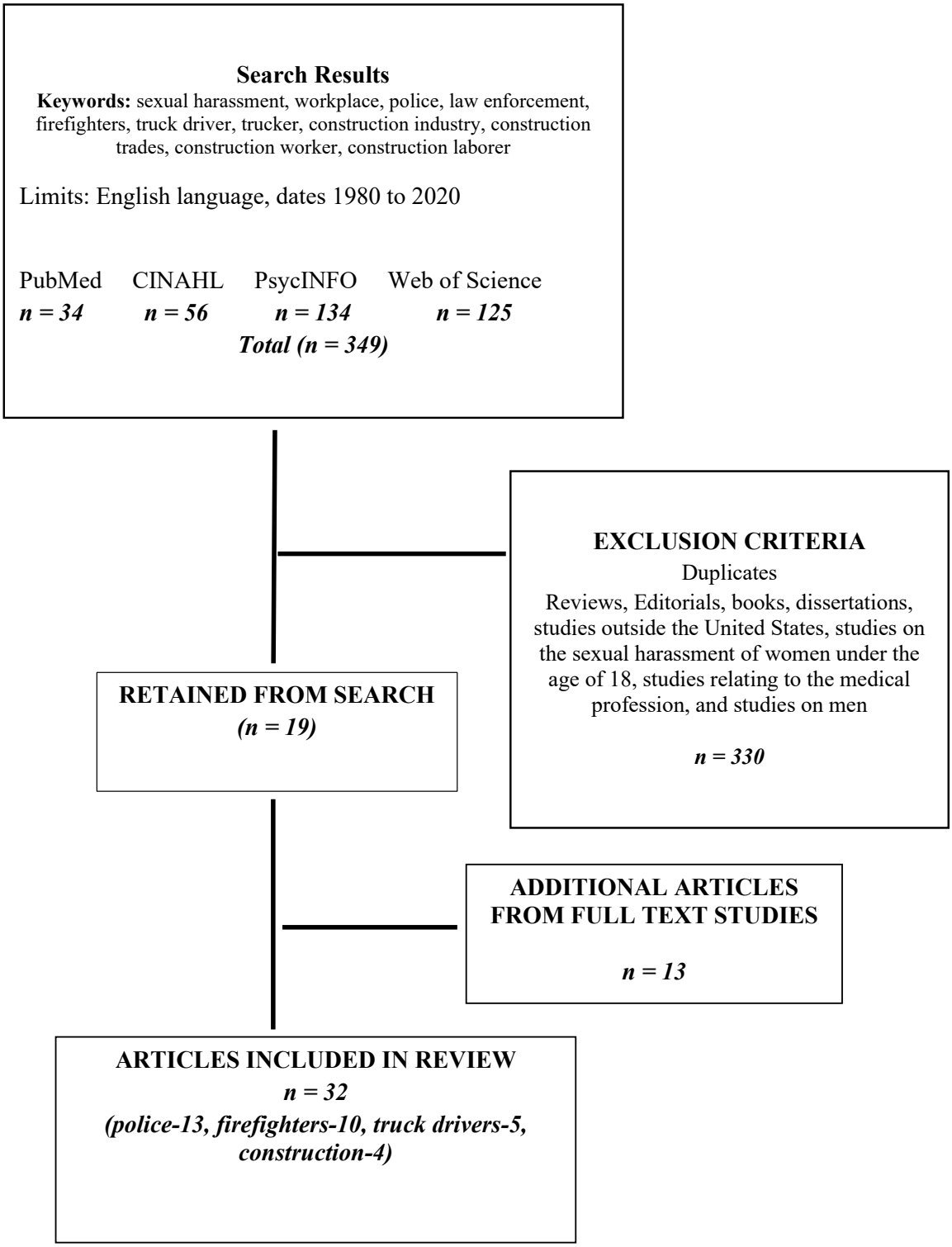
Table 2.5 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Goldenhar et al., 2003	Examine relationships between job stressors and injury or near-miss outcomes Cross-sectional	Partially mediated Stressor-Injury/Near miss theoretical model	Construction laborers (195 men, 213 women) *n* = 408 United States (Pacific Northwest)	Independent: near misses and injuries Dependent: job-task demands; organizational stressors Mediating: physical and psychological symptoms	Independent: -NNLIC; self-reported data on major body part injured and # of near misses in prior year Dependent: -NIOSH Job Stress Questionnaire; NIOSH Management Commitment to Safety Scale Mediating: -POMS, Tension-Anxiety, Depression-Dejection and Anger-Hostility Scale; NNLIC	-job insecurity, harassment and discrimination directly related to increase in physical and psychological symptoms -relationship between skill under-utilization and increased psychological symptoms -coworker and supervisor support related to decrease in psychological symptoms -the greater the level of safety, the less likely for near misses	-self-report data -not generalizable -potential recall bias of injury reporting -single-item measures problematic

Table 2.5 (Continued)

Citation	Purpose/ Design	Theory, Model, or Framework	Sample/ Setting	Variables	Measures	Findings	Limitations
Goldenhar et al., 1998	Examine job stressors on level of job satisfaction and physical and psychological health Cross-sectional	Job stress model	Female laborers *n* = 211 United States (Seattle, WA and Portland, OR)	Independent: job satisfaction; physical and psychological health Dependent: job stressors	Independent: NIOSH Job Stress Questionnaire; NIOSH Management Commitment Scale; Profile of Mood States Dependent: NIOSH Job Stress Questionnaire; NIOSH Management Commitment Scale; NNLIC Survey on Workplace Violence	-sexual harassment and discrimination associated with physical and psychological symptoms -sexual harassment not significant stressor for job satisfaction (job itself) -having social support from supervisors and male coworkers minimized negative outcomes of job stressors overall and had direct effect on job satisfaction -skill underutilization associated with increased psychological symptoms -high levels of job certainty (job insecurity) protected against insomnia	-self-report data -not generalizable -cause/effect relationships cannot be implied -not all potential stressors measured

Figure 2.1 Literature Search Methodology and Outcomes



CHAPTER 3: Psychometric Properties of a Measure of Organizational Antecedents to Sexual Harassment in Female Truck Drivers

Abstract

Background: Overall, 50% of women in the workplace report experiences with sexual harassment, defined as unwanted verbal statements or physical gestures of a discriminatory or sexual nature. On average, 60% of females working in male-dominated occupations (those with less than 25% of women in the workforce) report experiences with sexual harassment. In recent years, researchers have studied organizational antecedents as contributing to sexual harassment in the workplace. However, there are few studies of organizational antecedents to sexual harassment in male-dominated workplaces such as law enforcement, firefighting, truck driving, and construction.

Objective: The purposes of the study was to design an instrument to measure organizational antecedents of sexual harassment in male-dominated workplaces and to evaluate its psychometric properties in a sample of female truck drivers.

Methods: A 15-item measure of organizational antecedents was developed based on the Sexual Harassment in Organizational Context Model. The survey items, with response choices on a 5-point Likert-type scale, were designed to measure constructs of worker power, workplace culture, and gender context of the workplace. Three reviewers with expertise in occupational and public health evaluated the initial 15 items for relevance, objectivity, clarity, simplicity, practicality, and vocabulary, as dimensions of content validity. Scoring of the item characteristics was based on a scale from 1 (adequate) to 3 (not adequate). There was low-moderate agreement ($\kappa = .42$, $p < .0001$) among the three expert panel reviewers for the original 15-item scale. Based on reviewer

scores of the item characteristics and suggested changes to ensure items measured what they were intended to measure, three items were added to capture the aspects of the constructs related to the truck driving population. The 18-item scale was tested in a sample of female truck drivers ($N = 236$) who were over the age of 21, had a class A Commercial Driver's License (CDL-A), and a minimum of 3 months truck driving experience. Prior to testing reliability and validity, one item from workplace culture and item from gender context were omitted as they were more demographic in nature (e.g., overall number employed by the company and number of women employed by the company). A second item (male to female ratio in the workplace) was removed from gender context as truck driving is a male-dominated occupation. The removal of these items resulted in a final 15-item scale. Worker power (8 items) scores ranged from 8 – 40; workplace culture (3 items) scores ranged from 3 – 15, and gender context (4 items) scores ranged from 4 – 20. The higher the worker power scores, the more control female workers perceived they had over their work environments. The higher the workplace culture scores, the more supportive the culture. The higher the gender context scores; the more women were spoken to and treated as equals. Internal consistency reliability was evaluated using Cronbach's alpha and inter-item correlation. Construct validity was tested using Principal Component Analysis (PCA) with varimax rotation. Correlations between components were analyzed for strength of the relationship utilizing Pearson's correlation coefficient.

Results: Internal consistency reliability of the 15-item scale was .83 showing strong reliability. Inter-item correlations of the 15-items showed a lack of multicollinearity among items. Worker power (8 items) had acceptable internal

consistency (α = .78). Workplace culture (3 items) and gender context (4 items) showed poor-moderate internal consistency (α = .31 and .58, respectively). The PCA revealed that sampling adequacy was supported by Kaiser-Meyer-Olkin (.81), and Bartlett's test of Sphericity ($p < .001$) indicated the correlation matrix was not an identity matrix. However, four components (constructs) instead of three were identified by the PCA that explained 61% of the total cumulative variance. Post hoc analysis revealed construct one (job control; 5 items) and construct two (workplace culture; 6 items) each had acceptable internal consistency (α = .80 and .76, respectively). Construct three (formal grievance procedures; 2 items) had factor loadings of .88 (knowledge of grievance procedures) and .80 (knowledge of who can file a grievance). Construct four (peer relationships; 2 items) had factor loadings of .67 (strength of peer relationships) and .87 (peer contact). As constructs three and four each contained two items, they were not subjected to further analysis.

Conclusion: We provided evidence of reliability and validity of the 15-item Sexual Harassment Organizational Antecedent (SHOA) scale. However, when constructs were tested independently, only the 8-item worker power construct had adequate reliability. Construct validity, factor analysis revealed four constructs in which one item loaded on more than one factor. Of the 15-item scale, there were two valid and reliable constructs: job control (5 items) and workplace culture (6 items). Two additional constructs, grievance policies and peer relationships, were identified based on 4 items of which two loaded on each construct. Research is needed to develop and test additional items to measure formal grievance policies (e.g., training on sexual harassment, company action on reports of sexual harassment) and peer relationships (e.g., daily contacts with

peers, support systems, comfort in discussing incidents of sexual harassment with friends or coworkers) to better understand the organizational antecedents of sexual harassment among females working in male-dominated occupations such as truck driving.

Introduction

Sexual harassment of women in the workplace has been a common problem since women first entered the workforce (Carothers & Crull, 1984; Fitzgerald, 1993; Gruber & Bjorn, 1982; Hemming, 1985; Kissman, 1990; Lillydahl, 1986; MacKinnon, 1979). Overall, approximately 1 in 2 women report sexual harassment while on the job (Das, 2009; Libarkin, 2019; Schat, Frone, & Kelloway, 2006). In male-dominated occupations, defined as those in which females comprise less than 25% of the workforce, sexual harassment at work is reported by 60% of the female workers (Hom, Stanley, Spencer-Thomas, & Joiner, 2017; Lonsway, Paynich, & Hall, 2013; Morash & Haarr, 2012; Seklecki & Paynich, 2007; Somvadee & Morash, 2008; Yoder & Aniakudo, 1995).

During the 1980s and 1990s, as more women entered male-dominated occupations, researchers began to examine organizational antecedents, or risk factors, that contributed to sexual harassment, particularly in male-dominated occupations such as law enforcement, firefighting, truck driving, and construction (Goldenhar, Swanson, Hurrell Jr, Ruder, & Deddens, 1998; Griffith, Roberts, & Wakeham, 2016; Haarr & Morash, 2013; Lembright & Riemer, 1982). Sociocultural expectations related to the appropriate roles for women (Cleveland & Kerst, 1993) and cultural foundations related to patriarchy and gender socialization (DiTomaso, 1989; Gruber, 1998) were considered as antecedents for sexual harassment of women by men in the workplace. These antecedents were grouped into two categories: organizational context and gender context, or roles. Organizational models were developed based on these two categories of antecedents associated with sexual harassment of women in the workplace. However, a standard instrument that is both valid and reliable is not available for measuring organizational antecedents contributing to sexual harassment of women in the workplace.

Understanding Organizational Antecedents to Sexual Harassment

Research on the organizational antecedents, or the risk factors, that contribute to sexual harassment began in the 1980's. Since that time many theories and models of organizational antecedents have contributed to understanding sexual harassment of women in the workplace (Cleveland & Kerst, 1993; Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997; Fitzgerald, Gelfand, & Drasgow, 1995; Fitzgerald, Hulin, & Drasgow, 1994; Fitzgerald, Magley, Drasgow, & Waldo, 1999; Gutek, Cohen, & Konrad, 1990; Gutek & Morach, 1982; MacKinnon, 1979; Pryor, LaVite, & Stoller, 1993). Among the theories and models studied were the: 1) power model (Remick, Salisbury, Ginorio, & Stringer, 1990); 2) sex-role spillover theory (Gutek & Morach, 1982); 3) social-contact hypothesis theory (Gutek et al., 1990); and 4) integrated process model of antecedents (Fitzgerald et al., 1994). These four models or theories provided the foundation for the model that guided the instrument developed and tested in this paper.

First, the power model suggests there is an asymmetrical power dynamic between men and women in the workplace that results in sexual harassment (Cleveland & Kerst, 1993; Farley, 1978; MacKinnon, 1979). This inappropriate use of power is meant to degrade women and make them feel powerless. Second, the sex role spillover theory (Gutek & Morach, 1982), the most often cited model, posits that sexual harassment is higher in male-dominated organizations where work tasks may be determined based on gender (i.e., men perform the more physical jobs while women do the lighter, office work) (Gutek & Morach, 1982). Also, according to this theory, women who work in male-dominated organizations are often prevented from or resented for performing jobs typically assigned to men (Tangri & Hayes, 1997) as they are seen as women first rather than as contributing members of the workplace team (Burgess & Borgida, 1997). Third,

the social-contact hypothesis theory (Gutek et al., 1990), by contrast, posits that sexual harassment is a result of direct contact between men and women as opposed to gender role expectations.

Fourth, the integrated process model of antecedents combines theories and ideas from the prior three models and identifies organizational context and job context as antecedents to sexual harassment in the workplace (Fitzgerald, Gelfand, et al., 1995; Fitzgerald et al., 1994; Gutek & Morach, 1982). Organizational context pertains to the attitudes workers and workplaces have about sexual harassment, including the presence and enforcement of sexual harassment practices and policies (Fitzgerald et al., 1997; Fitzgerald et al., 1994; Fitzgerald, Swan, & Fischer, 1995) and the tolerance for harassment by management (Pryor et al., 1993). Job context pertains to the gendered nature of the workgroup and includes male to female ratios (Gutek et al., 1990) and traditional versus non-traditional job duties and tasks (Fitzgerald et al., 1997; Fitzgerald et al., 1994; Fitzgerald, Swan, et al., 1995; Gruber & Bjorn, 1982).

These four theories or models are limited to certain antecedents of workplace sexual harassment. While the integrated process model of antecedents (Fitzgerald et al. 1994) is more comprehensive than the other three, the model lacks constructs of power and social contact that are considered in the other three frameworks described here. Fourteen years after Fitzgerald et al. (1994) introduced the integrated process model of antecedents, the Sexual Harassment in Organizational Context Model (Chamberlain, Crowley, Tope, & Hodson, 2008) was developed. Based on the existing sociological theories discussed above, the researchers evaluated three constructs of organizational context and job context related to sexual harassment of women in the workplace: worker

power, workplace culture, and gender composition of the workplace. The Sexual Harassment in Organizational Context Model guided development of the instrument described and tested in this paper.

As described by Chamberlain et. al (2008), worker power, the amount of control or power someone has over their work environment or workplace, included the dimensions of self-direction, formal grievance procedures, and job insecurity. Workplace culture, the interpersonal dynamics within a workplace and the behavioral expectations related to job tasks included the dimensions of coworker solidarity (peer relationships), supervisor harmony (relationships between supervisors and workers), workplace anonymity, and physicality of the job. Gender composition of the workplace, the third construct, referred to the gender make-up of the work group and included the dimensions of contact hypothesis (daily contact between coworkers), power-threat (equality of pay and job opportunities), gender salience (male to female make-up within the workplace) and gender dominance (number of women in a specific work group).

The instrument developed and tested in this study was adapted from the Sexual Harassment in Organizational Context Model and the constructs/dimensions described by Chamberlain et al. (2008) to explain workplace antecedents to sexual harassment of women in male-dominated occupations formed the basis for the survey items (**Table 3.1**). Worker power, the first construct, was conceptualized to have three dimensions: self-direction (e.g., autonomy, creativity, and freedom of movement), formal grievance procedures, and job security. Workplace culture, the second construct, was conceptualized to have four dimensions: coworker solidarity, supervisor harmony, anonymity, and physicality of work. Gender composition, the third construct, was

renamed gender context and redefined as the gender dynamics and coworker interactions within the workplace to better capture the construct. It was conceptualized to have four dimensions: contact hypothesis (renamed coworker contact to clarify what the dimension measured), power-threat, gender salience, and gender dominance.

Purpose and Aims

The purpose of this paper was to describe the design of an instrument to measure organizational antecedents of sexual harassment of women in male-dominated occupations and the evaluation of its psychometric properties in a sample of female truck drivers. The specific aims were to: 1) develop items based on the Sexual Harassment in Organizational Context Model and determine content validity of the item characteristics (e.g., relevance, objectivity, clarity, simplicity, practicality, and vocabulary) using an expert panel of reviewers; 2) provide evidence of internal consistency reliability of the instrument and its subscales in a sample of female truck drivers; and 3) examine the construct validity of the items to verify they are measuring each construct.

Methods

Procedure

The initial 15-item instrument was developed, reviewed by a panel of experts, evaluated for content validity, and revised (Aim 1). This final instrument, which included 15 of the original 18 times, was tested for reliability and validity. One item from the original workplace culture construct and one item from the gender context construct were omitted because they were more demographic in nature (e.g., overall number employed by the company and number of women employed by the company) and were deemed difficult to interpret based on the size differences in trucking companies across the US

and the high turnover rate among companies. On additional item (male to female ratio) was removed from gender context as truck driving is a male-dominated occupation where, in the majority of trucking companies, there are more males than females in the workplace. The psychometric evaluation (Aims 2 & 3) of the 15-item revised instrument was conducted in a sample of female truck drivers ($N = 236$) enrolled in a cross-sectional study exploring the organizational antecedents to sexual harassment.

Aim 1: Instrument Development

Initial item generation

Item development began with a systematic review of the conceptual definitions of constructs, dimensions, and descriptions of variables provided by Chamberlain et al. (2008). Items were developed based on the author's interpretations of the conceptual definitions of the variables described by Chamberlain (2008) and the literature on male-dominated occupations and truck driving in particular. In line with Chamberlain et al.'s model (2008), six items were developed to measure worker power; three items to measure the dimension of self-direction (autonomy, creativity, and freedom of movement), two to measure the dimension of knowledge of formal grievance policies, and one to measure job security. Four items were developed to measure the construct of workplace culture; one item each to measure the dimensions of coworker solidarity, supervisor harmony, anonymity, and physicality of the job. Five items were developed to measure the construct of gender context. One to measure the dimension of coworker contact, two to measure the dimension of power threat, one to measure the dimension of gender salience, and one to measure the dimension of gender dominance. The resulting item pool contained 15 organizational antecedent items (**Table 3.2**).

Description of constructs, subconstructs, and items of the initial 15-item instrument. Worker power, defined as the amount of control or power workers have over their work environments or workplaces, included three dimensions: self-direction, formal grievance procedures, and job security, consistent with Chamberlain et al.'s model (2008). *Self-direction* included measures of autonomy (control over the pace and timeframe in which a job is to be completed; item 1), creativity (control over how a task would be completed; item 2), and freedom of movement (control over acceptance of a task; item 3). The items contained in self-direction were developed based on the job tasks that truck drivers perform to successfully pick-up and deliver loads of goods, and truck drivers' hours of service that are regulated by the Federal Motor Carrier Safety Administration (FMCSA) (United States Department of Transportation, 2015). The response options for the self-direction items ranged from 1 (no control at all) to 5 (complete control). The *formal grievance policies* dimension included items measuring knowledge of formal company policies and procedures (item 4) that addressed workplace sexual harassment and the knowledge about who can file formal grievance procedures (item 5). These two items were developed based on prior research with truck drivers that indicated less than 15% of drivers knew their companies had policies and procedures in place for reporting harassment (Anderson, Westneat, & Reed, 2005). The response options for the formal grievance policies items ranged from 1 (definitely not) to 5 (definitely yes). The *job security* dimension was measured by one item (item 6). For truck drivers, job security is more about availability of jobs within the industry as a whole as opposed to working for a specific company; prior research has indicated 60% of truck drivers are not satisfied with their job and the turnover rate is as high as 127% (Johnson,

Bristow, McClure, & Schneider, 2010; Johnson, Bristow, McClure, & Schneider, 2011). The response options for job security ranged from 1 (not confident at all) to 5 (very confident). Total worker power scores ranged from 6 to 30. Higher scores indicated women had more control over their work environment.

Workplace culture was defined as the interpersonal dynamics within a workplace and the behavior expectations related to job tasks. It included four dimensions: coworker solidarity (supportive peer to peer relationships; item 7), supervisor harmony (the amount of conflict between supervisors [dispatchers] and employees; item 8), anonymity (the ability to stay unknown or hidden in a workplace with a large number of employees; item 9), and physicality of the job (the physical strength required to complete a job task; item 10). One item was developed for each dimension. The items associated with *coworker solidarity* and *supervisor harmony* were developed based on prior research indicating that good peer relationships and lack of conflict with supervisors were protective against sexual harassment (Goldenhar et al., 1998; Lembright & Riemer, 1982). In developing the items associated with coworker solidarity and supervisor harmony, consideration was given to the fact that truck driving is an occupation which has many drivers working by themselves, there may be a lack of strong peer-to-peer relationships due to limited contact, and not all truck drivers have just one direct dispatcher. The response options for the item for coworker solidarity ranged from 1 (poor) to 5 (very strong). For supervisor harmony, the response options ranged from 1 (constant) to 5 (never). Coworker solidarity and supervisor harmony were reverse scored. The *anonymity* item estimated the size of the organization, and it was based on the assumption that larger organizations provide more anonymity for employees who engage in sexual harassment of females on the job.

In organizations with larger numbers of employees, harassers may be able to act without drawing attention to themselves and more harassers may be present (De Coster, Estes, & Mueller, 1999). One consideration in the development of this item was that the size of trucking companies across the United States varies greatly (Trucking Monitor, 2021). The response options for anonymity ranged from 1 (< 50) to 5 (>1,000). The item measuring *physicality of the job* was based on the fact that drivers are expected to dolly, or roll, trailer landing gear up and down or may be required to hand unload trucks without the assistance of people or machines. In addition, physicality depends on the type of trailer a driver pulled (e.g., minimal physical strength is required to secure a box trailer, while strapping and tarping a flatbed trailer requires a significant amount of physical strength). Males may believe females are incapable of doing physically demanding work, and women who are employed in those physically demanding jobs are more likely to be harassed (Pogrebin & Poole, 1997). The response options for physicality ranged from 1 (brutal) to 5 (easy). Physicality was reverse scored. The total workplace culture scores ranged from 4 to 20. Higher scores indicated a more supportive workplace culture.

Gender context referred to the gender dynamics and coworker interactions within the workplace. It included the dimensions of coworker contact, power-threat, gender salience, and gender dominance. The item measuring *coworker contact* (item 11) was based on the fact that there may be little daily face-to-face contact with peers but contact with peers may occur using cellular phones and Citizen Band (CB) radios. Response options for the coworker contact item ranged from 1 (zero) to 5 (seven or more). The two items developed to measure *power threat* (items 12-13) were related to females being

treated as equals within the workplace and females taking over jobs traditionally held by males. Women who are seen as a threat to men and their jobs report an increase in sexual harassment episodes (Hulett, Bendick, Thomas, & Moccio, 2008; Rabe-Hemp, 2008). Response options for the equal treatment item (item 12) ranged from 1 (never) to 5 (always), and the response options for the job take-over item (item 13) ranged from 1 (completely concerned) to 5 (not concerned at all). The items measuring *gender salience* (item 14) and *gender dominance* (item 15) were based on research showing that females working in male-dominated workplaces are more likely to be sexually harassed (Gutek & Morach, 1982; Lopez, Hodson, & Roscigno, 2009). Response options for the gender salience item (item 14) ranged from 1 (almost all men) to 5 (almost all women), and the gender dominance item (item 15), number of women, ranged from 1 (<9) to 5 (>100). Total gender compositions scores ranged from 5 to 25. Higher scores indicated women were more often spoken to and treated as equals.

Content validity

Three expert researchers in occupational and public health were identified and recruited to participate in an expert panel to establish content validity of the initial 15-item organizational antecedent instrument. Initially, one expert researcher who had conducted research with truck drivers was invited and snowball sampling was used to identify and invite two more researchers with published research on truck drivers. Each researcher had been a registered nurse for at least 30 years and was teaching at an accredited school of nursing. Each held a research-focused doctoral degree in nursing (i.e., Doctor of Philosophy in Nursing or Doctor of Nursing Science). Collectively, the reviewers' research backgrounds included occupational health and safety of truck drivers

(motor vehicle crash prevention, sleep apnea, stress and social isolation, access to health care and health behaviors), public health (forensic nursing, global health, sexual and domestic violence, health disparities, and social determinants of health), and community and public health (patient-provider relationships, various environments of care, and the mental and physical health of truck drivers).

The three expert reviewers each received a letter of invitation explaining the study's framework and aims and the instrument review guidelines. Each expert reviewer was asked to complete an online survey to evaluate each antecedent item on six characteristics: relevance to the construct and conceptual definition, objectivity, clarity in meaning, simplicity of language, practicality for use in the truck driving population, and ease of reading the question. They were asked to score each of the six characteristics per item on a 3 – point Likert-type scale (1 – adequate, 2 – partially adequate, 3 – not adequate) (Revorêdo, Dantas, Maia, Torres, & Maia, 2016). **Table 3.3** contains an example of scoring by characteristic for each of two items**.** Reviewers were also invited to provide comments and/or suggestions for revisions of each item.

Fleiss Kappa was used to determine interrater reliability between three expert reviewers across the six characteristics for each item. Mean substitution was utilized in cases where two or fewer scores per reviewer were missing across characteristics. In this case, only items one and two were eligible for mean substitution as the majority of missing data came from reviewer three for items 3 - 15. **Table 3.2** contains the initial items generated to measure the organizational antecedents, the Fleiss Kappa scores for the mean item adequacy scores across characteristic, and a summary of suggestions for revision from the three reviewers. After evaluation of items and comments made by the

panel experts, items were revised for objectivity, clarity, simplicity, practicality, and vocabulary.

Item revision

Reviewers' comments guided item revisions. Definitions of constructs and dimensions were also reviewed. After careful consideration, items were revised to reflect more job-specific questions (e.g., how much control do you have over planning your routes) and with the knowledge that truck driving is a mobile and rather independent occupation (e.g., how many times a day do you talk to another driver from your company [e.g., face-to-face, text message, phone calls or over the CB). In addition, common language and words that truck drivers use were reflected in the revised items (e.g., dispatcher vs. supervisor; other company drivers vs. peers). Three additional items were added for clarification of subconstructs and practicality of use to the truck driving population (2 items in worker power and 1 item in gender composition). A total of 18 organizational antecedent items were developed for the survey distributed to the sample of female truck drivers. **Table 3.4** contains the constructs, dimensions, 18 items, conceptual definitions for the dimensions, response choices, and scoring ranges.

Item review post-revisions

Revised items were submitted to the initial expert panel Reviewer one for re-evaluation prior to data collection because this reviewer had responded to all items in the initial item evaluation. In addition, Reviewer one had conducted several truck drivers studies over time and had personal experience with the truck driving population as both a spouse and child of a truck driver. Reviewer one had no further suggestions or comments, and no further changes were made to the items prior to data collection.

Aim 2 & 3: Sampling and Procedures

Female truck drivers were recruited using social media, email and on-line newsletters. Data were collected from August 2019 through January 2020 utilizing an anonymous on-line survey. Data for this psychometric testing was collected as part of a larger study. Approval for the study was obtained from the University of Kentucky Medical Institutional Review Board.

Eligible participants were female, at least 21 years old, held a class A Commercial Driver's License (CDL-A), and had a minimum of three months truck driving experience. Eligible individuals who consented to participate ($N = 266$) were asked to complete an online survey including the 18-item Sexual Harassment Organizational Antecedent (SHOA) scale utilized for this study. The entire survey required approximately 20 minutes to complete. Eight individuals consented to participate but did not answer any questions. Twenty-two individuals started the questionnaire but dropped out prior to completing 75% of the survey. The final sample was comprised of 236 female truck drivers.

Statistical Analysis

Statistical analyses were conducted using IBM Statistical Package for Social Science, version 26 (SPSS 26.0). The threshold for statistical significance was $p < .05$. Descriptive statistics were utilized to summarize the sample demographic characteristics. Means and standard deviations summarized continuous variables. Frequencies were used to describe categorical variables.

Cronbach's alpha and inter-item reliability were used to determine internal consistency of the final 15-item organizational antecedent scale (Aim 2). Corrected item-

total correlations were tabulated as an additional measure of scale and item reliability to determine the correlation of each item with the total score. To determine construct validity (Aim 3), factor analysis was conducted utilizing Principal Component Analysis (PCA) with varimax rotation. Prior to PCA being performed, Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were utilized to assess for sampling adequacy and suitability for factor analysis. PCA and varimax orthogonal rotation were performed with loadings of 0.3 or higher indicating a significant contribution. Eigenvalues greater than one and above the point of inflection on the scree plot were retained. Pearson's *r* correlation coefficient was chosen because the unit of measurement for total sum scores for identified components was interval.

Results

The study sample was predominantly White (91.5%), non-Hispanic/Latino (96.6%) with a mean age of 50.48 $\pm$ 10.39 years. The mean length of experience as a truck driver was 14.95 $\pm$ 11.65 years, and the mean length of employment with their current company was 5.58 $\pm$ 7.16 years. The majority were company drivers (78.3%) who drove solo (76.6%) and nearly half (45.1%) spent 20 or more nights per month away from home. See **Table 3.5** for additional demographic information.

Aim 1: Content Validity

Data obtained from the initial three expert reviewers was entered into a spreadsheet. There were missing data for item scores across the six characteristics for most items with the exception of item 8, which had a complete set of scores across all six characteristics from each reviewer. The overall Kappa for the initial 15-item scale was .42, indicating an overall low-to moderate agreement between reviewers. Three items (4,

11, and 15) had perfect agreement among reviewers (κ = 1). Item #5 had a Kappa of .71 indicating strong agreement among reviewers. Low or negative Kappa indexes were found for 10 of the remaining 11 items indicating agreement between reviewers was less than expected by chance. This may have been due to a substantial amount of missing data from reviewers two and three (23% and 61%, respectively) as mean substitution could only be used when there were less than 30% of missing data (two or fewer missing scores per item per reviewer) (Mante et al., 2019) which was applicable only to items one and two. Item #3 did not produce a Kappa as only one reviewer scored the six characteristics of this item. Despite incomplete scoring of each of the six characteristics, the three reviewers offered comments and suggestions on the relevance, objectivity, clarity, simplicity, practicality, and vocabulary of items. As the instrument was only submitted to Reviewer one for evaluation of the revised instrument, data on final interrater agreement are not available.

Aim 2: Reliability

After data collection and prior to analysis, two questions, one included in the workplace culture construct and one included in the gender composition construct, were omitted from the final 18-item organizational antecedents scale as they were more closely related to demographics rather than antecedents (Chamberlain et al., 2008): item 11 ("number of drivers employed by company") and item 18 ("number of women employed by company"). In contrast to prior literature that associates size of the company with sexual harassment (i.e., harassers may be able to act without drawing attention to themselves;(De Coster, Estes, & Mueller, 1999), female truck drivers may not know the number of drivers or women employed by their company, reducing the likelihood that the

measure of gender composition is accurate. These unknown numbers may be due to largely diverse numbers of drivers employed by trucking companies across the US and the high rate of turnover in companies (Johnson et al., 2010; Trucking Monitor, 2021). An additional item was removed from gender context (male to female ratio) prior to analysis as truck driving is a male-dominated occupation where, in the majority of trucking companies, there are more males than females in the workplace. Therefore, only 15 of the 18 items were tested for reliability and validity. Internal consistency of the 15-item scale was strong, with an overall Cronbach's $\alpha = .83$, indicating the items were consistent with each other and included items that measured the same construct. Inter-item correlations ranged from -.07 to .74, indicating some items were not representative of the same content domain; some items were reasonably homogenous and had enough variability to be unique; and few items were highly correlated with other items in the scale. That is, there was a lack of multicollinearity among items.

Table 3.6 summarizes the corrected item-total correlations. Three items had low item-total correlations: Item #6 (company grievance procedures"); Item #11 ("physicality"); and Item #12 ("peer contact"). Deletion of these three items did not substantially change the overall Cronbach's alpha (.83, .83, and .83, respectively) or improve the internal consistency of the overall scale. The Cronbach's alpha of Construct 1 (worker power; **Table 3.7**) was .7 indicating an acceptable internal consistency. Construct 2 (workplace culture; **Table 3.8**) had low internal consistency ($\alpha = .31$), and Construct 3 (gender context; **Table 3.9**) had a Cronbach's alpha of .58 indicating low to moderate internal consistency.

Aim 3: Construct Validity

Factor analysis using principal component analysis (PCA) with varimax rotation was conducted on the final 15-item Sexual Harassment Organizational Antecedent (SHOA) scale. The Kaiser-Meyer-Olkin was .81 which exceeds the recommended value of .6 and indicates sampling adequacy. Factorability of the correlation matrix was supported by statistical significance of the Bartlett's test of Sphericity ($p < 001$). The correlation matrix revealed a majority of coefficients of .3 and above indicating suitability for factor analysis. **Table 3.11** contains the PCA, loadings and variances of the 15-item scale.

Results from the PCA revealed a four-dimensional 15-item measure, accounting for 61% of the variance in organizational antecedents of sexual harassment. The scree plot identified 4 components with eigenvalues greater than one (**Figure 3-1).** Two components (constructs) emerged after varimax rotation: job control (5 items) and workplace culture (6 items). Four additional items loaded on the other two components, reflecting formal grievance policies (2 items), and peer relationships (2 items). Given that components (constructs) should have at least 3 items (Eisinga, Te Grotenhuis, & Pelzer, 2013), or can have 2 items if the items are highly correlated ($r > .70$) and are not correlated with other items (Worthington & Whittaker, 2006), and neither met these criteria, components (constructs) three and four were removed from further psychometric testing.

Construct 1 (job control) contained items 1-5 measuring control over when and where drivers could restart their weekly hours of service, when they could take their daily 30-minute breaks, control over acceptance of the loads they may be asked to transport

and planning the routes they could take to pick-up and deliver loads of goods. Construct 2 (workplace culture) contained six items (items 8, 10-11, 13-15) measuring "job security" (the likelihood someone will retain their job),"dispatcher conflict" (the amount of conflict between drivers and their dispatchers), "physicality" (physical strength required to do the job), "equal job opportunities" (same job offers presented equally to men and women), "equal pay" (same pay given equally to men and women), and "job take-over" (fear by men that women will take over the jobs traditionally reserved for them). One item (#8 [job security]) loaded on more than one factor (see **Table 3.11**).

Based on the results of the PCA, a post hoc analysis was performed on the two identified constructs. We tested the two constructs for internal consistency reliability (**Tables 3.12 and 3.13**). Construct 1 (job control, 5 items) and Construct 2 (workplace culture, 6 items) each had adequate reliability ($\alpha = .80$ and .76, respectively). Corrected item-total correlations and item total statistics for Construct 1 (job control) and Construct 2 (workplace culture) are in **Tables 3.12** and **3.13**, respectively. The strength of relationships among variables in Constructs 1 and 2 were tested utilizing Pearson's correlation coefficient. There was a moderate positive correlation and statistically significant association between Construct 1 (job control) and Construct 2 (workplace culture) ($r_s = .47$, $p < .001$).

The results of the PCA showed two components (constructs) measuring job control and workplace culture, and two components (constructs) with two items each measuring grievance policies and peer relations. The constructs and placement of dimensions recognized by Chamberlain et al. (2008) were not fully aligned with our analysis (see **Table 3.1)**. The dimension of self-direction was identified in our analysis as

job control. The dimension of formal grievance policies formed their own construct with two items, and job security aligned with workplace culture. Two of the three dimensions identified by Chamberlain et al. (2008) under workplace culture remained under that construct. The third dimension was combined with one from gender context to form a separate construct (peer relations) comprised of two items. In addition, the remaining three original dimension of gender context aligned with workplace culture in our analysis. The realignment of the original dimensions may indicate a stronger interrelationship among items as opposed to theorized constructs and dimensions based on various sociological theories. However, the 15-item scale is reliable and could be used as a stand-alone measure as the items consistently measure the overall construct of organizational antecedents, or identified risk factors, of sexual harassment.

Discussion

The purpose of this study was to evaluate the psychometric properties of the author-developed 15-item Sexual Harassment Organizational Antecedent (SHOA) Scale based on Chamberlain et al. (2008) in a sample of female truck drivers. Instrument development began with a review and interpretation of conceptual definitions of constructs provided by Chamberlain et al. (2008) and a review of literature on organizational antecedents in the male-dominated occupations of law enforcement, firefighting, truck driving, and construction. Fifteen items were developed to measure the three major constructs of worker power, workplace culture, and gender composition. The initial 15-item scale was then sent to three expert reviewers for evaluation across six characteristics on each of the 15 items. The Kappa for the initial 15-item organizational antecedent scale was less than optimal as evidenced by the low to moderate degree of

agreement among reviewers across all characteristics. The possible reason for the lower overall kappa could be the significant amount of missing data for reviewers two and three across all characteristics even though mean substitution was used to replace missing scores when appropriate. Reviewers each had comments or suggestions for revision to improve objectivity, clarity, language simplicity, practicality for female truck drivers, and vocabulary. We revised the items based on expert reviewers' recommendations and a re-evaluation of conceptual definitions. Items were revised to more accurately reflect jobs tasks and responsibilities associated with the truck driving occupation and with female truck drivers in mind. Vocabulary was revised to use words more familiar to truck drivers. In addition, three items were added for clarification of constructs and for practicality to the truck driving occupation. The revised 18-item instrument was submitted to the initial expert panel reviewer for evaluation after revisions, who deemed the instrument satisfactory.

After data collection and prior to psychometric analysis of the instrument, two of the 18 items were omitted; they were more demographic in nature (e.g., number employed and number of women employed), and they were deemed difficult to interpret as the size of trucking companies largely varies across the US, and high turnover rates may make it difficult for participants to estimate the size of their company or the number of women working for their company. One additional item (male to female ratio) was removed as truck driving is a male-dominated occupation where, in the majority of trucking companies, there are more males than females. Thus, 15 items made up the final instrument which was then subjected to psychometric analysis. The 15-item instrument and its three original constructs to measure antecedents of sexual harassment in a sample

of female truck drivers revealed acceptable overall internal consistency. However, when each construct was tested, only one construct, worker power, was internally consistent. The other two constructs had unacceptable to poor internal consistency. In reviewing conceptual definitions and the sociological theories underlying Chamberlain et al. (2008) ‘s model, these findings seemed appropriate as the items in each of those constructs do not necessarily measure the same underlying construct. For example, in gender composition (the male versus female make-up of a workplace), contact hypothesis (contact between coworkers) is not the same as gender salience (ratio of male to female workers).

In contrast to the internal consistency reliability findings, the factor analysis revealed four distinct Components (constructs): job control, workplace culture, grievance policies and peer relations. Given the number of items in each component, or construct, the findings yielded two distinct constructs (job control and workplace culture) and two constructs with two items each (formal grievance policies and peer relationships). These findings were partially in line with the model proposed by Chamberlain et al. (2008) who developed a model with three distinct constructs: worker power, workplace culture, and gender composition.

Based on the analysis reported here, the worker power dimension of self-direction identified by Chamberlain et al. (2008) stood alone and was renamed job control as the items better reflected the control female truck drivers have over their job duties. Considering job control (both high and low control) is a significant contributor to sexual harassment of females in male-dominated occupations (Goldenhar et al., 1998; Gruber & Bjorn, 1982; Rospenda, Richman, Ehmke, & Zlatoper, 2005), it makes sense that this

construct stands alone. In contrast to Chamberlain et al. (2008), the measure of job security related more to workplace culture than worker power. Theoretically, "job security" could be related to two constructs as having job security is correlated with job control due to length of tenure and a positive working environment (cite). In addition, women with a higher level of job security are more likely to report harassing behaviors without fear of retaliation such as losing their job (Haarr & Morash, 2013). However, job security is not about worker power (e.g., control over the workplace), but it is more about the workplace culture. Those with higher job security form lasting, positive coworker relationships which increase morale, increase retention, and decrease sexual harassment (De Coster et al., 1999; Goldenhar et al., 1998; Heide & Miner, 1992; Mueller, De Coster, & Estes, 2001; Uggen & Blackstone, 2004).

Similarly, the 6-item workplace culture subscale was comprised of some dimensions not originally proposed by Chamberlain et al. (2008). As above, job security originally conceptualized by Chamberlain et al. (2008) as a dimension of worker power, was a measure of workplace culture instead. In addition, the original stand-alone construct of gender composition (Chamberlain et al., 2008) fell within the workplace culture factor, or construct. While Chamberlain et al. (2008) originally included coworker solidarity as a measure of workplace culture, we found this dimension loaded on a separate component altogether, called peer relationships. Similar to Chamberlain et al. (2008), supervisor conflict and physicality of the job were associated with the construct of workplace culture. Each of the workplace culture items, as identified in the analysis reported here, reflect the interpersonal dynamics within a workplace such as managerial power (Cleveland & Karst, 1993); the behavior expectations related to job tasks based on

gender (Gutek & Morach, 1982; Cleveland & Karst, 1993); and the gender expectations and make-up of a workplace (e.g., equal employment and pay opportunities, and the gender ratio in the workplace [Gutek et al., 1990]).

Formal grievance policies, considered initially as a worker power dimension (Chamberlain et al., 2008) and measured by two items, loaded on a separate component in our analysis. This finding is consistent with Fitzgerald et al. (1997) who categorized grievance policies and procedures as organizational context as opposed to worker power. The presence or absence of formal grievance policies and procedures in a workplace is typically controlled by the organization, not the individual worker. However, the worker's knowledge of or participation in the development of formal grievance policies and procedures may or may not be within a worker's power or control depending on how the information is shared with employees (e.g., formally through employee's handbook or informally through word-of-mouth). Regardless, formal grievance policies are an important construct in the Sexual Harassment Organizational Antecedent (SHOA) Scale which needs further measurement development and testing. The two items measure knowledge of grievance policies in the workplace and knowledge of whom to report grievances. Items measuring actual presence of grievance policies in an employee handbook, enforcement of zero tolerance policies, initial education training on sexual harassment upon hire, and engagement in mandatory conduct training yearly or biyearly could be developed and tested for reliability and validity in a future measurement study.

Like grievance policies, the construct of peer relationships emerged as an important set of individual items explaining the organizational antecedents of sexual harassment in male-dominated occupations. While Chamberlain et al. (2008) included the

two items under separate constructs (coworker solidarity as a dimension in workplace culture and social contact hypothesis as a dimension in gender composition), our analysis revealed the two items loaded on one component. The analysis reported here found a moderate, positive association between male/female peer relationships (identified by Chamberlain et al. [2008] as coworker solidarity) and male/female peer contact (identified by Chamberlain et al. [2008] as social contact hypothesis). Consistent with our finding, weak peer relationships and less contact between the genders is an ideal environment for sexual harassment to occur (Goldenhar, Williams, & Swanson, 2003; Lembright & Riemer, 1982; Snyder, Scherer, & Fisher, 2012).

Overall, the psychometric findings in this study support the use of the 15-item Sexual Harassment Organizational Antecedent (SHOA) scale as an instrument to measure organizational antecedents in female truck drivers. In addition to the full 15-item scale, our analysis supported two components measuring two important constructs, job control and workplace culture. In addition, our findings reveal two components that support two potential additional constructs, grievance policies and peer relationships. Further measurement development and psychometric testing is needed to expand our knowledge of the impact of grievance policies and peer relationships as risk factors for sexual harassment in male-dominated occupations. As there are no standard instruments with reported psychometrics to measure organizational antecedents that may contribute to sexual harassment of females in male-dominated occupations, this study represents the first step in developing an instrument to measure those risk factors.

Limitations and Recommendations for Future Research

First, the sample was predominately White and non-Hispanic. Additional psychometric testing is needed with female workers of color in male-dominated occupations to provide additional evidence of reliability and validity. Second, this study required women have a minimum of 3-months driving experience. Future studies may need to include women with less than 3-months driving experience. The majority of company training takes place over-the-road with male trainers due to the limited availability of female trainers. This situation may increase the possibility of a negative workplace culture, increasing the odds for sexual harassment. Third, it is not possible to determine if participants answered based on their current company or a company where they previously worked, particularly if they had been employed with their current company for a short time. As trucking companies have turnover rates ranging from 49%-140% (American Trucking Association, 2011; Watson, 2011), documenting sexual harassment in their current versus previous company may be important in understanding the impacts of job control and workplace culture. Fourth, the instrument was developed specifically for truck driving and will need to undergo revisions and additional psychometric testing if used in other male-dominated workplaces such as law enforcement, firefighting, or construction. Fifth, all three content reviewers did not evaluate the revised 18-item instrument. Only the primary expert reviewer, an established researcher with truck drivers, provided approval with no further changes. While this did not have an impact on the results of this study, establishing future content validity will be needed to understand sexual harassment in other male-dominated occupations. Finally, the instrument utilized in this study did not measure formal grievance policies or peer

relationships as potential organizational antecedents that could impact sexual harassment in male-dominated occupations.

Conclusion

This study of the psychometric properties of the Sexual Harassment Organizational Antecedent (SHOA) scale provided preliminary evidence of the reliability and validity of the instrument for to investigate organizational antecedents that may contribute to sexual harassment among female truck drivers. In particular, evidence supported the reliability and validity of job control and workplace culture constructs. Development and testing of additional items to provide more comprehensive measures of grievance policies and peer relationships are needed to understand the role these constructs may play in risk for sexual harassment of female truck drivers. Although the scale needs further development and testing, it may be useful in measuring organizational antecedents that may contribute to sexual harassment in not only female truck drivers, but in other male-dominated occupations.

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Table 3.1 Initial Constructs and Dimensions of Organizational Antecedents to Sexual Harassment and Final Constructs and Dimensions after Psychometric Testing

Initial constructs and dimensions[1]	Constructs and dimensions after psychometric testing
Worker Power Self-direction Autonomy Creativity Freedom of movement Formal grievance procedures Policies and procedures Who can file Job security	I. Job control
II. Workplace Culture Coworker solidarity Supervisor harmony Anonymity* Physicality of job	II. Workplace Culture Job security Supervisor harmony Physicality of job Power threat
III. Gender Composition Contact hypothesis Power threat Gender Salience* Gender dominance*	III. Formal Grievance Procedures Policies and procedures Who can file
	IV. Peer Relationships Coworker solidarity Peer Contact

[1]Adapted from Chamberlain, L. J., Crowley, M., Tope, D., & Hodson, R. (2008). Sexual Harassment in Organizational Context. *Work and Occupation, 35*(3), 262-295. DOI: 10.1177/073088840832200
*Item removed prior to analysis

Table 3.2 Original 15 Items Developed and Analyzed for Content Validity, Fleiss' Kappa Scores, and Suggestions for Revision

Item	Fleiss' Kappa	Suggestions for Revision
Worker Power		
1. How much independence do you feel you have in your job?	-.14	Define independence-for instance: Do you have control over your work schedule
2. To what degree do you feel you are able to use your own ideas to complete your work?	.11	"To what degree" is colloquial-make clearer and more straightforward
3. To what degree do you feel you are free to move around your workplace at will?	*	"Workplace" is a problematic word as truckers' workplaces are not one place
4. To your knowledge, does your company have formal sexual harassment grievance procedures?	1	
5. Within the company you work for, do you know who to file a sexual harassment complaint with?	.71	Wordy
6. How confident do you feel about your job security?	-.54	Simplify. Wordy. Will everyone understand "job security"-substitute with likelihood you will be able to keep your job
Workplace Culture		
7. On average, how strong is your relationship with your coworkers?	-.76	Coworkers might be confusing
8. How frequently do you feel you have conflict with your supervisor (dispatcher)?	.17	If you mean dispatcher, say dispatcher. How often do…?
9. How many employees do you think are in the company you work for?	-.71	Question may not capture construct. How many employees….
10. How physically demanding do you think your job is?	-.64	Fewer words.

Table 3.2 (Continued)

Item	Fleiss' Kappa	Suggestions for Revision
Gender Composition		
11. How many times a day do you have direct contact with a coworker?	1	What is direct contact? Face-to-face, phone call/text?
12. To what degree do you feel woman are accepted as equals within your company?	-.60	Change question to be more objective: are you paid like men? Offered same jobs? Equals may be problematic.
13. To what degree do you think men in your company feel threatened by female truck drivers?	-.33	Threat implies danger-question needs objectivity
14. Estimate the gender ratio of your company	-.36	Simplify "estimate"-what is ratio of …
15. How many women do you think are employed by your company?	1	

*Unable to calculate a Kappa based on limited data

Table 3.3 Example of Scoring Used by Expert Panel Reviewers for each Characteristic: Items 2 and 5 ($\kappa = .11$, $\kappa = .71$, respectively)

Item	Characteristic	Reviewer 1	Reviewer 2	Reviewer 3
2. To what degree do you feel you are able to use your own ideas to complete your work?				
	Relevance	1	1	1
	Objectivity	2	2	1
	Clarity	3	2	2
	Simplicity	3	3	2
	Practicality	3	*2	2
	Vocabulary	3	2	2
5. Within the company you work for, do you know who to file a sexual harassment complaint with?				
	Relevance	1	**	1
	Objectivity	1	**	1
	Clarity	2	**	2
	Simplicity	2	**	3
	Practicality	1	**	1
	Vocabulary	2	**	2

Note: 1= adequate; 2=partially adequate; 3=not adequate
*mean substitution used for missing score; **denotes missing data

Table 3.4 Revised 18-Item Organizational Antecedent Constructs, Items, Conceptual Definitions, Response Options, and Score Ranges

Construct Subconstruct Item (s)	Conceptual Definitions of Subconstructs	Response Options	Score Range
Worker Power (*n* = 8)			
Self-direction 34-hour restart when (autonomy) 34-hour restart where (autonomy) 30-minute break when (autonomy) Route planning (creativity) Control over loads (FOM[1])	The ability to complete one's work or assigned job task using their own ideas or methods and on their own time frame including pace and timing.	1 – No control at all 2 – Very little control 3 – Some control 4 – A great deal of control 5 – Complete control	8-40
Formal Grievance Procedures Company grievance procedure Who can file a grievance	The knowledge regarding the presence or absence of formal company grievance policies and procedures and the knowledge about who can file a grievance	1 – Definitely not 2 – Probably not 3 – Not sure 4 – Probably yes 5 – Definitely yes	
Job Security Confidence in retaining job	The probability an individual will retain their job and source of income	1 – Not confident at all 2 – Not very confident 3 – Somewhat confident 4 – Confident 5 – Very confident	

Table 3.4 (Continued)

Construct Subconstruct Item (s)	Conceptual Definitions of Subconstructs	Response Options	Score Range
Workplace Culture (n = 4)			
Coworker solidarity Peer relationship strength	The strength of relationships between coworkers	1 – Poor 2 – Weak 3 – Average 4 – Strong 5 – Very Strong	
Supervisor harmony Conflict with dispatcher	The amount of conflict between drivers and their dispatchers	1 – Constant 2 – Frequently 3 – Average 4 – Infrequently 5 – Never	4-20 **3-15
Anonymity* Size of company	The size of the company that allows a driver to stay unknown or hidden	1 – < 50 2 – 51-99 3 – 100-499 4 – 500-999 5 – > 1000	
Physicality of job Physical demands of job	The physical strength required to do the job	1 – Brutal 2 – Very difficult 3 – Difficult 4 – Average 5 – Easy	

Table 3.4 (Continued)

Construct Subconstruct Item (s)	Conceptual Definitions of Subconstructs	Response Options	Score Range
Gender Composition (*n* = 6)			
Contact hypothesis Daily peer contact	Interactions and direct and indirect contact between coworkers (e.g., face-to-face, cell phone conversations, text messages, CB radio communication)	1 – Zero 2 – One to two 3 – Three to four 4 – Five to six 5 – seven or more	
Power Threat Equal job opportunities Equal pay	Unequal treatment in the workplace due to the perceived threat that women will replace men in their traditional, gender-based work roles	1 – Never 2 – Rarely 3 – Sometimes 4 – Frequently 5 – Always	6-30 **4-20
Job takeover		1 – Completely concerned 2 – Very concerned 3 – Somewhat concerned 4 – Not very concerned 5 – Not concerned at all	

Table 3.4 (Continued)

Construct Subconstruct Item (s)	Conceptual Definitions of Subconstructs	Response Options	Score Range
Gender salience* Workplace ratio	Genders within a workplace are skewed in one direction of the other	1 – Almost all men 2 – More men than women 3 – Equal number of men and women 4 – More women than men 5 – Almost all women	
Gender Dominance* Number of women	One gender is more visible in the workplace due to either large numbers of that gender or small numbers of the other gender	1 – ≤ 9 2 – 10-24 3 – 25-49 4 – 50-99 5 – ≥ 100	

Adapted from Chamberlain, L. J., Crowley, M., Tope, D., & Hodson, R. (2008). Sexual Harassment in Organizational Context. *Work and Occupation, 35*(3), 262-295. DOI: 10.1177/073088840832200

[1]Freedom of Movement

*Item removed after data collection, prior to analysis; **Score range after item removed prior to analysis

Table 3.5 Selected Sample Demographics (N = 236*)

Variable		No.	Frequency (%)
Race	White	215	91.5
	Other	20	8.5
Ethnicity	Non-Hispanic	225	96.6
	Hispanic	8	3.4
Average Yearly Personal Income (pre-tax)	0-$19,999	3	1.3
	$20,000-$39,999	33	14.0
	$40,000-$59,999	64	27.5
	$60,000-$79,999	75	32.2
	≥ $80,000	58	24.9
Education level	< high school	4	1.7
	High school graduate	45	19.2
	Some college	131	56.0
	College graduate	50	21.4
	Master's or Doctorate education	4	1.7
State of Residence	Northeast	20	8.7
	Midwest	53	23.1
	South	106	46.3
	West	43	18.8
	Canada	7	3.1
Driving status	Solo driver	180	76.6
	Team driver w/known person	51	21.7
	Team driver w/unknown person	4	1.7
Owner status	Owner operator	51	21.7
	Company driver	184	78.3
Nights away from home per month?	≤ 4	50	21.3
	5 – 9	22	9.4
	10 – 14	14	6.0
	15 – 19	43	18.3
	≥ 20	106	45.1
Drivers employed by company	≤ 50	57	24.3
	51 – 99	25	10.6
	100 – 499	64	27.2
	500 – 999	26	11.1
	≥ 1000	63	26.8

Table 3.5 (Continued)

Variable		No.	Frequency (%)
Number of women employed by company	≤ 9	94	40.9
	10 – 24	34	14.8
	25 – 49	14	6.1
	50 – 99	30	13.0
	≥ 100	58	25.2

* = Due to missing data, not all numbers equal 236

Table 3.6 Cronbach's Alpha, Item and Item-to-total Statistics of 15-item Scale (n = 223)

Item	Mean	SD	Corrected Item-to-Total Correlation	Cronbach's Alpha if Item Deleted
Worker Power				
1. How much control do you have over WHEN to take your 34-hour restart?	3.70	1.16	.51	.81
2. How much control do you have over WHERE to take your 34-hour restart?	3.63	1.25	.56	.81
3. How much control do you have over when to take your 30-minute break?	3.96	1.21	.43	.82
4. How much control do you have in planning your routes?	3.73	1.28	.55	.81
5. How much control do you have over the loads you are given or offered?	2.61	1.38	.47	.82
6. To your knowledge, does your company have formal sexual harassment grievance procedures?	3.88	1.19	.25	.83
7. At your company, is there a person who can file a sexual harassment complaint for you?	3.59	1.13	.46	.82
8. How confident are you that your job is secure?	3.63	1.29	.70	.80
Workplace Culture				
9. How strong is the relationship between you and other drivers at your company (not including a team driver)?	3.26	1.16	.51	.81
10. How often do you have conflict with your dispatcher?	3.93	.95	.43	.82
11. How physically demanding is your job?	3.78	.83	.09	.83
Gender Composition				
12. How many times a day do you speak to another driver from your company (could be face-to-face, text messages, phones calls or over the CB)?	2.30	1.29	.22	.83
13. At your company, are women offered the same job opportunities as men?	4.16	1.11	.61	.81
14. At your company, are women paid the same as men?	4.45	.97	.51	.81
15. At your company, do you think male truck drivers are concerned that female truck drivers will take over their jobs?	4.27	.93	.39	.82
Total Sexual Harassment Organizational Antecedent (SHOA) Scale (15 items)				.83

Table 3.7 Cronbach's Alpha, Item and Item-to-total Statistics, Construct 1: Worker Power (n = 226)

Item	Mean	S.D.	Corrected Item-to-Total Correlation	Cronbach's Alpha if Item Deleted
1. How much control do you have over WHEN to take your 34-hour restart?	3.71	1.15	.59	.75
2. How much control do you have over WHERE to take your 34-hour restart?	3.65	1.25	.59	.75
3. How much control do you have over when to take your 30-minute break?	3.95	1.21	.43	.77
4. How much control do you have in planning your routes?	3.73	1.28	.58	.75
5. How much control do you have over the loads you are given or offered?	2.63	1.38	.51	.76
6. To your knowledge, does your company have formal sexual harassment grievance procedures?	3.88	1.19	.21	.81
7. At your company, is there a person who can file a sexual harassment complaint for you?	3.58	1.13	.43	.77
8. How confident are you that your job is secure?	3.63	1.29	.62	.74
Total Worker Power Construct				.79

Table 3.8 Cronbach's Alpha, Item and Item-to-total Statistics, Construct 2: Workplace Culture (n = 228)

Item	Mean	S.D.	Corrected Item-to-Total Correlation	Cronbach's Alpha if Item Deleted
9. How strong is the relationship between you and other drivers at your company (not including a team driver)?	3.28	1.16	.13	.34
10. How often do you have conflict with your dispatcher?	3.94	.95	.27	.03
11. How physically demanding is your job?	3.77	.84	.13	.30
Total Workplace Culture Construct				.31

Table 3.9 Cronbach's Alpha, Item and Item-to-total Statistics, Construct 3: Gender Context (n = 227)

Item	Mean	S.D.	Corrected Item-to-Total Correlation	Cronbach's Alpha if Item Deleted
12. How many times a day do you speak to another driver from your company (could be face-to-face, text messages, phones calls or over the CB)?	2.30	1.29	.08	.76
13. At your company, are women offered the same job opportunities as men?	4.16	1.11	.58	.32
14. At your company, are women paid the same as men?	4.46	.96	.56	.37
15. At your company, do you think male truck drivers are concerned that female truck drivers will take over their jobs?	4.27	.92	.37	.51
Total Gender Context Construct				.58

Table 3.10 Commonalities of 15-item scale using Principal Component Analysis Extraction Method (*n* = 223)

	Initial	Extraction
Worker Power		
1. How much control do you have over WHEN to take your 34-hour restart?	1.00	.72
2. How much control do you have over WHERE to take your 34-hour restart?	1.00	.66
3. How much control do you have over when to take your 30-minute break?	1.00	.47
4. How much control do you have in planning your routes?	1.00	.60
5. How much control do you have over the loads you are given or offered?	1.00	.63
6. To your knowledge, does your company have formal sexual harassment grievance procedures?	1.00	.78
7. At your company, is there a person who can file a sexual harassment complaint for you?	1.00	.72
8. How confident are you that your job is secure?	1.00	.63
Workplace Culture		
9. How strong is the relationship between you and other drivers at your company (not including a team driver)?	1.00	.63
10. How often do you have conflict with your dispatcher?	1.00	.41
11. How physically demanding is your job?	1.00	.36
Gender Composition		
12. How many times a day do you speak to another driver from your company (could be face-to-face, text messages, phones calls or over the CB)?	1.00	.77
13. At your company, are women offered the same job opportunities as men?	1.00	.72
14. At your company, are women paid the same as men?	1.00	.61
15. At your company, do you think male truck drivers are concerned that female truck drivers will take over their jobs?	1.00	.45

Table 3.11 Principal Component Analysis, Loadings and Variances of 15-item Scale (n = 223)

Item	Components without Rotation				Components with Rotation*			
	1	2	3	4	1	2	3	4
1. 34-hour restart-when	.60	-	-	-	.83	-	-	-
2. 34-hour restart-where	.65	-	-	-	.76	-	-	-
3. 30-minute break-when	.54	-	-	-	.51	-	-	-
4. Control over route planning	.66	-	-	-	.71	-	-	-
5. Control over loads	.58	-	-	-	.77	-	-	-
6. Company grievance procedures	-	.57	.46	-	-	-	.88	-
7. Who can file grievance	.52	.41	.43	-	-	-	.80	-
8. Job security	.78	-	-	-	.43	.51		-
9. Peer relationships	.57	-	-	.44	-	-	-	.67
10. Dispatcher conflict	.52	-	-	-	-	.60	-	-
11. Physically demanding job	-	-	-	-	-	.51	-	-
12. Peer contact	-	-	.51	.65	-	-	-	.87
13. Equal job opportunities	.72	-	-	-	-	.77		-
14. Equal pay	.64	-	-	-	-	.74	-	-
15. Job take-over	.50	-	-	-	-	.65	-	-
Variance explained by component (%)	31.21	11.72	10.63	7.45	20.23	18.39	12.58	9.79
Total cumulative variance explained (%)	31.21	42.92	53.55	61.00	20.23	38.62	51.21	61.00

* Varimax rotation converged in 5 iterations

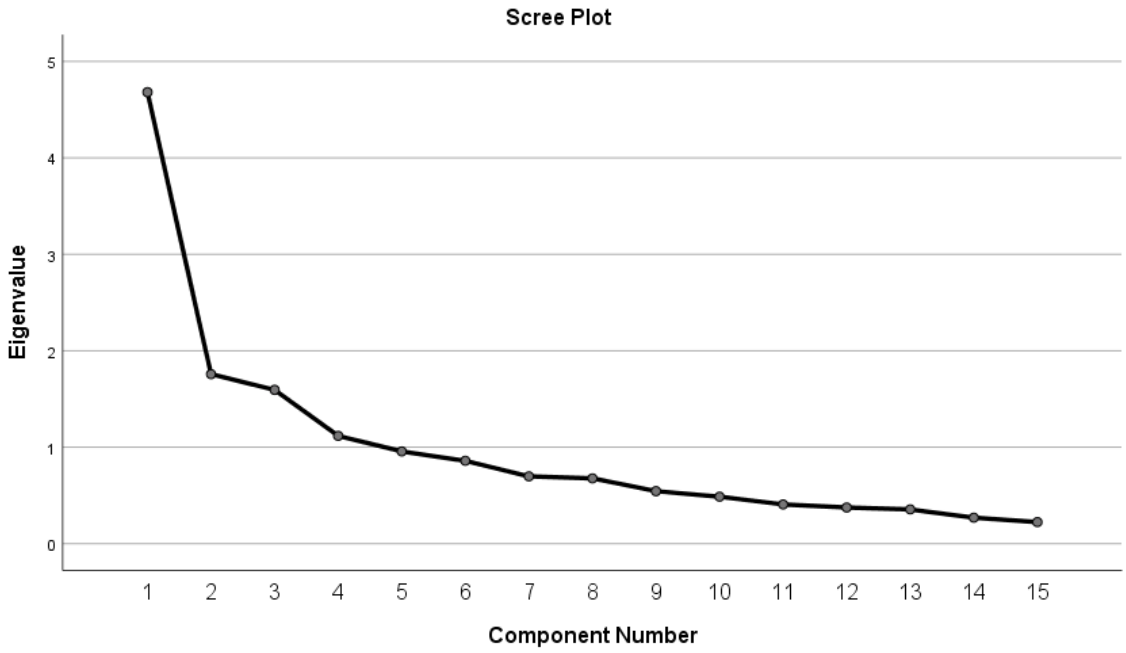
Table 3.12 Cronbach's Alpha, Item and Item-to-total Statistics, Revised Construct 1: Job Control (n = 226)

Item	Mean	SD	Corrected Item-to-Total Correlation	Cronbach's Alpha if Item Deleted
1. How much control do you have over WHEN to take your 34-hour restart?	3.71	1.15	.66	.73
2. How much control do you have over WHERE to take your 34-hour restart?	3.65	1.25	.61	.75
3. How much control do you have over when to take your 30-minute break?	3.95	1.21	.42	.81
4. How much control do you have in planning your routes?	3.73	1.28	.60	.75
5. How much control do you have over the loads you are given or offered?	2.63	1.38	.60	.75
Total Job Control Construct				.80

Table 3.13 Cronbach's Alpha, Item and Item-to-total Statistics, Revised Construct 2: Workplace Culture (*n* = 226)

Item	Mean	S.D.	Corrected Item-to-Total Correlation	Cronbach's Alpha if Item Deleted
8. How confident are you that your job is secure?	3.64	1.29	.55	.71
10. How often do you have conflict with your dispatcher?	3.93	.95	.48	.73
11. How physically demanding is your job?	3.77	.84	.18	.79
13. At your company, are women offered the same job opportunities as men?	4.16	1.11	.70	.66
14. At your company, are women paid the same as men?	4.46	.96	.65	.69
15. At your company, do you think male truck drivers are concerned that female truck drivers will take over their jobs?	4.27	.92	.46	.74
Total Workplace Culture Construct				.76

Figure 3.1 Scree Plot of the Principal Component Analysis of 15-Item Scale



CHAPTER 4: Perceived Organizational Antecedents of Sexual Harassment in Female Truck Drivers

Abstract

Background: Risk factors such as greater job control (e.g., when and where to take breaks and how and when to accomplish job tasks) and a negative workplace culture (e.g., increased supervisor conflict [dispatcher conflict in the case of truck drivers], a job that requires physical strength, unequal pay) have been found to contribute to sexual harassment of females in general workplaces and in the male-dominated occupations of law enforcement, firefighting, and construction. However, there are no known studies specifically examining these antecedents to sexual harassment in female truck drivers.

Objective: The purpose of this study was to determine the relationships between perceived organizational antecedents and sexual harassment in a sample of female truck drivers. The specific aims were to: 1) examine the relationships between perceived organizational antecedents, demographic variables, and sexual harassment; and 2) determine associations between job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure. We hypothesized that female truck drivers who report lower job control and a positive workplace culture will be less likely to report incidences of sexual harassment in the workplace (Aim 2).

Methods: A cross-sectional, non-experimental design using convenience sampling of 236 female truck drivers who were at least 21 years of age, held a Class A Commercial Driver's License (CDL-A), and had a minimum of 3-months truck driving experience were recruited via social media. Participants were asked to complete an anonymous 48-item online survey to evaluate perceptions of organizational antecedents

that may put female truck drivers at risk for sexual harassment, behaviors they have experienced associated with sexual harassment, and demographic characteristics. The 15-item author developed Sexual Harassment Organizational Antecedent (SHOA) scale assessed job control (5 items; e.g., when and where to take a 34-hour restart) and workplace culture (6 items; e.g., job security, physicality of the job). The 18-item Sexual Experiences Questionnaire-Workplace version measured self-reported sexually harassing behaviors (e.g., sexual stories or jokes, deliberate or unwanted touching) while on the job. Frequencies, means, and standard deviations were used to describe the sample and responses to all study variables. Pearson r, analysis of variance (ANOVA) and independent t-tests were used to determine the relationships between job control, workplace culture, demographic and job-related variables, and self-reported sexual harassment on the job. Multiple linear regression was performed to test the hypothesis.

Results: The Sexual Harassment Organizational Antecedent (SHOA) scale, and the subscales of job control and workplace culture were negatively correlated with sexual harassment. The greater the job control and the more positive the workplace culture, the lower the reported incidences of sexual harassment. Age was also negatively correlated with sexual harassment. Older female truck drivers were less likely to report sexual harassment on the job. Two regions (West and Midwest) indicated a greater number of incidences of sexual harassment, compared to the reference region of Canada. Independent T-Test indicated a significant difference between groups in the control variable of ethnicity on reported incidences of sexual harassment. Female drivers who identified with Hispanic/Latino ethnicity reported more incidences of sexual harassment while on the job than those of non-Hispanic/non-Latino ethnicity. In addition, a one-way

analysis of variance (ANOVA) indicated a significant relationship between nights away from home per month and sexual harassment. However, post hoc analysis revealed no significant differences between groups. Regression analysis revealed workplace culture (i.e., job security, dispatcher conflict, physicality of the job, equal pay and job opportunities, and job take-over) was associated with sexual harassment in this sample of female truck drivers, controlling for age, race, ethnicity, income, and tenure. Specifically, there was a 1% increase in reported incidences of sexual harassment for every 1.7 ($\pm$.19) decrease in workplace culture. In addition, age and tenure (length of time as a truck driver) were significantly associated with sexual harassment. There was a .34 ($\pm$ .08) decrease in age for every 1% increase in reported incidences of sexual harassment, and there was a .18 ($\pm$.07) increase in tenure for every 1% increase in reported incidences of sexual harassment. Job control was not associated with reported incidences of sexual harassment. Over 40% of the sample of female truck drivers reported previous experience with sexual harassment in the workplace. However, approximately 92% reported at least one sexually harassing behavior while on the job.

Conclusion: Workplace culture and job control were negatively correlated with sexual harassment in this convenience sample of female truck drivers. Those with higher workplace culture scores and greater job control scores were less likely to report incidences of sexual harassment on the job. When controlling for age, race, ethnicity, income, and tenure, those who reported a positive workplace culture, were older, and reported shorter job tenure as a truck driver were less likely to report incidences of sexual harassment. Job control was not associated with self-reported sexual harassment when controlling for age, race, ethnicity, income, and tenure. These findings have implications

for strengthening workplace policies and practices in the trucking industry that may reduce the incidence of sexual harassment in female truck drivers. Specifically, policies and practices that promote job security, decrease dispatcher conflict, and decrease the physicality of the job need to be developed and implemented. In addition, training programs that help female drivers identify the behaviors associated with sexual harassment and that promote healthy and constructive dialogue with dispatchers regarding reported incidences of sexual harassment could aide in combating the problem by creating a safe environment free from bias or retaliation. Future research needs to focus on understanding the role the individual elements within workplace culture (e.g., job security, dispatcher conflict, physicality, job equality [equal pay and job opportunities], and job take-over) play on incidences of reported sexual harassment.

Introduction

An estimated 60% of women in male-dominated occupations (defined as women comprising less than 25% of employees) report sexual harassment in the workplace (Hom, Stanley, Spencer-Thomas, & Joiner, 2017; Lonsway, Paynich, & Hall, 2013; Morash & Haarr, 2012; Seklecki & Paynich, 2007; Somvadee & Morash, 2008; Yoder & Aniakudo, 1995); in general workplaces (workplaces not designated as male-dominated), reported rates of sexual harassment of women by men are approximately 50% (Das, 2009; Feldblum & Lipnic, 2016; Schat, Frone, & Kelloway, 2006). Male dominated occupations include law enforcement, firefighting, construction, and truck driving (United States Department of Labor, 2018). The percentage of women in these occupations range from 3% (construction) to 14% (law enforcement). Women in truck driving account for less than 7% (Deloitte, n.d.) of the 3.5 million truck drivers in the United States (Alltrucking.com, 2016).

Sexual harassment is defined as unwanted behaviors, often of a sexual nature, that make the working environment uncomfortable and/or threatening or that interfere with productivity and performance (United States Equal Employment Opportunity Commission, n.d.). Sexual harassment includes gender harassment (e.g., sexist remarks based on a person's gender), unwanted sexual attention (e.g., jokes, stories, teasing, unwanted touching, etc.), and sexual coercion (the promise of something in exchange for sexual favors, usually by someone in a management position) (Curtis, Meischke, Stover, Simcox, & Seixas, 2018; Hulett, Bendick, Thomas, & Moccio, 2008; Texeira, 2002). Gender harassment and unwanted sexual attention are the most frequently reported types of sexual harassment by women in male-dominated occupations (Anderson, Westneat, & Reed, 2005; Griffith, Roberts, & Wakeham, 2016; Lonsway et al., 2013; Martin, 1978),

and the majority of harassment incidences are perpetrated by coworkers and supervisors (Morris, 1996; Pogrebin & Poole, 1997; Rabe-Hemp, 2008; Seklecki & Paynich, 2007). In the trucking industry, a driver's dispatcher would be considered their direct supervisor.

Organizational antecedents, or risk factors, may put females at greater risk for sexual harassment while at work. Antecedents that contribute to sexual harassment in the general workplace include: having greater control over one's job (being able to say when and how a task is accomplished), job insecurity (concern about the continuation or existence of a job), skewed gender ratios (more of one gender than another), traditionally masculine jobs (e.g., those with physically challenging tasks) performed by females, the presence of sexist attitudes and behaviors tolerated by management, the absence of knowledge about formal company sexual harassment policies, and poor peer relationships (Berdahl, 2007a; Berdahl, 2007b; Chamberlain, Crowley, Tope, & Hodson, 2008; Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997; Fitzgerald, Swan, & Fischer, 1995; Gutek & Morach, 1982; Vogt, Bruce, Street, & Stafford, 2007). In addition to these organizational antecedents of sexual harassment in general workplaces, demographic characteristics are associated with sexual harassment. Younger female workers are subjected to sexual harassment more often than older ones (Jackson & Newman, 2004; Lafontaine & Tredean, 1986). However, older female workers may be more likely to recognize harassing behaviors as they become increasingly aware of sexist attitudes and, as they are often in supervisory positions where they feel they can manage the issue themselves, may be less likely to report incidences to human resources (Blackstone, Houle, & Uggen, 2014; Reese & Lindenberg, 2005). Minority female workers are at greater risk for sexual harassment, particularly gender harassment (Berdahl & Moore,

2006; Kabat-Farr & Cortina, 2012). Female workers in general workplaces who earn higher incomes and have been at their jobs longer (tenure) may be more likely to be sexually harassed as they may be threatening to men (De Coster, Estes, & Mueller, 1999; Jackson & Newman, 2004).

There has been ample research identifying antecedents to sexual harassment in general workplaces of academia and the federal government (Cortina, Swan, Fitzgerald, & Waldo, 1998; Fitzgerald et al., 1988; Jackson & Newman, 2004; Tinkler & Zhao, 2020). However, there is minimal research on antecedents of sexual harassment in the male-dominated occupations of law enforcement, firefighting, and construction (Goldenhar, Swanson, Hurrell Jr, Ruder, & Deddens, 1998; Hulett et al., 2008; Pogrebin & Poole, 1997; Somvadee & Morash, 2008), and no research specifically on the organizational antecedents of sexual harassment among females in the trucking industry. Rather, studies of female truck drivers have included violence in the workplace in the context of health and truck driving, not specific to sexual harassment on the job (Abrams, Schultz, & Wylie, 1997; Anderson, 2004; Heaton, Browning, & Anderson, 2008; Jensen & Dahl, 2009; Reed & Cronin, 2003; Rodriguez, Targa, & Belzer, 2006).

Purpose and Aims

The purpose of this study was to determine the relationships between perceived organizational antecedents and sexual harassment in a sample of female truck drivers. The specific aims were to: 1) examine the relationships between perceived organizational antecedents, demographic variables, and sexual harassment; and 2) determine associations among job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure. We hypothesized that female

truck drivers who report lower job control and a positive workplace culture will be less likely to report incidences of sexual harassment in the workplace (Aim 2).

Methods

Study Design and Participants

A cross-sectional, non-experimental design was used to examine the associations between organizational antecedents that may put female truck drivers at risk for sexual harassment in the workplace and self-reported sexually harassing behaviors. Female truck drivers ($N = 266$) were recruited online via women in trucking Facebook pages and other media channels and invited to complete an online, anonymous 48-item survey. Inclusion criteria to participate in the study included: being female, being at least 21 years of age, holding a class A Commercial Driver's License (CDL-A), and having a minimum of 3 months driving experience as a truck driver. Data collection occurred from August 2019 through January 2020. Institutional Review Board approval was obtained from the University of Kentucky. Estimated power calculations using the *a priori* sample size for multiple regression calculator (Cohen, 1988; Soper, 2019) using up to 16 predictor variables and assuming a significance level of 0.05, identified a minimal sample size of 206 to achieve power of .80, with an expected effect size of 0.1.

Measures

Sexual harassment was measured utilizing the Sexual Experiences Questionnaire-Workplace (SEQ-W) (Fitzgerald et al., 1988). The Sexual Harassment Organizational Antecedent (SHOA) scale and its subscales of job control and workplace culture measured the perceived organizational antecedents. Demographic variables and job-related variables specific to truck driving. (e.g., residence, driving status, owner status,

and nights away from home pre month) are described in **Table 4.1.** Age, race, ethnicity, income, and tenure were control variables for this study.

Sexual Experiences Questionnaire-Workplace (SEQ-W)

The original SEQ was developed to determine frequency and prevalence of the types of sexual harassment that both males and females may experience in the university setting (Fitzgerald et al., 1988). It was based on five dimensions of sexual harassment (gender harassment, seductive behavior, sexual bribery, sexual coercion, and sexual assault) (Till, 1980). The original version of the SEQ contained 28 questions. Twenty-seven questions measured respondents' experiences with sexual harassment (i.e., have you ever been…) without using the words "sexual harassment" to avoid bias, and one question was a criterion item that asked the respondent if they had ever been sexually harassed (yes/no). For the 27 questions, there were 5 dimensions of sexual harassment measured on a 3-point Likert-type scale: 1-never, 2-once, 3-more than once. Total scores ranged from 3 to 81. The higher the score the more an individual had experienced behaviors associated with sexual harassment. Cronbach's alpha of the original 28 item scale was .92. Test-retest stability coefficient was .86 over a 2-week period with a subsample of 46 graduate students. Validity was confirmed through item-criterion correlation. The SEQ2, a modified version of the SEQ used the same scaling method, contained 33 items and had a Cronbach's alpha of .86 (Fitzgerald et al., 1988). However, factor analysis of the SEQ2 identified a three-factor model (gender harassment, unwanted sexual attention and sexual coercion) compared to the original 5 dimensions. The three-factor model has been used in subsequent versions of the SEQ.

The SEQ-W, used for the study reported here, is a revised version of the SEQ2 designed to measure sexual harassment in the workplace. The SEQ-W measures three dimensions of sexual harassment: gender harassment, unwanted sexual attention, and sexual coercion (Fitzgerald et al., 1988). Initially, a 54-item revised version of the SEQ (SEQ-R) was pilot tested with a sample of 150 female graduate students using a 5-point Likert-type scale (1 [never] to 5 [often]) which has been utilized in subsequent versions (Cortina, 2001; Glomb et al., 1997; Schneider, Swan, & Fitzgerald, 1997; Stark, Chernyshenko, Lancaster, Drasgow, & Fitzgerald, 2002). The Cronbach's alpha for the 54-item SEQ-R was .89. Following minor edits of the revised scale, researchers decreased the survey to 20 items (Fitzgerald, Gelfand, & Drasgow, 1995). One additional item was removed as it met the legal definition of rape and a second item was removed due to limited variability. The revised scale (SEQ-W) contained 18 items; 17 items identifying behaviors associated with sexual harassment and the criterion item. (Fitzgerald, Gelfand, et al., 1995). Total scores for the SEQ-W ranged from 17 to 85. In a sample of 1,156 employees (n = 448 females) from a large west coast utility company, the goodness of fit index was .98 (Fitzgerald et al., 1988). The Cronbach's alpha of the SEQ-W was .95 in the sample of 236 female truck drivers for the study reported here. In addition, item-criterion correlation was confirmed in this sample.

Sexual Harassment Organizational Antecedent Scale

The 15-item Sexual Harassment Organizational Antecedent (SHOA) scale was an author-developed instrument based on the Sexual Harassment in Organizational Context Model (Chamberlain et al., 2008) to measure the organizational antecedents associated with sexual harassment in male-dominated workplaces. The 15 initial survey items on a

5-point Likert scale measured three theoretical constructs: worker power (the degree of control a worker has over their job; 8 items), workplace culture (the attitudes, beliefs, behavioral expectations, and interpersonal dynamics of a workplace; 3 items), and gender context (the gender dynamics and coworker interactions within a workplace; 4 items). Total scores for the worker power construct ranged from 8 to 40 with higher scores indicating more control over the working environment. Total scores for the workplace culture construct ranged from 3 to 15 with higher scores indicating a more positive workplace culture. Total scores for gender context ranged from 4 to 20 with higher scores indicating more women were treated as equals. The Cronbach's alpha of the overall 15-item scale was .83. Primary component analysis revealed four constructs instead of three: job control (5 items), workplace culture (6 items), formal grievance policies (2 items), and peer relationships (2 items). Constructs three and four were not subjected to further testing and were not included as subscales in this analysis as each only contained two items.

Based on the initial psychometric analysis, the SHOA scale used for the study reported here had two subscales**:** job control and workplace culture**.** Job control (5 items) was defined as the amount of control one had over their working environment (e.g., breaks, length of time to get the job done, control over choosing one's loads or routes). Items assessed the amount of control a driver had over when to take their 34-hour restart, where to take their restart, when to take their 30-minute break, the loads they were given or offered, and over planning their routes. Response options ranged from 1 (no control at all) to 5 (complete control). Total scores for job control ranged from 5 to 20 with higher

scores indicating more control over the work environment. The Cronbach's alpha for the job control subscale for this sample of female truck drivers was .80.

Workplace culture subscale (6 items) was defined as the interpersonal dynamics and behavior expectations related to a job. It measured job security, dispatcher conflict, physicality, job and pay equality, and job take-over. Job security was the likelihood the participant will maintain consistent employment. Response options ranged from 1 (not confident at all) to 5 (very confident). Dispatcher conflict was the degree of conflict between the dispatcher and participant. Response options ranged from 1 (constant) to 5 (never). Physicality was the amount of physical strength needed to accomplish a task (e.g., loading and unloading a trailer). Response options ranged from 1 (easy) to 5 (brutal). Job and pay equality reflected whether female drivers thought pay and job opportunities were the same for men and women. Response options ranged from 1 (never) to 5 (always). Lastly, job takeover was the extent that female drivers thought men viewed them as threats to take over jobs traditionally held by men. Response options ranged from 1 (completely concerned) to 5 (not concerned at all). Total scores for workplace culture ranged from 6 to 30 with higher scores indicating more positive workplace culture. The Cronbach's alpha for the workplace culture subscale for this sample of female truck drivers was .76.

Control variables

Age, race, ethnicity, income, and job tenure served as control variables for this study. Age was measured by asking the respondent what year they were born. The responses were recoded to age in years. Race was measured by asking, "what race do you identify with?" (White, Black or African American, American Indian/Alaskan Native,

Asian, Native Hawaiian or Other Pacific Islander). Race was recoded to a dichotomous variable (1 – white; 2 – minority). Ethnicity was determined by asking, "what ethnicity do you identify with?" It was measured based on United States Census Bureau categories (1 – Not Hispanic/Latino, 2 – Hispanic/Latino). Yearly income was measured using categories from 1 (less than $19,999) to 5 ($80,000 or greater). Tenure was measured by asking the respondent how long they had been a truck driver (in months and years).

Other demographic and job-related variables

Education level was determined by asking the respondent their highest level of education, from 1 (less than high school) to 5 (masters or doctoral education). Participants were asked to identify their primary state of residence, and we categorized the states into the four regions of the United States (United States Department of Commerce, n.d.) and Canada (Northwest, Midwest, South, West, Canada). Driving status was determined by asking the respondent to identify their driving status (1 – solo driver, 2 – team driver with known person [friend, or significant other], 3 – team driver with unknown person [company appointed partner]). Driving status was categorized as a dichotomous variable (1 – solo, 2 – team driver). Respondents were asked to identify their owner status (1 – owner operator, 2 – company driver) and how many nights per month they spent away from home, from 1 (four or fewer) to 5 (20 or more).

Procedures

We recruited female truck drivers via social media, email, online newsletters, and word of mouth to complete the 48-item online survey. We invited the Chief Executive Officers (CEOs) of the Women in Trucking (WIT) and the Real Women in Trucking (RWIT) organizations to post the IRB-approved flier and online link to the anonymous

survey. We also shared the flier and link to the survey with one of the hosts of the Road Dog Radio show and the editor of OverDrive magazine. After meeting inclusion criteria via the online screening survey (*n* = 266), participants were asked to complete the anonymous, online survey, requiring approximately 20 minutes to complete. Thirty participants completed less than 75% of the survey items, and they did not report demographic data. There was no identified pattern with missing responses. The final sample for this analysis was 236 participants.

Data Analysis

Statistical analysis was conducted using IBM Statistical Package for Social Science, version 26 (SPSS 26.0). Study variables and demographic characteristics were summarized utilizing means and standard deviations (continuous variables) and frequency distributions (categorical variables). Interval level correlations utilizing Pearson r were conducted to evaluate the relationship between the Sexual Harassment Organizational Antecedent (SHOA) scale and its subscales, job control and workplace culture; demographic and job-related variables, and SEQ-W. ANOVA or independent T-tests were used to assess bivariate associations between additional demographics (e.g., education level) and variables specific to truck driving (e.g., state of residence, driving status, nights away from home per month, and owner status). To test the hypothesis, multiple linear regression evaluated the strength of associations among the multiple variables.

Prior to multiple linear regression analysis, examination of test assumptions supported the adequacy of the data for testing. Missing values across all variables were less than 0.03%, thus it was not necessary to use mean or imputed substitution. The

scores on the two subscales of the SHOA scale were included in the multiple linear regression analysis. With the full SHOA scale, the variation inflation factor (VIF) was greater than 10 indicating a high correlation with other independent variables. With only the two SHOA subscales, the VIF was less than four, indicating lack of multicollinearity.

Results

Sample Characteristics

The mean age of the female drivers in this sample ($N = 236$) was 50.48 $\pm$ 10.39 years. The majority were white, non-Hispanic (94%) who earned more than $60,000 per year (57.1%), drove solo (76%), were employed by versus being leased to a company (79%), and spent 15 or more days away from home each month (63%). The mean years of truck driving experience (tenure) was 14.95 $\pm$ 11.65 years. Over three fourths had at least some college or above (79%) and almost half (46%) lived in the Southern region of the United States (**Tables 4.2 and 4.3)**.

The mean SHOA scale score was 54.80 $\pm$ 9.34. The mean job control subscale score was 17.66 $\pm$ 4.66. The mean workplace culture subscale score was 25.76 $\pm$ 4.38. The mean SEQ-W score was 30.87 $\pm$ 12.78 (**Table 4.3**). Nearly half (46%) of participants indicated they had been sexually harassed. It is unknown whether a complaint was filed in these cases. However, nearly all participants (92.1%) reported they had experienced at least one of the behaviors associated with sexual harassment.

Bivariate Analysis (Aim 1)

Tables 4.4 and 4.5 present findings from the bivariate analysis of sexual harassment scores by independent and control variables. There were significant negative correlations between the SHOA scale total score, the subscale scores of job control and

workplace culture and sexual harassment total scores (-.52, -.32 and -.60, respectively). The lower the job control and workplace culture scores, the higher the reported incidences of sexual harassment. In addition, age, was negatively correlated with the SEQ-W score (-.25). Older female workers reported fewer incidences of sexual harassment. A one-way analysis of variance (ANOVA) indicated a significant relationship between nights away from home per month (F [4, 230] = 2.53, p = .04) and sexual harassment. However, despite statistical significance, the mean scores between groups were small (eta squared = .04). Post hoc comparisons using Tukey HSD indicated no significant differences between groups. An independent T-test indicated there was a significant difference between ethnic groups (p = .01) in reports of sexual harassment. Minority female truck drivers reported more sexual harassment than non-minority truck drivers. The SHOA scale total score was highly correlated with both job control and workplace culture subscales (.81 and .82, respectively).

Multiple Linear Regression Analysis (Aim 2)

The full model was significant (F [12, 203] = 14.23, p = .000), accounting for 43% of the variance in sexual harassment scores (R^2 = .46, adjusted R^2 = .43). Workplace culture was associated with self-reported sexual harassment in female truck drivers, controlling for age, race, ethnicity, income, and tenure. The higher the workplace culture scores, the lower the reported incidences of sexual harassment. Specifically, there was a 1% increase in reported incidences of sexual harassment for every 1.7 (+.19) decrease in workplace culture. Job control was not associated with sexual harassment in the multivariate model. (**Table 4.6)**. In addition to workplace culture, two control variables, age and tenure, were significant contributors to the model. Older female truck drivers and

those who had been a truck driver for a shorter amount of time were associated with fewer reported incidences of sexual harassment. There were some differences among the regions identified in primary place of residence. Compared to the reference region of Canada, two regions (West and Midwest) indicated a greater number of incidences of sexual harassment.

Discussion

The findings from this study indicate an association between workplace culture and sexual harassment in female truck drivers, controlling for age, race, ethnicity, age, and tenure. A more positive workplace culture (e.g., less dispatcher conflict, equal pay and job opportunities) was associated with fewer reported incidences of sexual harassment. This is consistent with prior literature (Goldenhar et al., 1998; Goldenhar, Williams, & Swanson, 2003; Haarr & Morash, 2013; Morris, 1996; Stohr, Mays, Beck, & Kelley, 1998). When female employees report job security, less conflict with supervisors (i.e., dispatchers), less physically demanding jobs, equal pay and job opportunities, and less perceived fear by men that women will take over their jobs in the workplace, they report fewer incidences of sexual harassment (Chamberlain et al., 2008; Dekker & Barling, 1998; Ollo-López & Nuñez, 2018). Further, in environments where unprofessionalism and sexism are prevalent and women perform physically demanding jobs typically performed by men, reported incidences of sexual harassment are higher (Berdahl, 2007a; Gutek & Morach, 1982; O'hare & O'donohue, 1998; Wasti, Bergman, Glomb, & Drasgow, 2000).

For truck drivers, elements of the workplace culture are unique compared to other occupations. Female truck drivers have a mobile workplace that is ever-changing, and

their general working environment is different than that of a static environment (e.g., a workplace with a permanent worksite). For example, drivers may change companies based on pay, home time, or part of the country they service (e.g., a southwest route versus a northeast route) making job security more about the availability of jobs within the trucking industry overall as opposed to job security with a particular company. Indeed, the truck driving industry is projected to grow as demands for goods increase (United States Department of Labor, 2020), and development and enforcement of sexual harassment policies by companies could influence female drivers to remain with their current company when other job opportunities are presented. Another example related to the unique workplace culture in truck driving is the extent and types of contact with their dispatchers. Contact with dispatchers is generally limited to issues with their loads or trucks (e.g., late pick-ups or deliveries or mechanical breakdowns), and requests for home time (e.g., periods of time when they can be at their primary location of residence) or 34-hour restart locations (e.g., specific cities or locations where they can shut their trucks down for 34 hours to restart their hours-of-service clocks). Conflicts may be few in this case, giving drivers a more positive view of their relationship with their dispatcher. However, research is needed to examine attitudes of dispatchers in the trucking industry not just the female truck drivers themselves as the attitudes of dispatchers could influence the development and implementation of policies and training programs meant to combat the problem. Another unique feature of the truck driver's workplace culture is physicality. Physicality is part of the job for all truck drivers, including women. At a minimum, truck drivers are required to dolly landing gear up and down, lift the hoods of their trucks to check fluid levels and engine belts, open, and climb up and down their

tractors and trailers. Depending on the type of trailer they pull (e.g., flatbed, dry van, etc.), physicality of the job may vary. Those who pull flatbeds may be required to cover their loads with heavy tarps or strap loads down using large ratchets attached to the trailer using maximum physical effort, while those who pull dry van trailers may be able to drop and hook trailers using minimum physical effort. Unfortunately, the data on the number of women who pull various trailer types (e.g., flatbeds, dry van, etc.) are not available. Future research to identify the types of trailers female drivers pull and the amount of effort required to do their job may help in the development and implementation of training programs and the development of new equipment (e.g., motorized ratchet straps or tarps) to make their jobs less physical. Finally, despite few women in the trucking industry, women may receive the same pay and job opportunities as men in the same jobs, as companies pay based on mileage or a certain percentage of the load. This equal pay and job opportunity situation for female truck drivers may create a more positive workplace culture compared to women in the other male-dominated occupations of law enforcement, firefighting, and construction where pay and raises are typically based on other indicators of job performance.

Although not significant in the multivariate analysis, job control was correlated with sexual harassment. Female truck drivers with limited job control were more likely to report sexual harassment. However, despite the correlation, job control was not associated with sexual harassment when controlling for age, race, ethnicity, income, and tenure. This finding is inconsistent with past literature indicating that as women gained more control in the workplace, they reported more incidences of sexual harassment as men reported that women in these expanded roles may have been seen as threatening and

not taken seriously (Chamberlain et al., 2008; Prokos & Padavic, 2002). The difference between the findings reported here and previous literature may be that truck drivers, including females, are mostly self-reliant in their jobs, and are expected to independently make decisions regarding breaks and routes as part of the job. The only aspect of the job they may not have control over is what loads they can accept or refuse. Some companies utilize 'forced dispatch,' meaning the driver cannot reject an assigned load without the possibility of being terminated. However, drivers have some protection against companies who use "forced dispatch.' Under the Federal Motor Carrier Safety Administration rules (49 CFR Parts 386 and 390), the use of coercion (e.g., forced dispatch) that puts a driver in a position to operate their vehicle in an unsafe manner (e.g., driving over their hours-of-service limits or operating equipment that requires mechanical repair or service) is against the law and could result in large fines for the company (United States Department of Transportation, 2019). The development and implementation of training programs and policies to prevent unsafe vehicle operation may give female drivers additional control over their jobs further reducing incidences of sexual harassment.

The findings from this study indicate that a positive workplace culture has the strongest association with self-reported sexual harassment in a sample of female truck drivers when controlling for age, race, ethnicity, income, and tenure. In general workplaces, job insecurity, supervisor conflict (dispatcher in the case of truck drivers), physically demanding jobs, job equality, and the perceived fear by men that women will take over their jobs are risk factors for sexual harassment. However, for female truck drivers, job security may not be a concern as there is a currently a driver shortage that is

expected to grow to more than 100,000 drivers in the next five years (American Trucking Associations, 2020a). Second, dispatcher conflict is generally minimal as, over time, drivers and dispatchers develop a professional relationship that is built on a healthy rapport (Hunter, 2019) thus decreasing the likelihood of sexual harassment and helping to achieve a more positive workplace culture. Third, for female truck drivers, the physical nature of the job depends on the type of trailer they pull. As in general workplaces, men may perceive women who perform the strenuous physical labor as threatening thus increasing the incidences of sexual harassment. However, women who perform the minimal duties of the job (e.g., equipment checks, opening, closing, and locking trailer doors) may be less likely to be sexually harassed (however, we did not assess job duties in the study reported here). Finally, in trucking, pay and job opportunities are typically not gender based, potentially removing the perceived threat among men that women have more power and may take-over jobs traditionally meant for them, lowering the reported incidences of sexual harassment.

Two control variables, older age and shorter tenure, were also significant findings in the protection of female truck drivers from sexual harassment in the male-dominated occupation of truck driving. Older age as a protection against sexual harassment is consistent with prior literature (Chamberlain et al., 2008; Jackson & Newman, 2004; Lafontaine & Tredean, 1986). The average age of a female truck driver is 42, and because of their age, older female truck drivers may be more likely to label sexual harassing behaviors as sexual harassment but less likely to report it unlike their younger counterparts who may not recognize the behaviors as sexual harassment but may be more likely report the incidences to human resources when the sexual harassment does occur

(Blackstone, Houle, & Uggen, 2014; Reese & Lindenberg, 2005). In addition to older age, shorter tenure in female truck drivers may be protective against sexual harassment. This is inconsistent with prior literature. Longer tenure is associated with fewer incidences of sexual harassment as women who have been in their occupations longer develop more coping strategies (e.g., telling the harasser to stop, accepting or ignoring the behaviors) and take on positions of higher authority (Haarr & Morash, 2013; Lafontaine & Tredean, 1986; Lonsway et al., 2013; Stockdale, 1993). Female truck drivers with shorter tenure may not be exposed to sexually harassing behaviors as they may be initially paired with a male partner during their training period. Past research has shown that having a male sponsor (or partner) or being married is protective against sexual harassment (Haarr & Morash, 2013; Lembright & Riemer, 1982; Texeira, 2002). In addition, truck driving may be a second career for women (Data USA, 2019; Day & Hait, 2019; Trucking Truth, n.d.) contributing to shorter tenure and less exposure to sexually harassing behaviors. Future research needs to include additional measures of tenure (e.g., first or second career, length of time with current company, number of companies for whom they have worked) to examine the possible reasons female drivers with shorter tenure may experience fewer incidences of sexual harassment. This may also aide in the development of new hire policies and training programs aimed at combating sexual harassment.

Two regions (West and Midwest) indicated a greater number of incidences of sexual harassment reported by this sample of female truck drivers, compared to the reference region of Canada. This finding is inconsistent with actual sexual harassment charges filed by female workers with the Equal Employment Opportunity Commission

(EEOC) in 2019. Only one third of the 5,938 charges filed by these women were from the West and Midwest (United States Equal Employment Opportunity Commission, 2021). This inconsistency could reflect the fact that many women who experience sexual harassment may not file charges (Hulett et al., 2008; Lonsway et al., 2013; Texeira, 2002). In addition, the EEOC data are for all female workers, not just those in male-dominated occupations. Further, only 40% of the 10 largest trucking companies in the United States are headquartered in the West and Midwest; 10% are in the Northeast and 50% are in the South (Schulz, 2019).

The sample of female drivers in this study is partly representative of the population of female drivers in the U.S. The average age of female drivers in this study was 50.48 ($\pm$ 10.39) years, compared to 30 to 50 years old in prior studies (Anderson, Westneat, & Reed, 2005; Bernard et al., 2000; Layne, Rogers, & Randolph, 2009). The majority were white, non-Hispanic (94%) who earned more than $60,000 per year (57.1%), drove solo (76%), were employed by versus being leased to a company (79%), and spent 15 or more days away from home each month (63%), similar to other studies of female truck drivers (Anderson, et al., 2005; Bernard et al., 2000; Layne et al., 2009). The mean years of truck driving experience (tenure) was 14.95 ($\pm$ 11.65) years, similar to other studies (Bernard et al., 2000; Layne et al., 2009). Over three fourths had at least some college or above (79%), slightly higher than other studies of female truck drivers (64%) (Anderson et al., 2005).

Lastly, nearly all (92%) of the female truck drivers in this study indicated they had experienced sexually harassing behaviors. However, only 42% indicated they had been sexually harassed when directly asked via the criterion item. This discrepancy in

reporting sexual harassment is consistent with prior literature and may be due to a number of factors: 1) women do not recognize sexual harassment or may not associate the behaviors they experienced with sexual harassment; 2) sexual harassment is not deemed a serious offense by the female, the company, or both; or 3) sexual harassment is accepted as part of the job or is accepted as socially normal behavior (Blackstone, Houle, & Uggen, 2014; Brooks & Perot, 1991; Dey, Korn, & Sax, 1996; Malovich & Stake, 1990; McKinney, 1990). Future research is needed to measure sexual harassment reporting behaviors (e.g., did they report; if yes, what was the result of reporting; if no, why did they not report) to better understand why women underreport incidences of sexual harassment and to develop interventions (e.g., female to female reporting, anonymous reporting) to encourage more accurate reporting of sexual harassment.

Limitations, Strengths, and Recommendations for Future Research

There are several limitations to this study. First, there was the potential for selection bias as this was a convenience sample of truck drivers who responded to an invitation to complete an online survey and all data were self-reported. However, one strength is that the sample reflects a national group of truck drivers who varied in their job experiences. Second, the self-reported responses were based on the female truck drivers' perceptions of their workplace culture and job control. We did not assess the male driver perspective. Future studies with both male and female driver responses are needed to compare perceptions related to job control, workplace culture, other demographic and job-related factors and self-reported incidences of sexual harassment. Third, the sample was predominately White, Non-Hispanic; however, Hispanic/Latino respondents (albeit a small sample size) were more likely than Non-Hispanic female

truck drivers to report sexual harassment on the job. Further research is needed to include a larger sample of minority female truck drivers. In addition, future research is needed to determine the perceptions of Hispanic/Latino female truck drivers related to job control, workplace culture, other demographic and job-related factors and self-reported incidences of sexual harassment. Fourth, we did not measure knowledge of formal grievance policies and internal or external co-worker relationships. Future research is warranted measure these constructs as prior literature shows a relationship between no to low knowledge of formal company grievance policies and poor co-worker relationships and higher reported incidences of sexual harassment (Chamberlain et al., 2008; Fitzgerald et al., 1997; Fitzgerald, Magley, Drasgow, & Waldo, 1998). Fifth, it was not possible to determine if study participants answered the sexual experiences questionnaire based on their current company or based on their experiences within the trucking industry. As the trucking industry has an average turnover rate of 83% (American Trucking Associations, 2020b), future researchers need to discern whether responses are based on current companies or trucking as a whole in order to further understand the risk factors for sexual harassment and implications for policy and procedural changes. Finally, we did not measure the time frame in which female truck drivers' experiences with sexually harassing behaviors took place (e.g., 1 month ago or 10 years ago). Determining the time frame in which female drivers experienced the sexually harassing behaviors may help to further understand the role workplace culture has on reported incidences of sexual harassment, and this may have implications for onboarding and training female truck drivers and dispatchers.

Conclusion

This the first known study to examine the relationship between job control, workplace culture, and sexual harassment in female truck drivers. Studies on sexual harassment in male-dominated occupations like truck driving are limited. Nearly half of this sample of female truck drivers reported previous experience with sexual harassment, and nearly all reported at least one sexually harassing behavior. The findings indicate female drivers who report a more positive workplace culture and greater job control were less likely to report incidences of sexual harassment. When controlling for age, race, ethnicity, income, and tenure, those who reported a positive workplace culture, were older, and reported shorter job tenure as a truck driver were less likely to report incidences of sexual harassment. Job control was not associated with reports of sexual harassment when controlling for demographic and job-related factors. As workplace culture encompasses elements of job security, dispatcher conflict, physicality, equal pay and job opportunities, and the perceived fear by men that women will take over their jobs, future research needs to examine each element (and other features of the workplace culture) to determine the role each has on sexual harassment in female truck drivers in order to explore sexual harassment in depth in this male-dominated occupation (e.g., job security may not be as important as physicality as a risk factor for sexual harassment). In addition, future research needs to examine the policies, practices, and co-worker relationships internal and external to their companies. Female drivers may be sexually harassed by others with whom they come into contact while performing their jobs (e.g., truck stop personal, dock hands at shippers and receivers, drivers inside and outside of their company). Further research as well as policy development and worksite training and

interventions could change the workplace culture and promote job control for female truck drivers to reduce sexual harassment in male-dominated occupations.

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Table 4.1 Measures of Demographic and Job Characteristics

Variable	Unit of Measurement	Question	Response Options
Age	Interval	What year were you born?	
Race	Categorical	What race do you identify with?	1 – White 2 – Black or Africa American 3 – American Indian/Alaskan Native 4 – Asian 5 – Native Hawaiian or Other Pacific Islander
Ethnicity	Categorical	What ethnicity do you identify with?	1 – Not Hispanic/Latino 2 – Hispanic/Latino
Yearly Income	Ordinal	What is your average yearly personal income (pre-tax)?	1 – 0 to $19,000 2 - $20,000 to $39,000 3 - $40,000 to $59,999 4 - $60,000-$79,999 5 - ≥$80,000
Education Level	Categorical	What is your highest level of education?	1 – Less than high school 2 – High school 3 – Some college 4 – College graduate 5 – Masters or doctorate education
Residence	Categorical	What is your primary state of residence?	
Tenure	Interval	How long have you been a truck driver?	____ Year ____ Months
Driving Status	Categorical	What is your driving status?	1 – Solo 2 – Team w/known person 3 – Team w/company appointed person
Owner Status	Categorical	What is your owner status?	1 – Owner Operator 2 – Company Driver
Nights Away	Ordinal	How many nights a month do you spend away from home?	1 - ≤ 4 2 – 5 to 9 3 – 10 to 14 4 – 15 to 19 5 - ≥ 20

Table 4.2 Sample Demographic Characteristics ($N = 236$)

Variable		No.	Frequency (%)
Race	White	215	91.5
	Minority	20	8.5
Ethnicity	Non-Hispanic/Latino	225	96.6
	Hispanic/Latino	8	3.4
Average Yearly Personal Income (pre-tax)	0-$19,999	3	1.3
	$20,000-$39,999	33	14.0
	$40,000-$59,999	64	27.5
	$60,000-$79,999	75	32.2
	≥ $80,000	58	24.9
Education level	< high school	4	1.7
	High school graduate	45	19.2
	Some college	131	56.0
	College graduate	50	21.4
	Master's or Doctorate education	4	1.7
State of Residence	Northeast	20	8.7
	Midwest	53	23.1
	South	106	46.3
	West	43	18.8
	Canada	7	3.1
Driving status	Solo driver	180	76.6
	Team driver	55	23.4
Owner status	Owner operator	51	21.7
	Company driver	184	78.3
Nights away from home per month?	≤ 4	50	21.3
	5 to 9	22	9.4
	10 to 14	14	6.0
	15 to 19	43	18.3
	≥ 20	106	45.1

* = Due to missing data, not all numbers equal 236

Table 4.3 Descriptive Summary of Study Variables and Continuous Demographic Characteristics

Variable	Mean	Standard Deviation	Range	*N*
SEQ-W	30.87	12.78	17 – 77	236
SHOA	54.80	9.34	33 – 75	230
Job Control	17.66	4.66	6 – 25	233
Workplace Culture	24.15	4.14	10 – 30	233
Age (in years)	50.48	10.39	21 – 72	231
Experience (in years)	14.95	11.65	.25 – 53	234

Note: SHOA: Sexual Harassment Organizational Antecedent scale

Table 4.4 Bivariate Correlations among SEQ-W, SHOA, Job Control, Workplace Culture, Age, and Tenure (n = 225)

Variable	1. SEQ-W	2. SHOAS	3. Job Control	4. Workplace Culture	5. Age	6. Tenure
1. SEQ-W	-	-.52**	-.32**	-.60**	-.25**	-.01
2. SHOA	-	-	.81**	.82**	.07	.15*
3. Job Control	-	-	-	.46**	.12	.19**
4. Workplace Culture	-	-	-	-	.06	.08
5. Age	-	-	-	-	-	.48**
6. Tenure	-	-	-	-	-	-

Note: SEQ-W: Sexual Experience Questionnaire-Workplace; SHOA: Sexual Harassment Organizational Antecedent scale
*≤ .05 level; **≤ .01 level

Table 4.5 Bivariate Associations between SEQ-W Scores, Control Variables, Demographic and Other Job-Related Variables

Variable	Mean (SD)	*df*	*S*tatistic	*p*-value	*N*
Race			1.15[b]	.62	235
White	30.81 (±12.65)				
Minority	32.30 (±14.33)				
Ethnicity			8.17[b]	.01	233
Non-Hispanic or Latino	30.46 (±12.25)				
Hispanic or Latino	43.25 (±21.55)				
Income		4, 228	1.81[a]	.13	232
0-$19,999	29.67 (±14.57)				
$20,000-$39,999	34.03 (±13.10)				
$40,000-$59,999	30.70 (±12.09)				
$60,000-$79,999	31.84 (±13.54)				
≥ $80,000	27.26 (±11.55)				
Education Level		4, 229	1.36[a]	.25	233
< high school	32.25 (± 9.74)				
High school graduate	33.44 (±13.78)				
Some college	30.54 (±12.91)				
College graduate	28.26 (±11.04)				
Master's or Doctorate education	38.25 (±13.84)				
State of Residence (per region)		4, 224	.87[a]	.48	228
Northeast	27.55 (±9.90)				
Midwest	31.68 (±11.33)				
South	29.87 (±11.10)				
West	28.15 (±10.29)				
Canada	24.57 (±7.14)				
Driving status			0.18[b]	.07	228
Solo	31.59 (±12.68)				
Team	28.05 (±12.46)				
Owner Status			2.76[b]	.14	235
Owner Operator	28.45 (±11.37)				
Company Driver	31.41 (±13.00)				
Nights Away from Home (per month)		4, 230	2.53[a]	.04	234
≤ 4	31.92 (±1.53)				
5 – 9	28.81 (±10.40)				
10 – 14	24.15 (±12.20)				
15 – 19	31.18 (±10.14)				
≥ 20	27.44 (±10.64)				

Note: SEQ-W: Sexual Experience Questionnaire-Workplace
[a]ANOVA; [b]Independent T-Test

Table 4.6 Multiple Linear Regression to Test Study Hypothesis (n = 216)

	R^2 (Adjusted R^2)	b	$SE\ B$	β	p
Model	.457 (.425)				
Age		-.36	.08	-.29	< .001
Race		.55	2.32	.01	.81
Ethnicity		2.89	3.62	.04	.43
Income		.05	.75	.004	.95
Tenure		.21	.07	.20	.004
Job Control		-.28	.18	-.10	.11
Workplace Culture		-1.75	.18	-.57	< .001
Education Level		-.63	.96	-.04	.51
Residence					
Northeast		1.81	3.81	.04	.64
Midwest		7.83	3.30	.26	.02
South		5.19	3.17	.20	.10
West		9.32	3.41	.28	.007
Canada		1.00	-	-	-
Driving Status		-2.21	1.63	-.07	.18
Owner Status		-1.80	1.86	-.06	.34
Nights Away		.22	.43	.03	.61

CHAPTER 5: Conclusion

Sexual harassment is as prevalent among female truck drivers as it is in other male-dominated workplaces where an estimated 60% of women report being sexually harassed (Hom, Stanley, Spencer-Thomas, & Joiner, 2017; Lonsway, Paynich, & Hall, 2013; Seklecki & Paynich, 2007; Yoder & Aniakudo, 1995). In this dissertation, nearly half of a convenience sample of female truck drivers from all regions of the United States reported being sexually harassed. However, 92% reported experiencing at least one of the behaviors associated with sexual harassment. This discrepancy in self-reporting sexual harassment is consistent with the literature (Lonsway et al., 2013; Seklecki & Paynich, 2007; Somvadee & Morash, 2008).

The purpose of this dissertation was to identify organizational antecedents for workplace sexual harassment in a sample of female truck drivers. Organizational risk factors for workplace sexual harassment have been identified in the male-dominated occupations of law enforcement, firefighting, and construction; however, studies on the sexual harassment of female truck drivers were limited to inclusion within larger studies on general workplace violence and health issues; antecedents (risk factors) for sexual harassment among female truck drivers had not been identified. The following manuscripts were completed as part of this dissertation: 1) a systematic review of the research literature on antecedents that put female workers at risk for sexual harassment and their responses to sexual harassment in select male-dominated occupations in community settings (e.g., protective services, transportation, construction) in the United States and identification of gaps in the research literature (Chapter 2); 2) development and evaluation of the psychometric properties of the 15-item Sexual Harassment

Organizational Antecedent (SHOA) scale to assess the reliability and validity of the instrument to investigate organizational antecedents that may contribute to sexual harassment among female truck drivers (Chapter 3); and 3) an examination of the relationships between perceived organizational antecedents, demographic variables, and sexual harassment; and the associations between job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure (Chapter 4).

The purpose of this final chapter is to synthesize the findings of this dissertation as well as the limitations and strengths of the research. In addition, this chapter discusses implications for occupational health nursing practice and policy development and makes recommendations for future research.

Synthesis of Findings

Chapter Two: Systematic Review

The purpose of the first manuscript was to provide a systematic review of the research literature on antecedents that put female workers at risk for sexual harassment and their responses to sexual harassment in select male-dominated occupations in community settings (e.g., protective services, transportation, and construction) in the United States and identify gaps in the research literature. Antecedents to sexual harassment identified in the literature included organizational culture (physicality of the job, workplace relationships, and harassment remedies) and gender composition (the gender make-up of the workplace that includes male to female ratios, contact between coworkers, and gender related job roles) (Bernard, Bouck, & Young, 2000; Goldenhar, Swanson, Hurrell Jr, Ruder, & Deddens, 1998; Hassell, Archbold, & Stichman, 2011;

Pogrebin & Poole, 1997; Rabe-Hemp, 2008; Texeira, 2002; Yoder & Aniakudo, 1996). Responses to sexual harassment identified in the literature included physical, psychological, and work-related responses (Denissen, 2010; Goldenhar et al., 1998; Hassell et al., 2011; Jahnke et al., 2019; Rosell, Miller, & Barber, 1995; Texeira, 2002). Organizational culture was identified as the primary antecedent while work-related responses were examined more frequently than physical and psychological responses. Research studies on both antecedents and responses were more prominent in law enforcement and firefighting as opposed to truck driving and construction. Identified gaps in the literature included: few research studies on how gender composition impacts sexual harassment in law enforcement, firefighting, and construction, lack of standard measures or models guiding the research in law enforcement, firefighting, and construction, lack of antecedent studies in female truck drivers, and lack of physical and psychological response studies in female truck drivers. Work-related responses in female truck drivers were studied in the context of reasons why women do not report incidences of workplace violence. As this is the first systematic review to specifically look at antecedents and responses to sexual harassment in male-dominated occupations, it gives us a better understanding of known risk factors that contribute to sexual harassment in male-dominated occupations, as well as responses to sexual harassment in these occupations. Understanding antecedents and responses could provide a starting point for developing effective policies and education within individual organizations and help to develop interventions to mitigate the risk factors and responses related to sexual harassment.

Chapter Three: Instrument Development and Psychometric Evaluation

The purpose of the second manuscript was to develop and evaluate the psychometric properties of the 15-item Sexual Harassment Organizational Antecedent (SHOA) scale to assess the reliability and validity of the instrument to investigate organizational antecedents that may contribute to sexual harassment among female truck drivers. The Sexual Harassment in Organizational Context Model (Chamberlain, Crowley, Tope, & Hodson, 2008) served as the model for the development of the SHOA scale to assess worker power (i.e., the amount of control or power workers have over their work environments or workplaces), workplace culture (i.e., the interpersonal dynamics within a workplace and the behavior expectations related to job tasks) and gender context (i.e., the gender dynamics and coworker interactions within a workplace). Three reviewers with expertise in occupational and public health reviewed the initial 15-item instrument. The overall Fleiss Kappa was .42, indicating low to moderate agreement among reviewers. Revisions to the instrument were made based on reviewer feedback to ensure the instrument captured the constructs they were intended to measure. Cross-sectional survey data were collected from 236 female truck drivers. The Cronbach's alpha for the overall 15-item SHOA scale was 0.83, indicating strong internal consistency. The PCA identified four constructs as opposed to the initial three theoretical categories. Post hoc analysis revealed acceptable internal consistency for job control (construct 1; 5 items) and workplace culture (construct 2; 6 items) (α = .80, and .76 respectively). Formal grievance procedures (construct 3; 2 items) and peer relationships (construct 4; 2 items) were not subjected to further analysis as each only contained two items. Overall, the 15-item SHOA scale and its two subscales of job control and

workplace culture were supported as reliable and valid measures of organizational antecedents of sexual harassment in female truck drivers.

Chapter Four: Main Findings

The purpose of the third manuscript was to examine the relationships between perceived organizational antecedents, demographic variables, and sexual harassment; and to determine associations between job control, workplace culture, and self-reported sexual harassment, controlling for age, race, ethnicity, income, and tenure. Cross-sectional data were collected from a convenience sample of 236 female truck drivers who were at least 21 years of age, held a Class A Commercial Driver's License (CDL-A), and had a minimum of 3-months truck driving experience. They were recruited via social media, email, online newsletters, and word of mouth and invited to complete an anonymous 48-item online survey to evaluate perceptions of organizational antecedents that may put female truck drivers at risk for sexual harassment, behaviors they have experienced associated with sexual harassment, and demographic and job characteristics. Findings revealed significant bivariate correlations between the SHOA scale, the subscales of job control and workplace culture, and sexual harassment (-.52, -.32, and -.60, respectively). The lower the scores, the higher the self-reported incidences of sexual harassment. The control variable, age, was also negatively correlated with sexual harassment scores (-.25). The older the female driver, the fewer the self-reported incidences of sexual harassment. Ethnicity had a significant bivariate relationship with sexual harassment ($p = .01$). Minority female truck drivers were more likely to self-report incidences of sexual harassment. Nights away from home had a significant relationship with sexual harassment, however, post hoc analysis indicated no statistically significant

difference between groups (e.g., less than 4 nights away, 10-14 nights away, 20 or more nights away). The multivariate model accounted for 43% of the variance in sexual harassment scores (R^2 = .46, adjusted R^2 = .43). Workplace culture had the strongest association with sexual harassment, controlling for age, race, ethnicity, income and tenure. The higher the workplace culture scores, the lower the self-reported incidences of sexual harassment. This was similar to what was identified in the review of literature; organizational culture was identified as the primary antecedent for sexual harassment. Job control did not have a significant association with sexual harassment. However, the two control variables of age and tenure were significant contributors to the model. Older female drivers and those with shorter tenure reported fewer incidences of sexual harassment while on the job. In addition, two regions (West and Midwest) indicated a greater number of incidences of sexual harassment, compared to the reference region of Canada. two regions identified in primary place of residence were significantly associated with sexual harassment. Women who lived in the West and Midwest reported increased incidences of sexual harassment in the workplace. This is the first known study to examine the relationship between job control, workplace culture, and sexual harassment in female truck drivers. The findings from this study give insight into the need for development of effective training programs, reporting mechanisms, and prevention programs to reduce the reported incidences of sexual harassment in the workplace.

Limitations and Strengths

Selection bias was a limitation to this study as this was a convenience sample of female truck drivers who responded to an invitation to complete an online survey and all data were self-reported. However, one strength is that the sample reflects a national group

of female truck drivers who varied in their job experiences. As the psychometric evaluation and main findings paper utilized the same convenience sample of female truck drivers, there were four limitations related to the study design. First, the convenience sample of female truck drivers was predominately White, Non-Hispanic. Despite the small sample of Hispanic female truck drivers, we found a significant bivariate correlation between ethnicity and self-reported sexual harassment in this study. Future testing is needed with female workers of varying racial and ethnic backgrounds to provide further evidence of reliability and validity and determine the role race and ethnicity have on perceptions of job control, workplace culture, other demographic and job-related factors and self-reported incidences of sexual harassment. Second, it was not possible to determine if participants answered the items based on their current company or a company where they were previously employed. As trucking companies have a turnover rate ranging from 49% to 140% (American Trucking Associations, 2020; Watson, 2011), understanding the dates of current and previous employment may give us further insight into the elements of workplace culture and the role it plays in sexual harassment. This information could help explain the context and trajectory of sexually harassing behaviors to inform the development or revision of policies on sexual harassment. A strength of this study was that we measured job tenure, and it was associated with sexual harassment, implying a need for a more in-depth look at job retention and turnover as it relates to sexual harassment. Third, formal grievance procedures and peer relationships (internal and external) were not considered in the analysis of antecedents of sexual harassment in this dissertation. However, the psychometric evaluation demonstrated that formal grievance procedures and peer

relationships may be important constructs in understanding sexual harassment in female truck drivers. Measures of formal grievance procedures and internal and external peer relationships need to be developed and tested to understand additional risk factors and to determine the relationship these constructs may have on self-reported incidences of sexual harassment in female truck drivers. Finally, the development of the SHOA scale did not take into consideration female drivers with less than 3 months driving experience. In the future, including female drivers with less than 3-months experience may give us further insight into workplace culture as it may help us understand what occurs during training, may contribute to what we already know about organizational antecedents, or may provide additional antecedents we had not considered (e.g., testing/driving ability, length of time it took to get a CDL, sex of the trainer, length of training time). Also, as most female trainees are placed with male trainers, there is the possibility of a negative workplace culture and potential for an increase in incidences of sexual harassment. However, the multivariate analysis indicated shorter tenure may be protective against sexual harassment.

Implications for Occupational Health Nursing Practice and Policy Development

Understanding the risk factors of sexual harassment in the workplace is crucial to minimizing the problem for female truck drivers. The development of effective training programs to address risk factors and aide in identifying sexually harassing behaviors can be integrated into Commercial Driver Licensing (CDL) curricula and adopted by companies during orientation. This may reduce the prevalence of sexual harassment in the workplace experienced by female drivers. In addition, companies need to develop effective reporting mechanisms and implement prevention programs (e.g., counseling

services) to incentivize reporting and minimize sexual harassment in the truck driving industry.

Development and implementation of voluntary and public policies to prevent or reduce sexual harassment in truck driving need to occur at both the company level and across the trucking industry as female drivers come into contact with others outside their company on a daily basis (e.g., dock workers, truck stop personnel, and drivers from other companies). Employers and the truck industry need to consider a broad range of policies including training, formal grievance procedures, reporting, enforcement, and compliance. Prior to policy development, employers could consult with the Chief Executive Officers from professional trucking organizations (e.g., American Trucking Association, Women in Trucking) and their female drivers as some carriers have regulations but they are not industry wide. Given there are not best practice documents for minimizing sexual harassment in truck driving, the development of white papers, policy briefs, or other best practice documents would be critical to building capacity for policy development and best practices to minimize sexual harassment.

This dissertation focused solely on female drivers' perceptions of job control, workplace culture, other demographic and job-related factors, and self-reported incidences of sexual harassment. Future studies will need to include both the male and female perspective to better understand why sexual harassment may occur in this occupation. Finally, this dissertation focused solely on the antecedents to sexual harassment, not the female truck drivers' responses to their experiences. Future studies are needed to determine the physical, psychological, and work-related responses female drivers experience as the result of sexual harassment in the workplace.

In conclusion, the findings from this dissertation add to the body of knowledge regarding organizational antecedents that may contribute to sexual harassment of female truck drivers. Consistent with the literature related to other male-dominated workplaces, workplace culture was the primary antecedent to self-reported incidences of sexual harassment (Hollerbach et al., 2017; Murphy, Beaton, Cain, & Pike, 1995; Somvadee & Morash, 2008; Texeira, 2002). This dissertation supports the need for additional research (e.g., formal grievance policies, peer relationships, male perspective) and further development of the Sexual Harassment Organizational Antecedent (SHOA) scale. Understanding why sexual harassment occurs could provide a starting block to integrating effective policies and education within individual organizations and help to develop interventions to mitigate the negative responses related to sexual harassment.

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Vita

Education:

Institution	Degree	Date Conferred	Field of Study
University of St. Francis-Fort Wayne	BS in Nursing	1996, May	Nursing-BSN Program
Western Kentucky University	MS in Nursing	2012, December	Nursing/Nurse Educator

Professional Experience:

Dates	Institution and Location	Academic Position
January 2019-present	Western Kentucky University, Bowling Green, KY	Instructor Pre-licensure BSN program
August 2014-2019	Western Kentucky University, Bowling Green, KY	Instructor RN to BSN program
August 2011-July 2014	Western Kentucky University, Bowling Green, KY	Instructor Pre-licensure BSN program
August 2010-December 2010	Western Kentucky University, Bowling Green, KY	Graduate Assistant
August 2003-December 2003	Kentucky Community and Technical College Services (KCTCS), Glasgow, KY	Clinical Instructor

Dates	Institution and Location	Clinical Position
June 2015-present	Guardian Medical/NCM Motorsports Park Bowling Green, KY	Track Nurse, Infield Care Center Director
May 2009-present	Greenview Regional Hospital Bowling Green, KY	Staff Nurse (Emergency Department); House Supervisor
July 2015-September 2020	Barren Metcalfe Emergency Medical Service Glasgow, KY	Emergency Medical Technician
November 2018-January 2019	Barren-Metcalfe Emergency Medical Service Glasgow, KY	QA/QI Coordinator
May 2017-September 2017	Guardian Medical/Kentucky Motor Speedway Sparta, KY	Infield care center nurse for NASCAR testing and events in July and September

September 2000-November 2008	Greenview Regional Hospital Bowling Green, KY	Staff Nurse (Emergency Department)
April 2010-December 2011	TJ Sampson Community Hospital, Glasgow, KY	Staff Nurse (Emergency Department)
March 2006-March 2008	Air-Evac, Incorporated, West Plains, MO	Flight Nurse
2005-2006	Metcalfe Health Care Center, Edmonton, KY	Staff Nurse; Weekend Shift Supervisor
2004-2005	Westlake Regional Hospital, Columba, KY	Staff Nurse (Monitored Bed Unit; Emergency Department)
2003-2004	NHC Healthcare, Glasgow, KY	Shift Supervisor
1998-1999	Whitley County Health Department, Columbia City, IN	Well Child Clinic Co-coordinator
May 1997- July 2000	Parkview Health System, Fort Wayne, IN	Staff Nurse (Critical Care Unit at Whitley Memorial; Emergency Department at Parkview)

Honors and Awards:

- 2014-2021: National Institute for Occupational Safety and Health (NIOSH) trainee in the Occupational/Environmental Health Nursing Core (OEHN) of the Central Appalachian Regional Education and Research Center (CARERC)
- October, 2018: Most Improved Firefighter, East Barren Volunteer Fire Department
- January, 2018: Volunteer Firefighter Rookie of the Year, Temple Hill Volunteer Fire Department
- April, 2015: Excellence in Nursing Practice Award, Sigma Theta Tau-Kappa Theta Chapter

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