

Perceptions and Motivations to the Utilization of Preventive Care by Labor Union

Members

by

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The underutilization of preventive exams by labor union members in the transportation and manufacturing industries, coupled with workplace barriers including long hours, unhealthy diets, and lack of physical activity, put this population at high risk for chronic disease development. Highmark insures over 17 million unionized workers and their families; taking a proactive approach to healthcare is of utmost importance to employers in order to retain a productive workforce with less turnover and decrease healthcare costs. The purpose of this inquiry project was to conduct a needs assessment to understand the perceptions of and motivators to preventive care utilization by labor union members. The participants are n=24 labor union members' ages 18 and older from manufacturing and transportation labor unions in western and northeastern Pennsylvania. A survey was promoted via email, word of mouth at a labor union trustee meeting, and a mailed communication. The survey link was posted to a labor union Fund's website. Descriptive statistics (frequencies) were calculated to summarize participant demographics, health status, and preventive care utilization data for the total group. Results from the adapted MAPP Care Utilization Survey were calculated as frequencies for each individual item. Analyses were run via pivot tables in Excel. Results indicated that preventive care utilization differed by demographics including gender, age, occupation, and education level. The majority of participants received at least one preventive exam within the last 12 months; however, descriptively, male laborers used preventive care less frequently than those in other occupations. The health status of

participants was poor and over half reported having a chronic disease. Participants had a positive attitude toward health care and their general practitioner. The top barriers to accessing preventive care were time (95.7%, n=22) and knowledge of health benefits (39.1%; n=9). The top facilitators to accessing preventive care were support from family/spouse (95.5%; n=21) and possessing health insurance (95.5%; n=21). There were varying levels of workplace support and accommodations to access preventive care within labor unions. Implications for practice include changes to workplace policies in labor unions to promote job flexibility, increased support and modeling from Fund managers and trustees, incentivize employees to participate in wellness and chronic disease management programs, and offering employer-sponsored health plans to employees.

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Preface

To the many clients and members I have had the pleasure of working with over the past 6 years in the health insurance and wellness industry, thank you for making your health a priority and trusting me to be a part of your story. To my colleagues and friends at Highmark and Gateway Health who have helped to shape this work, thank you for your constant commitment to our members and for the opportunity to learn from and collaborate with you.

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1.0 Introduction

1.1 Problem Area

Preventive care in the United States can be defined as routine checkups, vaccinations, routine tests, and visits with a primary care physician (PublicHealth.org, 2020). Preventive care can be utilized to prevent illness, diseases, and health problems by detecting them in earlier stages (Centers for Disease Control and Prevention, 2017). The Centers for Disease Control and Prevention (CDC) has estimated that if everyone in the United States received preventive care, over 100,000 lives would be saved per year (CDC, 2017). Preventive care uncovers the hidden risk of chronic disease within a population, which helps to improve health outcomes by diagnosing conditions in earlier stages, such as cancer, making them more treatable and less expensive.

Many preventive exams offered through the Affordable Care Act (ACA) are covered at no cost, which should promote preventive care utilization (U.S. Department of Health & Human Services, 2017). Yet, while preventive exams can save lives, Vaidya (2012) found that the utilization of preventive exams in the United States is low despite the cost of healthcare rising to about \$2.3 trillion. The Centers for Disease Control and Prevention (2009) found that fewer than one in four adults aged 50 to 64 received preventive services. Research indicates that young males tend to utilize preventive care services less frequently than women (Brotons et al., 2012). Additionally, Hughes et al. (2010) found that adults aged 18 to 64 years old who were employed and insured, did not meet clinical recommendations for preventive care (8.5% for cervical cancer screenings and 73.9% for flu vaccinations).

Preventive care utilization is low in labor union members. Despite some workplaces being viewed as barriers to healthy eating and physical activity, workplace health promotion programs can be effective in engaging populations at risk for obesity and related chronic illnesses and impacting costs resulting from absenteeism (Heinen & Darling, 2009). However, labor industries may experience different barriers and facilitators to accessing preventive care based on their unique working conditions and thus should be explored further. According to Malinowski et al. (2015), the structure and hierarchy of the workplace impede or support healthy initiatives of unions, so labor management should be involved in decision-making. Stakeholder buy-in is key to the success of union preventive care utilization. However Greenfield et al. (2016) found that despite initiatives designed to improve workplace health conditions, they were not always aligned with working conditions.

1.2 Problem of Practice

The unique circumstances present in labor industries highlight barriers and facilitators to preventive care utilization. Many labor union members work as apprentices for unions and remain employed by the company for much of their career; as such, retaining healthy employees and minimizing healthcare costs are in the best interest of both the employee and employer. Highmark insures over 17 million unionized workers and their families, more than any other health insurance company in the U.S. (Blue Cross Blue Shield Association, 2019). While many labor unions offer their employees comprehensive health benefits, preventive care services are underutilized. According to the U.S. Bureau of Labor Statistics (2019), 84% of labor union members participated in an employer-sponsored healthcare plan.

Additionally, chronic disease prevalence is high in manufacturing and trucking occupations due to work related barriers (CDC, 2017). The Affordable Care Act requires that all employers offer a preventive schedule with age- and gender-specific preventive exams, and screenings are covered at no cost to the employee. However, questions remain regarding key barriers to and motivators of accessing preventive care in labor union members. Such information could improve preventive care utilization, increase knowledge of healthcare benefits, and decrease healthcare costs within Funds.

2.0 Literature Review

2.1 What is Preventive Care?

Preventive care in the United States can be defined as routine checkups, vaccinations, chronic condition screenings, routine tests and visits with a primary care physician (PCP) (PublicHealth.org, 2018). The Centers for Disease Control and Prevention (CDC) (2017) also support this definition of preventive care in addition to patient counseling which helps to prevent illness, diseases, and health problems by detecting them in earlier stages. Preventive care has been shown to increase life expectancy and detect health problems in earlier stages, which can improve health outcomes and decrease healthcare costs. According to the CDC, 7 out of 10 deaths are caused by chronic disease and about half of the United States population has been diagnosed with a preventable chronic illness such as diabetes, cardiovascular disease, and obesity (Centers for Disease Control and Prevention, 2017). The CDC (2017) has reported that if everyone in the United States received preventive care, over 100,000 lives would be saved per year. Unfortunately fewer than one in four adults aged 50 to 64 received a core set of these preventive services (Centers for Disease Control & Prevention, 2009). Additionally those who were employed and insured did not meet clinical recommendations for preventive care (Hughes et al. 2010).

Preventive care screenings can be cost effective, particularly for preventable diseases or chronic illnesses. Cancers such as colorectal cancer, which is one of the highest ranked preventive services with the lowest cost to administer screenings for adults aged 50 and older (Centers for Disease Control & Prevention, 2009). Similarly, the National Center for Health Statistics (2016) and the Organisation for Economic Co-Operation and Development (2017) (as cited by Sabbath

et al. 2018) found that in 2014 Americans consumed over \$9500 in healthcare, which translated to \$3 trillion, yet only 3% of health care expenditures were spent on preventive care. From a financial perspective, a preventive approach to healthcare can encourage patients to seek care from their primary care physician and avoid Emergency Room visits, which decreases healthcare cost to both the patient and the employer. Additionally by establishing a relationship with a primary care physician, patients seek the appropriate care at the appropriate site of service.

The Affordable Care Act (ACA) is a federal policy enacted in 2010 that affects preventive care utilization by increasing clinical coverage and making many age- and gender-appropriate services (such as screenings, vaccinations, and counseling) at no cost (U.S. Department of Health & Human Services, 2017). The ACA expands access to preventive care and requires most private health insurers to provide preventive care services at no cost to the member including deductibles, copayments, co-insurance or cost sharing, which decreases the cost-related barriers to preventive care utilization (Centers for Disease Control and Prevention, 2017). As a result, over 71 million people have access to cancer screenings, vaccines, and visits with their primary care physician at no cost to them (Chait & Gled, 2018). The impact of the ACA can be seen by an increase in cancer screening utilization and earlier detection of disease in new Medicaid enrollees and vulnerable populations (Medicare enrollees) (Sabik and Adunlin, 2017). In a study conducted by Han et al. (2015), flu vaccinations, blood pressure, and cholesterol checks increased in adults aged 18 and older with the Affordable Care Act implementation.

2.2 Who Are Labor Union Members?

The National Labor Relations Act became a law in 1935, which gave workers the right to organize in order to collectively bargain through representatives for their mutual protection (National Labor Relations Board, 2019). Today, there are 14.8 million union members in the United States, varying from fields including manufacturing, education, and labor (Bureau of Labor Statistics, 2018). Former President Barack Obama gave his support to labor unions by saying that “The 40-hour work week, the minimum wage, family leave, health insurance, Social Security, Medicare, retirement plans. The cornerstones of the middle-class security all bear the union label” (Obama, 2010). According to Malinowski et al. (2015), the strengths of unions include their ability to “address health inequalities by coordinating interventions at all levels of the ecological model while empowering workers and addressing the power inequalities at the heart of community health” (p. 262).

According to the Bureau of Labor Statistics (2018) there are 14.8 million union members in the United States with 0.7 million residing in Pennsylvania. As of 2017, union membership was higher for men (11.4%) than women (10%) and membership rates were highest in the 45 to 64 year age category (Bureau of Labor Statistics, 2018). A representation of labor union members can be seen in a 2010 study conducted by the National Institute for Occupational Safety and Health (NIOSH) with a large, nationally-representative study of long-haul truck drivers which was 94% male, 74% white, and 62% were aged 40-59 (Sieber et al., 2014). Similarly a study conducted by Heaton, Combs, & Griffin (2017) found that “commercial truck drivers had a mean of 18 years of experience, with half of the respondents who had at least some college education, and earned at least \$55,000 per year.” The industries with the highest unionization rates in the private-sector labor unions include utilities (23.0%), transportation and warehousing (17.3%), and construction

(14.0%) (Bureau of Labor Statistics, 2018). According to Sieber et al. (2014), drivers of tractor-trailer trucks accounted for 56% of all production employees in the truck transportation industry in 2011. Understanding the demographics of labor union membership is key to learning how to improve preventive care utilization rates and how to effectively target these members.

Educating young members of the union on the importance of preventive care screenings at an early age could have large implications for their health care claims costs since the employer will be responsible to pay for the health insurance claims throughout that employee's career. Many labor unions have a Fund, which is a multiemployer health trust fund that is created for collectively bargained employees with the purpose of negotiating cost effective healthcare plans for labor union members (National IAM Benefit Trust Fund, 2020). Since labor union members contribute to this Fund, they are essentially paying for the cost of their healthcare claims, so it benefits them to keep their healthcare costs down. By promoting preventive care utilization, there is a smaller upfront cost to the Fund for a preventive exam, compared to a member developing a disease such as cancer, in which the Fund would be responsible to pay a portion of the healthcare costs incurred.

2.3 The Health Status of Labor Union Members

Many trucking industry labor union members experience unique work-related demands such as long hours on job sites, sedentary behavior, and extensive travel, which put them at a higher risk for developing chronic diseases. The majority of research in this population focuses on the transportation industry and long haul-truck drivers which indicates that chronic disease is prevalent due to risk factors including obesity, smoking, high cholesterol, short sleep duration and low physical activity (Centers for Disease Control and Prevention, 2017 & Birdsey & Sussell,

2017). Chronic diseases that are prevalent for long-haul truck drivers include high blood pressure, high cholesterol, diabetes, obesity, and psychiatric problems (Heaton, Combs & Griffin, 2017 & Liu et al., 2009). Shattell et al. (2012) found that due to long weeks away, social isolation, loneliness and depression were typical mental health concerns for long-haul truck drivers. According to Heaton, Combs & Griffin (2017), long haul truck drivers experience social isolation due to largely driving alone, irregular and unpredictable schedules, limited access to health care, and long periods of travel with trips averaging 1,550 miles (approximately 3.9 days of driving).

Preventive care utilization is low in the trucking industry. Birdsey & Sussell (2017) found that long-haul truck drivers had a low prevalence of obtaining flu vaccinations and 25% did not have their cholesterol tested. The National Institute for Occupational Safety and Health (NIOSH) found that 18% of participants delayed or did not receive health care that they needed in the past 12 months (Sieber et al., 2014). John, de Castro, & Duran (2013) found that blue-collar and service workers underutilized preventive care since 34-40% had no dental or preventive exam in past year and fared worse than unemployed workers for preventive exams.

Previous studies have documented differences in preventive care utilization by demographics. Preventive care utilization is lower in men than women (The National Center for Health Statistics, 2001 & Vaidya et al., 2012). According to studies by Brett & Burt (2001), Cherry, Woodwell, & Rechsteiner (2007) & Pinkhasov et al., (2010) (as cited by Jasek, 2011), women are 70% to 100% more likely to make preventive care-related medical visits than men. According to Hammond et al. (2010) “men tend to wait longer after symptoms appear before seeking care and underutilize services, even when clinically appropriate” (p. 2). DeVoe et al.’s (2018) study found that preventive care was underutilized in 18-25 year old adults and participants aged 22 to 25 years old were 38% less likely to have a routine checkup. Mahalik, Burns, & Syzdek (2007) & Wade

(2009) suggest that men may seek health care less frequently than women as a result of cultural norms around masculinity.

2.4 General Population's Perceptions of Preventive Care

Preventive care perceptions vary by factors such as age, gender, and knowledge about the benefits of preventive care. Perceptions of preventive care was assessed by Mazza et al. (2011) who found that younger participants were less likely to seek a primary care physician, had a poor perception of their practitioner, and did not perceive preventive care as being relevant to them (Mazza et al., 2011). Similarly, Tam, Lo, & Tsui (2018) found that participants' knowledge of preventive care was limited and few patients sought advice or knew what they wanted from their doctor regarding preventive care. The attitudes and perceptions of the participations indicated that most possessed negative feelings about preventive screenings and found that cost was a significant barrier to seeking preventive care (Tam, Lo, & Tsui, 2018).

According to Brotons et al. (2012) patients felt they should receive preventive care yearly but did not perceive a need to change their lifestyle behaviors. Half of the participants reported not discussing the designated issues they were concerned about with their PCP and of the participants surveyed, men had a significantly higher percentage of unhealthy behaviors than women, which has implications for the population that should be targeted in future studies (Brotons et al, 2012). Jenkins et al. (1996) found patients who possessed traditional health beliefs were more likely to have a regular doctor and access to healthcare.

2.5 Labor Union Members' Perceptions of Preventive Care

There are few studies that examine the motivations to and perceptions of preventive care utilization by labor union members. The Health Belief Model's concept of self-efficacy can be applied to Greenfield et al.'s (2016) findings that truck drivers viewed their lifestyle as unhealthy and were aware of the possible health consequences, but perceived it as an unavoidable outcome of their occupation, despite expressing the need to change their lifestyle. The population in this study had low self-efficacy and felt that their development of poor lifestyle behaviors was inevitable and outside of their control. Similarly, Sieber et al. (2014) found that "80% of labor union members had not received a flu shot in the previous 12 months as compared to 67% of the adult working population," yet 84% of truck drivers in this study perceived their health status to be excellent, very good, or good (p. 620).

2.6 General Population's Barriers to Preventive Care

Barriers to seeking preventive care services have been identified in the general population. Some specific barriers to accessing preventive care include a lack of knowledge, cost, time constraints, and seeking consults for acute care issues when problems arise instead of taking a preventive approach to healthcare (Mazza et al., 2011). Similarly Tam, Lo, & Tsui (2018) found that participants' knowledge of preventive care was limited and 25% of participants who engaged in the study could not define preventive care or its purpose. Additionally, participants that were low income and had low education levels identified cost as a barrier to health care, and having no primary care provider was associated with significantly decreased clinical preventive services

utilization (Tam, Lo, & Tsui, 2018). Jenkins et al. (1996) found that being employed; income level, and marital status were the greatest predictors of preventive care utilization.

2.7 Labor Union Members' Barriers to Preventive Care

Strickland et al. (2015) found that work-related barriers exist to accessing workplace wellness initiatives for low-wage labor union members such as preventive care services including irregular schedules, shift work, short breaks, physical jobs demands, food options, travel, and increased weight. A study by Lincoln et al. (2018) found that of 16 truck stops utilized frequently by long haul truck drivers, none “offered exercise facilities, 94% lacked access to health care, 50% lacked fresh fruit and 37% did not offer fresh vegetables, and 81% lacked a walking path” (p. 546). Lack of health insurance is another barrier to accessing preventive care and John, de Castro & Duran (2013) found that blue-collar and service workers were more likely to be uninsured than white-collar workers. A study by Hege et al. (2015) found that keeping an appointment with a PCP is difficult for long-haul truck drivers due to the erratic nature of their work schedule. Heaton, Combs, and Griffin (2017) found that a typical work schedule for long-haul truck drivers consists of 11 hours of driving, limited breaks, and night driving with a maximum of 6 days driving in a row, and “breaks” that lasted 1.6 days.

Hospital worker populations encountered barriers to accessing preventive care due to rotating work shifts which makes accessibility to preventive care difficult, and is similar in nature to the unique work shifts of labor union members across varying industries such as trucking or manufacturing (Sabbath et al. 2018). The results of this study indicated that job flexibility was associated with positive preventive care seeking behavior and an increase in annual physical

exams, cancer screenings (colon and prostate), vaccinations, and chronic conditions screenings (Sabbath et al., 2018).

2.8 General Population's Facilitators to Preventive Care

Factors have been identified as facilitators to accessing preventive care in the general population. Mazza et al. (2011) found that the benefits and enablers to preventive care were identified as trust, rapport, and reliability of care with the PCP. Zhang et al. (2009) found that people's beliefs toward preventive care and positive attitudes about regular physical exams correlated with higher self-reported utilization of care. Additionally Zhang et al. (2009) found that facilitators to receiving preventive care were participants who used the same general practitioner and had health insurance were more likely to seek preventive care services. Education is also a factor in accessing preventive care. Cutler and Lleras-Muney (2008) estimated that each year of schooling was associated with an increase of 1.7% in receiving a flu shot. Bednarczyk et al. (2018) developed a model, which analyzed the interaction of the Patient, Practice, and Provider-level to improve preventive care; examples include attitudes and beliefs to preventive care including access to care, resources, costs, and social support. The Practice-level factors that facilitated preventive care included vaccination promotion by staff, reinforcing a culture of prevention, and the ability to adapt schedules to promote prevention based-activities.

2.9 Labor Union Members' Facilitators to Preventive Care

For labor union leaders, education about preventive care utilization is key to providing insights into the type of health insurance plans that are most appropriate for those in low-income union jobs. In order to maximize utilization of members' healthcare benefits, plans with no co-pays or plans with less expensive premiums may entice members to seek care since there will be less out of pocket costs. Hughes et al. (2010) supports this by making recommendations to employers to promote preventive care services in the workplace by considering insurance benefit designs to promote preventive care utilization and using the workplace as an avenue to address health disparities within the population. Similarly, Elder et al. (1989) assessed the health promotion activities of 50 labor unions including teamsters, carpenters, and iron workers, which found that labor unions reported that they had some type of health promotion programs onsite including newsletters and individual counseling (63% of small unions, 60% medium, 71% of large unions and 93.5% of labor unions).

2.10 Effects of Workplace Environment on Preventive Care Utilization in the General Population

From an employer perspective, preventive care services can be used as a tool to affect the health of a population to improve productivity, worksite safety, and decrease absenteeism. Adults aged 50 to 65 experience an average of 19.6% total hours of health-related productivity loss per week (totaling approximately 48 million hours) and \$4.6 billion in medical expenses and an additional \$5.6 billion in lost productivity (Centers for Disease Control & Prevention, 2009).

While employee perspectives are key to understanding the motivations to seeking preventive care, the level of employer and stakeholder support at the workplace has implications into the accessibility and flexibility for employees to seek preventive care. Bondi et al. (2006) assessed clinical preventive services offered to employers of various sizes to understand stakeholder motivations for offering preventive services, which indicated that 90% of stakeholder motivations were to increase productivity, and decrease healthcare costs, including physical exams, immunizations, and screenings. Linnan et al. (2008) found that worksites with more than 750 employees had significantly less participation from high-risk employees in wellness programs.

2.11 Effects of Workplace Environment on Preventive Care Utilization in Labor Unions

Stakeholder buy-in is key to influencing the health of employees. From an employer perspective, healthier employees tend to utilize less sick time and will be more productive than employees with comorbidities or managing chronic illness. In an effort to decrease self-insured health insurance costs, Liu et al. (2009) implemented a risk-management program in two unions of plumbers and electricians, which partnered with local pharmacies to provide cardiovascular screens, flu vaccinations, and education for those who were at-risk in their population. Elder et al. (1989) found that 63% of the labor unions reported that worksite health programs were initiated by leaders in the union, which speaks to the role of the support of stakeholders in the union and its effect on health promotion activities onsite. Linnan et al. (2008) found that worksites in the transportation, utilities, and construction industries were significantly less likely to participate in worksite wellness programs including preventive screenings such as blood pressure (36.4%), cholesterol (29.4%), cancer screenings (21.8%), and diabetes screenings

(27.4%). Grosch et al. (1998) found that blue-collar and service workers are less likely to work for an employer who offered health promotion activities. Linnan et al. (2008) supported this by finding that only 2.9% in manufacturing and 8.7% in in the transportation industry reported offering a comprehensive wellness program, which is why this population should be targeted.

2.12 Summary

Preventive care can improve health outcomes, prevent illness and disease, and decrease long-term healthcare costs through the implementation of vaccinations, routine physicals, and preventive screenings. The general health of labor union members, particularly those in the trucking industry, is poor and many are plagued with chronic diseases as a result of lifestyle behaviors. Facilitators to preventive care include having health insurance, people who have established a relationship with a PCP, flexibility in schedules, and positive attitudes toward preventive care. Barriers to preventive care include cost, socioeconomic status, education level, lack of knowledge of preventive care, and poor perceptions of the PCP. Workplace barriers may exacerbate these poor nutritional and physical activity behaviors in addition to preventing labor union members from establishing a relationship with a PCP. Stakeholder buy-in is key to influencing the health of employees. Stakeholder motivations for promoting preventive care include increased productivity, employee retention, and decreased healthcare costs. Understanding the perceptions and motivators to preventive care utilization with labor union members is key to understanding utilization behaviors.

3.0 Methods

3.1 Inquiry Questions

The specific inquiry questions that guided this study included:

- 1) What are the perceptions of preventive care by labor union members?
- 2) What are the perceived barriers and facilitators to preventive care utilization by labor union members?
- 3) What is the role of stakeholder buy-in on labor union members' perceptions of and barriers to preventive care?

3.2 Inquiry Design

The inquiry design is a needs assessment to understand the perceptions of and motivators to preventive care utilization by labor union members.

3.3 Setting

Highmark Inc., whose main headquarters is located in Pittsburgh, Pennsylvania, is a health insurance company and well-known supporter of labor unions. Highmark insures over 17 million unionized labor members and their families and 97% of the labor union population in western Pennsylvania (Blue Cross Blue Shield Association, 2019).

Healthcare Effectiveness Data and Information Set (HEDIS) is a set of standardized performance measures designed to provide purchasers and consumers with information for comparison of quality measures between health plans (CMS.gov, 2019). Specific HEDIS measures for the 2018 measurement year relevant to utilization of preventive care in the commercial PPO plan at Highmark include hemoglobin A1c testing for diabetes care, colorectal cancer screenings, and the adult BMI measurement. In the general population (EPO/ PPO plans), 2019 HEDIS national average benchmark data across health plans found that 48.82% of 18 to 85 year olds with a diagnosis of hypertension and whose blood pressure was adequately controlled had a blood pressure screening completed. In comparison, those members with Highmark insurance (commercial PPO plans) reported a higher utilization of 61.31% (Highmark: Provider Resource Center). While Highmark members fared better than the national benchmark, utilization is still below the goal of engaging 100% of eligible members in order to close care gaps. It is currently unknown what Highmark utilization data is for labor union members; however, the literature suggests that their utilization is lower than the general population.

3.4 Participants

Twenty-four participants were included in the study and n=22 had complete data on the variables of interest. Participants included adults ages 18 and older primarily living in northeastern and western Pennsylvania, who worked full-time within manufacturing or trucking labor unions. Employees who were contingent workers or employed part-time were excluded from the study.

Three labor union Fund Managers were initially contacted via email by the lead researcher to participate in the study. Leadership at two labor unions declined participation because their legal

team advised that it was not a good use of the Teamsters #491 and the Ironworkers Health and Welfare Plan's time or resources. Leadership at the third union, the Western Pennsylvania Teamsters Employers Welfare Fund, which has approximately 5400 members, agreed to participate and promoted the survey at two trustee meetings where labor and management trustees were asked to share information about the survey by word of mouth with their employees. They also agreed to promote the survey within a scheduled annual communication that was mailed to all members. The survey link was posted on the labor union member website labeled "Preventive Care Survey." Any members with questions about participation in the survey were directed to contact the lead researcher. Finally, to increase participation rates, snowball sampling was employed; the lead researcher reached out to eligible individuals via email and asked them to share the survey with potentially eligible individuals.

3.5 Measures

Motivations and Perceptions to Preventive (MAPP) Care Utilization Survey. A 38-question survey, adapted from Zhang et al. (2009) and Babitsche et al. (2012), assessed the perceptions, facilitators, barriers, and workplace environment of labor union members related to their preventive care utilization. The survey included 7 subscales that assessed individual-, organizational-, and system-level factors that influence preventive care utilization: (a) participants' attitudes toward healthcare (4 items), (b) the value of good health (5 items), (c) workplace support of healthcare (8 items), (d) value of general practitioners (4 items), (e) concerns about availability and accessibility of healthcare (5 items), (f) barriers to accessing preventive care (6 items), and (g) facilitators to accessing preventive care (6 items).

Various Likert-type scales were used for the response options, depending on the subscale. The response options for the subscale of value of good health ranged from 1=“very likely” to 4=“very unlikely” for example, in the question “I get an adequate amount of rest and sleep.” The subscales of the Value of General Practitioners, Workplace Support of Healthcare, Attitudes Toward Healthcare, Barriers to Accessing Preventive Care, and Facilitators to Accessing Preventive Care response options range from 1=“strongly agree” to 4=“strongly disagree.” The Workplace Support of Healthcare subscale focused on questions assessing stakeholder buy-in and perceived stakeholder views on engagement in preventive care behaviors of members. A sample question from Workplace Support of Healthcare was “I am satisfied with the level of support I receive regarding my health, healthcare, and health behaviors.” The subscale Concerns about Availability of and Access to Health Care response options ranged from 1= “very important” to 3= “not important” with a sample question, “Having a number of doctors to choose from.”

Demographic Characteristics. Participants reported their demographic information via 14 items adapted from the 2018 Behavioral Risk Factor Surveillance System (BRFSS) Questionnaire (BRFSSQ, 2018). Participants reported their age, marital status, health insurance status, employment status, number of chronic conditions, and level of education. Age (in years) was collapsed into categories: 18-35, 36-49, and 50+ (Sabbath et al., 2018).

3.6 Data Collection

Prior to data collection, one labor union member and another individual with similar demographic information to the ideal study participants piloted the survey. Changes were made to the survey as a result of pilot testing including removing one non-relevant question and a minor

wording change to clarify a question. In the Fall of 2019, data was collected via a Qualtrics survey, which remained active for two months between December 2019 and January 2020. The survey took approximately 10 minutes to complete and participants could only complete the survey once. Participants were prompted to read through the Introductory Script once they clicked on the Qualtrics link, prior to accessing the survey. Consent was provided on the first page of the survey and by clicking “continue” they agreed to participate. Upon reading the consent, if they chose not to participate, they simply did not click continue to complete the survey. Upon completion of the survey, a question was added in which an email address could be provided for a chance to win one of five \$25 Amazon gift cards.

Once the survey link was live, it was kept open for one month, however participation was low. Snowball sampling was also implemented with labor union members from other labor industries (carpenters, laborers, electrical workers) via email to increase participation. After data was collected from the survey, it was de-identified and participants were given a unique ID number. The file linking any identifiable information (e.g., email addresses) with the ID numbers was only accessible by the lead researcher and was saved in a separate location from the participant data. The information was stored securely on a password protected University of Pittsburgh file storage box (Box), which only the lead researcher had access to. The University of Pittsburgh Institutional Review Board reviewed and approved all study protocols (PRO1907091).

3.7 Statistical Analysis

Descriptive statistics (frequencies) were calculated to summarize participant demographic, health status, and preventive care utilization data for the total group. Health status and preventive

care utilization data was also presented by gender and age groups. Results from the adapted MAPP Care Utilization Survey were calculated as frequencies for each individual item. Response options were collapsed and summarized as ‘important’ (very important + somewhat important) or ‘not important,’ ‘agree’ (strongly agree + somewhat agree) or ‘disagree’ (somewhat disagree + strongly disagree), and ‘likely’ (very likely + somewhat likely) or ‘unlikely’ (not likely + very unlikely). Open-ended items (i.e., ‘Other’ response option in the Barriers or Facilitators to Accessing Preventive Care subscales) were coded and similar responses were categorized together. All analyses were run via pivot tables in Excel.

4.0 Results

4.1 Demographic Characteristics

Refer to Table 1 for the demographic characteristics of the n=24 survey participants. Eighteen of the participants were male (75%) and 6 were female (25%). The education level of participants was 37.5% (n=9) completed high school or a GED, 33.3% (n=8) had some college or technical school, and 25% (n=6) were college graduates or more. All of the participants who completed the survey were white and 91.6% (n=22) were married.

Of the n=24 participants, over half (54.2%; n=13) were laborers, 20.8% (n=5) were management, and 25% (n=6) were office staff. Of those in office staff positions, n=5 (83.3%) were women. Of those in management roles, n= 5 (83.3%) were men. All of the participants in the laborer role were males (n=13) and 38.4% (n=5) worked as carpenters, 15.4% (n=2) worked in construction, 7.7% (n=1) worked for the electrical union, and 7.7% (n=1) worked for a pipeline union. Four participants (30.8%) did not report their industry. The majority of participants reported being employed with their company for more than 1 year (87.5%; n=21) and worked day shift (91.6%; n=22).

Table 1 Demographic Characteristics of n=24 Labor Union Member Survey Participants

Characteristic	n (%)
Gender	
Male	18 (75%)
Female	6 (25%)
Age (years)	
18-35	5 (20.8%)
36-49	8 (33.3%)
50 and older	11 (45.8%)
Education	
Some high school	1 (4.2%)
High school or GED	9 (37.5%)
Some college or technical school	8 (33.3%)
College graduate or more	6 (25%)
Marital Status	
Married	22 (91.6%)
Divorced	1 (4.2%)
Single	1 (4.2%)
Occupation	
Laborer	13 (54.2%)
Management	5 (20.8%)
Office Staff	6 (25%)
Shifts Worked	
Day	22 (91.6%)
Rotating	1 (4.2%)
Other	1 (4.2%)
Years Employed	
More than 1 year	21 (87.5%)
6 months to 1 year	2 (8.3%)
Less than 6 months	1 (4.2%)

4.2 Preventive Care Utilization and Health Status

Table 2 Preventive Care Utilization & Health Status reported by (n[%]) n=24 Labor Union Members

Variable	Total n=24	Male n=18	Female n=6	18-35 n=5	36-49 n=8	50 and older n=11
Insurance Provider						
Highmark	18 (75%)	12 (66.7%)	6 (100%)	2 (40%)	5 (62.5%)	11 (100%)
Other	6 (25%)	6 (33.3%)	0 (0%)	3 (60%)	3 (37.5%)	0 (0%)
Have a PCP						
Yes	21 (87.5%)	16 (88.9%)	5 (83.3%)	5 (100%)	5 (62.5%)	11 (100%)
No	3 (12.5%)	2 (11.1%)	1 (16.7%)	0 (0%)	3 (37.5%)	0 (0%)
Number of preventive care visits in the past 12 months						
0	4 (16.7%)	4 (22.2%)	0 (0%)	3 (60%)	1 (12.5%)	0 (0%)
1	9 (37.5%)	7 (38.9%)	2 (33.3%)	0 (0%)	4 (50%)	5 (45.4%)
2	6 (25.0%)	4 (22.2%)	2 (33.3%)	2 (40%)	2 (25%)	2 (18.2%)
3 or more	5 (20.8%)	3 (16.7%)	2 (33.3%)	0 (0%)	1 (12.5%)	4 (36.4%)
Have you been diagnosed with a chronic disease?						
Yes	14 (58.3%)	11 (61.1%)	3 (50%)	3 (60%)	5 (62.5%)	6 (54.5%)
No	10 (41.7%)	7 (38.9%)	3 (50%)	2 (40%)	3 (37.5%)	5 (45.5%)
Number of chronic diseases						
0	10 (41.7%)	7 (38.9%)	3 (50%)	2 (40%)	3 (37.5%)	5 (45.5%)
1	9 (37.5%)	7 (38.9%)	2 (33.3%)	3 (60%)	3 (37.5%)	3 (23.3%)
2	2 (8.3%)	2 (11.1%)	0 (0%)	0 (0%)	1 (12.5%)	1 (9.0%)
3	3 (12.5%)	2 (11.1%)	1 (16.7%)	0 (0%)	1 (12.5%)	2 (18.2%)
Number of visits to a doctor as a result of a chronic disease in the past 12 months						
0	12 (50%)	8 (44.4%)	4 (66.7%)	3 (60%)	5 (62.5%)	4 (36.4%)
1	5 (20.8%)	5 (27.8%)	0 (0%)	1 (20%)	1 (12.5%)	3 (23.3%)
2	4 (16.7%)	2 (11.1%)	2 (33.3%)	0 (0%)	1 (12.5%)	3 (23.3%)
3 or more	3 (12.5%)	3 (16.7%)	0 (0%)	1 (20%)	1 (12.5%)	1 (9.0%)

Table 2 reports the preventive care utilization and health status of participants including health insurance provider, health care provider (PCP), and number of chronic conditions in the total group and by gender and age. In the total group, the majority of participants (75%; n=18) reported having Highmark insurance and had a PCP (87.5%; n=21). Most participants had a preventive exam within the last 12 months (83.3%; n=20), however 16.7% (n=4) reported no visits. Over half of participants reported having a chronic disease (58.3%; n=14). The most prevalent conditions reported for the total group were back pain (20.8%; n=5), depression (20.8%; n=5) and obesity (12.5%; n=3) (results not shown).

The majority of participants, regardless of gender, reported they received a preventive exam within the last 12 months (77.8%; n=14 males and 100%; n=6 females). All of the female participants (100%; n=6) and (66.7%; n=12) of the males reported having Highmark insurance. The majority of women (83.3%; n=5) and men (89.9%; n=16) reported having a PCP. Two out of three respondents (66.7%) who reported they did not have a PCP were male laborers (results not shown). More males reported being diagnosed with a chronic disease than females (61.1% vs. 50%, respectively). Of those participants who reported they had a chronic disease but had not seen a doctor in the past 12 months (21.4%; n=3), and 2 out of the 3 were men (results not shown). The most common chronic diseases reported by women were obesity (33.3%; n=2) and depression (33.3%; n=2), while the most common chronic diseases reported by men were depression (16.7%; n=3), back pain (22.2%; n=4), some sort of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia arthritis (16.7%; n=3). Of those working in management positions, 80% (n=4) reported having at least one chronic disease compared to 66.7% (n=4) of office staff and 53.8% (n=7) of laborers (results not shown).

Descriptively, there were differences by education in preventive care utilization and having an established relationship with a PCP. All 6 participants who had a college education or higher reported having a preventive exam within the last 12 months and a PCP (results not shown). Participants with an education level of high school or GED (88.9%; n=8) reported they had a preventive exam within the last year and (100%; n=9) have a PCP. Participants with some college or technical school, (75%; n=6) had a preventive exam within the last 12 months, while (37.5%; n=3) did not have a PCP. Of those who had a college education or more, all of the respondents (n=6) reported having at least one chronic disease and having attended at least one visit to their doctor as a result of their chronic disease within the last 12 months.

Descriptively, there were also differences in preventive care utilization by age. Ninety-five percent (n=19) of participants over the age of 35, 87.5% of participants' ages 36 to 49 years (n=7) and all participants ages 50 and older (n=11) received a preventive exam in the last year. Of the participants who reported receiving 3 or more preventive visits per year (n=5), 36.4% (n=4) were ages 50 and older, and 12.5% (n=1) were ages 36-49. Of the participants who reported they did not receive a preventive exam in the past 12 months (n=4), 60% (n=3) were ages 18 to 35 years, and 12.5% (n=1) were ages 36-49 years; all 4 participants were male laborers (results not shown). Over half of the participants in each age group reported having a chronic disease.

4.3 Motivations & Perceptions to Preventive Care

Table 3 Motivations and Perceptions to Preventive (MAPP) Care Utilization Survey (n[%]) (n=23)

Attitude Toward Healthcare	Agree	Disagree
If wait long enough, can get over any disease without doctor	1 (4.3%)	22 (95.7%)
Avoid seeing doctor whenever possible	12 (52.2%)	11 (47.8%)
Only go to the doctor if there is no other option	12 (52.2%)	11 (47.8%)
Even if feeling okay, should still get yearly checkup	21 (91.3%)	2 (8.7%)
Concerns about Accessibility of and Access to Health Care		
	Important	Not Important
Number of doctors	19 (82.6%)	4 (17.4%)
See preferred doctors	22 (95.7%)	1 (4.3%)
Time to get an appointment	23 (100%)	0 (0.0%)
Cost	21 (91.3%)	2 (8.7%)
Transportation	12 (52.2%)	5 (21.7%)
Value of General Practitioners	Agree	Disagree
Care received in the last few years was good	22 (95.7%)	1 (4.3%)
Person understands their health better than doctor	15 (65.2%)	8 (34.8%)
Very important to choose doctor carefully	23 (100%)	0 (0.0%)
Doctors are more concerned about income than providing adequate medical care	9 (39.1%)	14 (60.9%)
Value of Good Health	Likely	Unlikely
I get an adequate amount of sleep	11 (47.8%)	12 (52.2%)
I get an adequate amount of exercise	10 (43.5%)	13 (56.5%)
I should cut down on the amount of work I do	11 (47.8%)	12 (52.2%)
I should stop eating unhealthy foods	19 (82.6%)	4 (17.4%)
I should spend more time with family and friends	21 (91.3%)	2 (8.7%)

NOTE: The Attitude toward Healthcare and Value of General Practitioners subscale responses were collapsed as agree (strongly agree + somewhat agree) and disagree (somewhat disagree + strongly disagree); the Concerns about Availability and Accessibility of Healthcare subscale responses were collapsed as important (very important + somewhat important) and not important. Not applicable responses for the transportation item (n=6) were not reported in the table; the Value of Good Health subscale responses were collapsed as likely (very likely + somewhat likely) and unlikely (not likely + very unlikely).

Table 3 reports participants' motivations and perceptions of preventive care. Regarding participants' attitude toward healthcare, 91.3% (n=21) agreed that even if a person feels okay, they should have a yearly check up. Most participants (95.7%; n=22) disagreed that if you wait long enough, you can get over any disease without a doctor. However, there was more variability in participants' responses surrounding their attitudes about seeing a doctor. About half of participants (52.2%; n=12) agreed that they avoid a doctor whenever possible and (52.2%; n=12) agreed that they only go to the doctor when there is no other option (52.2%; n=12).

The top areas of concern that participants reported were important regarding access to and availability of healthcare included seeing their preferred doctor (95.7%; n=22), cost of their care (91.3%; n=21), and the number of doctors to choose from (82.6%; n=19). All participants (n=23) agreed that time to get an appointment was important regarding access and availability to health care. About half of participants (52.2%; n=12) agreed that transportation was important to accessing health care.

Regarding attitudes toward their general practitioner, all participants agreed that it was very important to choose a doctor carefully (n=23) and almost all participants (95.7%; n=22) agreed that the care they received from their doctor was good. Over half (60.9%; n=14) of participants disagreed that doctors were more interested in their income than providing adequate medical care. Over half of participants agreed that a person understands their health better than their doctor (65.2%; n=15).

Participants reported their perceptions of how likely or unlikely they were to value good health. The majority of participants reported it was likely that they should stop eating unhealthy foods (82.6%; n=19) and should spend more time with family and friends (91.3%; n=21). Half of participants reported that it was unlikely that they get an adequate amount of sleep (52.2%; n=12)

or exercise (56.5%; n=13). About half of participants 47.8% (n=11) reported it was likely that they should cut down on the amount of work they do.

4.4 Perceived Barriers and Facilitators to Accessing Preventive Care

Table 4 Participants' Perceived Barriers and Facilitators (n[%]) to Accessing Preventive Care

Barriers (n=23)		Agree	Disagree
Lack of support from spouse/family member makes it difficult for me to access preventive care		1 (4.3%)	22 (95.7%)
Financial means/Income (ability to pay medical bills) make it difficult for me to access preventive care		7 (30.4%)	17 (73.9%)
Lack of health insurance makes it difficult for me to access preventive care		2 (8.7%)	21 (91.3%)
Knowledge of the health benefits I have or how to use them make it difficult for me to access preventive care		9 (39.1%)	16 (69.6%)
Time is a barrier for me to access preventive care		22 (95.7%)	7 (30.4%)
Other		2 (8.7%)	7 (30.4%)
Facilitators (n=22)		Agree	Disagree
Support from spouse/family help me to access preventive care		21 (95.5%)	1 (4.5%)
Financial means/Income (ability to pay medical bills) help me to access preventive care		18 (81.8%)	5 (22.7%)
Possessing health insurance helps me to access preventive care		21 (95.5%)	1 (4.5%)
Knowledge of the health benefits I have or how to use them help me to access preventive care		18 (81.8%)	4 (18.2%)
I have enough time to access the preventive care I need		13 (59.1%)	10 (45.5%)
Other		1 (4.5%)	12 (54.5%)

NOTE: Subscale responses for barriers and facilitators were collapsed as agree (strongly agree + somewhat agree) and disagree (somewhat disagree + strongly disagree). Two participants identified two barriers, each. Not Applicable responses for 'Other' barriers (n=7) and facilitators (n=5) were not reported in the table.

Table 4 presents the results for the participants’ perceived barriers and facilitators to accessing preventive care. The top barriers reported by participants included time (95.7% agree; n=22) and knowledge of health benefits they have or how to use them (39.1% agree; n=9). Two participants who reported ‘Other’ barriers (8.7%) reported ‘*doctor’s office hours.*’ The majority of participants agreed that support from family (95.5%; n=21) and possessing health insurance (95.5%; n=21) were facilitators to accessing preventive care. Over half of participants (59.1%; n=13) agreed that they have enough time to access the preventive care they need. Only one participant (4.5%) reported ‘Other’ facilitators where they identified ‘*hospitals/doctors.*’

4.5 Perceptions of Workplace Support of Healthcare & Stakeholder Buy-In

Table 5 Participants’ Perceptions (n[%] agree or disagree) of Workplace Support of Healthcare and Stakeholder Buy-In (n=22)

	n (%)	Agree	Disagree
Support of health/healthcare		21 (95.5%)	1 (4.5%)
Vacation time for appointments		10 (45.5%)	12 (54.5%)
Work schedule		11 (50%)	11 (50%)
Worksite health promotion		5 (22.7%)	17 (77.3%)
Wellness program		5 (22.7%)	17 (77.3%)
Supervisors encourage visits to doctor		8 (36.4%)	14 (63.6%)
Supervisors set good example		7 (31.8%)	11 (50%)
Supervisor engages in healthy behaviors		7 (31.8%)	11 (50%)

NOTE: The Workplace Support of Healthcare subscale responses were collapsed as agree (strongly agree + somewhat agree) and disagree (somewhat disagree + strongly disagree). Not Applicable responses for supervisors set a good example (n=4) and supervisor engages in healthy behaviors (n=4) were not reported in the table.

Table 5 presents the results of participants' perceptions of workplace support of healthcare and of stakeholder buy-in on preventive care utilization. Nearly all (95.5%; n=21) participants agreed that there was a significant level of support of health, health care, and health behavior in their workplace. Almost half (45.5%) of participants agreed that their employer required them to use vacation time or use paid time off for medical appointments. Most participants (77.3%; n=17) disagreed that their employer offered health promotion accommodations in their workplace or that their workplace offered a wellness program that incentivizes employees for receiving preventive care. Nearly two-thirds of participants (n=14) disagreed that supervisors in their company encouraged employees to visit their doctors, and of those, n=9 were laborers. Half of participants (n=11) also disagreed that supervisors in their company set a good example for employees by engaging in healthy behaviors, while almost one third of participants (n=7) agreed that seeing their supervisor engage in healthy behaviors encouraged them to also engage in health behaviors.

5.0 Discussion

The purpose of this study was to understand perceptions of and motivations for the utilization of preventive care by labor union members including the effect of barriers, facilitators and workplace environment on utilization. All of the n=24 participants who completed the survey were white and the majority were male and married. Participant demographics were similar to a nationally representative study of long-haul truck drivers who were mostly white, married males, ages 40-59 (Sieber et al., 2014). About half of the participants were ages 50 and older, which the Bureau of Labor Statistics (2018) reported is the highest unionization rates in labor unions were for those between the ages of 45 to 65 years.

The health status of participants was poor, and about half of participants had a chronic disease. This aligns with research, which indicates chronic disease prevalence is high in manufacturing and trucking occupations (CDC, 2017). Similar to our study findings, Brotons et al. (2012) also found that men had a significantly higher percentage of unhealthy behaviors than women. The most prevalent conditions reported in the total group were back pain (20.8%; n=5), depression (20.8%; n=5) and obesity (12.5%; n=3). This is similar to findings from studies by Heaton, Combs & Griffin (2017) and Liu et al. (2009), which reported that prevalent chronic diseases for long-haul truck drivers include high blood pressure, high cholesterol, diabetes, obesity, and psychiatric problems.

Overall, participants' perception of the value of their health was poor. The majority of participants reported it was likely that they should stop eating unhealthy foods, should get more sleep, exercise more, work less, and should spend more time with family and friends. Similarly, Greenfield et al. (2016) reported that truck drivers viewed their lifestyle as unhealthy and were

aware of the possible health consequences, but perceived it as an unavoidable outcome of their occupation, despite expressing the need to change their lifestyle.

5.1 Preventive Care Utilization

Despite literature indicating that preventive care utilization is low in the manufacturing and trucking industries, in the current sample the majority of participants reported receiving a preventive exam within the last 12 months, most had a PCP and all participants reported having health insurance (John, de Castro, & Duran (2013). A previous study by Jenkins et al. (1996) found that being employed and being married were the greatest predictors of preventive care utilization. Similarly, Zhang et al. (2009) found that participants who used the same general practitioner were more likely to receive preventive care services. Utilization was high in the current sample in which respondents primarily had Highmark health insurance. This correlates with 2019 HEDIS data of 18 to 85 year olds with a diagnosis of hypertension who had a blood pressure screening completed, in which members with Highmark insurance (PPO commercial plans) reported a higher utilization of 61.31%, compared to the national average across health plans of 48.82% (Highmark: Provider Resource Center, 2019). In the total group, obesity was identified as one of the most prevalent chronic conditions reported by participants. 2019 HEDIS data of PPO commercial plans of members with Highmark health insurance reported a higher utilization in the adult BMI assessment, 78.6%, than the national average of 71.44% of EPO/PPO plans (Highmark: Provider Resource Center, 2019). While utilization was high in the current sample, one in 6 participants reported not receiving preventive care within the past 12 months. This suggests that there are

opportunities to improve this reach to ensure all employees are meeting or exceeding HEDIS benchmarks.

Descriptively, there were differences in preventive care utilization by demographics, including gender, occupation, and education level in the current study. Previous research has documented difference by gender where males tended to utilize preventive care services less frequently than women (Brotons et al., 2012). In the current study, all of the participants who had a college education or higher reported having a preventive exam within the last 12 months and had a PCP. Research by Cutler and Lleras-Muney (2008) supports this and suggests that each year of schooling is associated with an increase in receiving a flu shot (as cited by Fletcher & Frisvold, 2009). Additionally, while chronic disease prevalence was higher in those with higher education levels, all participants who had a college education or higher reported having attended at least one visit to their doctor as a result of their chronic disease within the last 12 months. Future research should focus on the impact of education on preventive care utilization.

Descriptively, preventive care utilization in the current study was higher in older adults than younger adults, supporting previous findings from Fletcher & Frisvold (2009). While all participants in the 18-35 year old age group reported they had a PCP, over half reported not receiving a preventive exam in the last 12 months. This correlates with previous findings by DeVoe et al. (2018) that preventive care was underutilized in 18-25 year old adults and participants aged 22 to 25 years old were 38% less likely to have a routine checkup. Future research should focus on understanding preventive care utilization perceptions in labor union members' ages 18 to 35, since this was the lowest number of participants in the survey among any age group. Additionally, they are the least likely to utilize preventive care and will likely continue in their positions for many years.

5.2 Barriers and Facilitators to Preventive Care

In the current study, key barriers to accessing preventive care in the workplace included time and knowledge of health benefits. Mazza et al. (2011) conducted a study in the general population and found that barriers to accessing preventive care in the workplace included a lack of knowledge and time. Specific to labor union members, Strickland et al. (2015) found that they experienced work-related barriers to accessing workplace wellness initiatives. Hege et al. (2015) also echoed time as a barrier for long-haul truck drivers; these researchers reported that keeping an appointment with a PCP was difficult for these truck drivers due to the erratic nature of their work schedule. In the current study, all participants (n=23) agreed that the time to get an appointment was important to them regarding access to healthcare. The number of doctors to choose from n=19 (82.6%), seeing their preferred doctor n=22 (95.7%), and cost of their care n=21 (91.3%) were also identified as important. Key facilitators to preventive care utilization by labor union members included support from family and possessing health insurance; it is notable that 100% of participants in our study reported some type of health insurance. This is supported by Zhang et al.'s (2009) findings that a facilitator to receiving preventive care was possessing health insurance.

5.3 Workplace Support of Healthcare

Next steps for research within the labor union setting include stakeholder motivations perceptions, preventive care behaviors, and barriers/facilitators to accessing preventive care. To improve future practice, obtaining buy-in from various stakeholders including health insurance

companies and labor unions is necessary. These systems are complex in nature and will thus require buy-in across multiple levels of each organization. Labor union members in the manufacturing and trucking industries are understudied, particularly related to preventive care utilization and workplace environment supports.

Participants had varying levels of workplace support of healthcare and perceptions of stakeholder buy-in on preventive care utilization. Descriptively, there were differences in workplace support by occupation, but future studies with larger sample sizes are needed to confirm these findings. Health promotion accommodations such as onsite health clinics, biometric screenings, flu shots and flexibility to leave work for doctor's appointments were lacking in the workplaces of respondents. Almost half of the participants agreed that their employer required them to use vacation time or use paid time off for medical appointments and only one in four participants agreed that their employer offered health promotion accommodations in their workplace or offered a wellness program that incentivizes employees for receiving preventive care. Similarly, Linnan et al. (2008) found that only 2.9% in manufacturing and 8.7% in in the transportation industry reported offering a comprehensive wellness program. Yet nearly all (95.4%) participants somewhat or strongly agreed that there was a significant level of support of health, health care, and health behavior in their workplace. Greenfield et al. (2016) suggests that despite initiatives designed to improve workplace health conditions, they were not always aligned with working conditions. Future research should expand on the types of support participants feel they receive at work related to their health behaviors and health care so stakeholders can increase the resources they offer employees.

According to the majority of participants, those in management roles did not promote preventive care utilization with employees and only half of participants felt that their management

engaged in healthy behaviors. Grosch et al.'s (1998) findings support this and found that blue-collar and service workers are less likely to work for an employer who offered health promotion activities. However Elder et al. (1989) found that 63% of the labor unions reported that leaders in the union initiated worksite health programs, highlighting the importance of management in the promotion of preventive care within the workplace. With high rates of chronic disease in labor union members, stakeholders should examine ways to improve access to preventive care in order to improve the overall health of their members and to decrease healthcare costs.

5.4 Motivations and Perceptions of Preventive Care

The majority of participants had a positive attitude toward healthcare, and most participants felt that even if a person feels okay they should have a yearly check up. However about half of participants in the current study said they avoid a doctor whenever possible and that they only go to the doctor when it is the last option. Future research should identify reasons for participants avoiding their doctor, in order to better promote preventive care utilization. The majority of respondents had positive attitudes toward their general practitioner and most participants felt that the care they received from their doctor was good and choosing a doctor carefully was very important. Zhang et al. (2009) found that people's beliefs toward preventive care and positive attitudes about regular physical exams correlated with higher self-reported utilization of care. Future research should explore how perceptions impact preventive care utilization, since it was not explored in the current sample.

5.5 Strengths and Limitations

The strengths of the study include the web-based nature, which allow for a wider distribution of the survey to participants; particularly those who extensively travel and otherwise may have not been able to participate. Additionally, the survey was comprehensive and adapted from previous studies, which addressed a wide range of perceptions, barriers, facilitators, and health behaviors. A primary limitation of the inquiry includes the small convenience sample of labor union members who may have been highly motivated to participate. Further, all data was based on participant self-report which can introduce bias and the survey was not validated for use in this sample. Hall et al. (2004) found that there is a tendency to overestimate due to social desirability bias. We did not ask specifically about whether each participant was a labor union member or the type of industry within which the participant worked, which limits our understanding of these issues.

5.6 Implications for Future Research

This survey can be used as a tool in future inquiries to assess barriers, facilitators, perceptions, and workplace environment in other Funds and labor union settings. A next step is to test the validity of the adapted tool for use within this population, since it was not completed as part of the present study. Future studies should consider building in more open-ended questions to understand insights into the perceptions of preventive care, since this needs assessment's questions are largely closed ended which limits the rich detail or nuances in the participants' experiences. Furthermore, focus groups or face-to-face interviewing techniques with labor union members

could garner additional insights into the perceptions of preventive care and gather a deeper understanding of facilitators to accessing care. Future inquiries should consider including questions asked about which preventive exams respondents received, which would provide additional insights into preventive exams that are underutilized. Finally, future studies should consider replicating these findings with a larger sample of participants in order to explore any differences by demographics.

Future inquiries of labor union members should examine the attitudes and perceptions related to the PCP, since over half of participants reported that they avoid a doctor whenever possible and only go to the doctor if there is no other option. By applying the Theory of Planned Behavior, according to Fertman & Allensworth (2016), “people are motivated to change based on their perceptions of norms, attitudes, and control over behavior” and these factors can either increase or decrease intentions to change behavior (p. 56). Future research should test the effectiveness of interventions that integrate cues to action to interrupt negative attitudes toward the PCP, which may be associated with lower rates of utilization. Additional qualitative inquiries could explore labor union members’ attitudes and how they are tied to intention.”

5.7 Implications for Practice

Key implications for practice based on the current findings include: (1) modify workplace policies to promote job flexibility and health promotion accommodations, (2) increase level of management promotion and support of preventive care by Fund managers and trustees, (3) incentivize employees to participate in preventive care through wellness and chronic disease

management programs and (4) offer an employer sponsored health insurance program and facilitate family/spouse support.

The first implication drawn from the current inquiry is to modify workplace policies to promote job flexibility and health promotion accommodations. To address barriers identified such as time, stakeholders (Fund managers and trustees) in labor unions should advocate for changes to workplace policies around flexibility to schedule doctor's appointments during the workday without the use of vacation time or loss of compensation. Employers and those in leadership positions should use this information to consider expanding worksite wellness opportunities for onsite health screenings or flu shot clinics, which will decrease the barriers to accessing preventive care. Sabbath et al. (2018) supports this and suggests that job flexibility was associated with positive preventive care seeking behavior and an increase in annual physical exams, which has implications for Funds and employers to consider. To decrease the barriers to accessing preventive care for employees who work remotely, Highmark offers offsite vouchers for biometrics screenings and flu shots, which can be used as a tool to engage remote employees in workplace wellness opportunities.

A second implication is that more management-level promotion and support is needed to improve the preventive care utilization and perceptions of workplace support by labor union members. Management can set a positive example for their employees by engaging in preventive care or changing their own health behaviors to improve employee perceptions. According to Payne et al. (2018), "The consistent effects for leadership support reflect the critical role that leaders play in developing Workplace Health Promotion Programs, allocating resources that support the programs, creating opportunities to adopt a healthy lifestyle (i.e., by providing time and flexibility to use programming), and modeling healthy behaviors with words and deeds" (p. 9). Additionally

Payne et al. (2018) suggest the role of senior managers are to create the vision and allocate resources to implement a culture of health, while “middle managers act as gatekeepers, communicating organizational values in the level of concern they demonstrate for their staff and the opportunities and encouragement they provide for employees to engage in health-promoting behavior” (p. 2). In the labor union setting, the senior management positions would be the Fund manager and the middle managers would be the trustees who are the direct supervisors of the labor union members. To obtain stakeholder buy-in, Bondi et al. (2006) found that 90% of stakeholder motivations to offering clinical preventive services were to increase productivity and decrease healthcare costs. Implications for health insurance companies are to consider employing clinical teams (such as the Labor Union, Trust Fund, and Education clinical team that Highmark created) to garner stakeholder buy-in. These clinical teams could focus on disseminating clinical data with Fund managers and trustees in order to better understand the benefits of promoting preventive care utilization with their employees (cost savings, retention, less turnover, etc.). With management-level support, these clinical teams can promote and implement programs that could improve preventive care utilization, decrease costs, and improve the health of employees.

The third implication for practice is to incentivize employees to participate in preventive care through wellness and chronic disease management programs. While Highmark offers wellness and chronic disease management programs, participation varies by Fund. Programs that focus on diabetes prevention or smoking cessation programs or encourage exercise and improved nutrition could decrease chronic disease prevalence within their workforce. Many of these chronic disease management programs are offered by Highmark at low cost or no cost as benefits to their members. Promoting healthy workplace conditions, including offering a fitness center onsite, reimbursing for fitness memberships, offering healthier food choices in vending machines, or

promoting wellness coaching for employees, may also improve access to healthy resources in the workplace. To improve access to preventive care, employers should offer wellness rewards programs to incentivize employees to utilize preventive care. Such program could include reductions in premiums, gift cards, or Health Savings Account (HSA) contributions when employees complete a preventive exam. Since Highmark offers customizable wellness programs and incentives, Fund managers and trustees should consider implementing a wellness rewards program that requires completion of a preventive exam to promote utilization. The wellness program incentive should be a minimum of one Paid Time Off (PTO) day for employees to use since participants in the sample identified that they were unable to leave work to see their doctor. Additionally, depression and other behavioral health conditions were identified as chronic diseases that participants reported in this sample. Offering employees an Employee Assistance Program (EAP) program with access to behavioral health professionals to address social isolation, sleep, work, and social life, for labor union members who are traveling for extensive periods of time, may also help to improve working conditions.

A final implication centers on capitalizing on the facilitators identified by participants that improve preventive care utilization, specifically family/spouse support and possessing health insurance. These findings have clear implications for the type of comprehensive benefits package that employers should offer. Hughes et al. (2010) recommends that in order to promote preventive care services in the workplace, employers should consider insurance benefit designs and use the workplace as an avenue to address health disparities. Additionally, since cost was identified as a barrier, employers should consider offering a cost-effective health insurance plan. In labor unions, understanding that family/spousal support facilitates access to preventive care for employees has implications for the communication strategy of Funds and health insurance companies. Spouses

may be tasked with scheduling preventive care appointments, particularly for employees who travel extensively for work. Highmark has the capability to communicate with members via various channels (text messaging campaigns, mailings, or emails), which Funds have the ability to customize. Improving access to telehealth could also address barriers for employees who travel extensively. According to Rafiq & Merrell (2005), “telemedicine can lower costs and increase access to health care, especially for those who live in remote or underserved areas” (pg. 34). Employers should make telehealth a covered benefit through their health insurance provider to reduce barriers identified in the sample (e.g., time), with a no cost or low cost visit fee, to improve access for employees who find it difficult to see their physician during their workday. Telehealth is a service that Highmark offers and promotes frequently with clients that have remote employees, including labor unions. However, there is variability in uptake of these services since it is up to the Fund to choose this benefit for employees.

5.8 Summary

In summary, the health status of labor union members was poor, and about half of participants had a chronic disease. The majority of participants reported having at least one preventive care visit in the last 12 months. Participants generally had a positive attitude toward health care and their general practitioner. Participant’s perceptions of the value of their health were generally poor and they identified areas (exercise, nutrition, sleep, work, social life) that could be improved upon. The top workplace barrier to accessing preventive care was identified as (1) time and (2) knowledge of health benefits, while the facilitators were possessing health insurance and support from family. There were varying levels of workplace support and accommodations to

access preventive care within labor unions. Implications for practice include changes to workplace policies in manufacturing and trucking labor unions to promote job flexibility, increased support and modeling from Fund managers and trustees, incentivize employees to participate in wellness and chronic disease management programs, and offering employer-sponsored health plans to employees.

Appendix A Recruitment Script

Hello, my name is Jessica Sebastian and I am a graduate student at the University of Pittsburgh in the School of Education with a concentration in Health and Physical Activity. I am trying to understand the ways that male labor union members aged 18 to 35 years in western Pennsylvania use preventive care and what motivates them to use it, and I am inviting you to participate.

Participation in this project includes taking a web-based survey about barriers and facilitators to preventive care utilization and will take approximately 15 minutes to complete. Participants who complete the survey will be entered into a raffle for a gift card.

For additional information about the study and how to enroll, you can contact your Fund Office. Jessica Sebastian, the lead researcher of the study, can also be reached for additional information at 570-898-7613 and/or jmk231@pitt.edu.

Appendix B Introductory Script

The purpose of this research is to understand the ways that labor union members use preventive care and how they feel about using those services. Preventive care includes routine checkups, vaccinations, routine tests, and visits with a primary care physician. We will ask questions about things that help you to use preventive care services in addition to challenges you may experience that prohibit you from seeking preventive care. With this information, we hope to better understand the health of labor union members. It will take approximately 10 minutes to complete this survey.

Participation in this study is voluntary and you can stop the survey at any time. There are no costs to participate in this research and there are no physical risks to participating. The psychological and emotional risks are short term and include that participants may feel uncomfortable sharing information about their health care practices or demographic information. Infrequent risks include eyestrain from staring at the computer screen or mental fatigue from answering questions. Upon completion of the survey, participants will be entered for a chance to win a \$25 Amazon gift card by providing an email address for this purpose. There is a risk of breach of confidentiality as a result of collecting email addresses, although precautions will be taken to safeguard this information. However, if participants do not want to provide an email address, the survey can still be completed and the responses will remain anonymous. For additional information or questions regarding this study, contact Jessica Sebastian at jmk231@pitt.edu.

Appendix C Demographic Information

1. What is your age in years?

Open-ended # _____

2. What is your sex?

Male

Female

Other _____

3. What is the highest grade or year of school you completed?

Some high school

High School or GED

Some college or technical school

College graduate or more

4. Which one or more of the following would you say is your race/ethnicity? Check all that apply

White

Black or African American

Hispanic

Asian

American Indian or Alaska Native

Other _____

5. Which one of the following best describes your marital status?

Married

Divorced

Widowed

Separated

Never married

A member of an unmarried couple

6. Which of the following best describes the shifts you have worked during a typical work week?

Day

Evening

Night

Rotating

Other

7. What industry are you employed by?

8. How long have you been employed with your current company?

Less than 6 months

6 months to 1 year

More than 1 year

9. Which of the following best describes your occupation/job type?

Laborer

Management Position

Office Staff

Other

10. In the past year, how many times have you been to a doctor, nurse, or other health professional for a routine preventive examination? A preventive examination includes a routine check up or visits with your primary care physician. This would exclude any visits to the Emergency Room, Urgent Care, etc. Open ended-add # _____

11. Do you have one person you think of as your primary care physician or health care provider?

Yes

No

12. Who is your health insurance carrier?

Highmark

Other

Unsure

Do not have health insurance

13. Has a doctor, nurse, or other health professional ever told you that you had any of the following? Check all that apply if you were ever told that you have/had any of the following conditions.

1. Heart disease

2. Asthma

3. Diabetes

4. Obesity

5. Stroke

6. Cancer

7. Musculoskeletal conditions

8. Back pain

9. Some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia

10. Chronic obstructive pulmonary disease, (C.O.P.D), emphysema or chronic bronchitis

11. Depressive disorder (including depression, major depression, dysthymia, or minor depression)

12. Kidney stones, bladder infection or incontinence, or kidney disease

13. Not applicable

If you answered Yes, how many times have you seen a health professional for this condition(s) in the past 12 months?

Open ended #

Appendix D Motivations and Perceptions to Preventive (MAPP) Care Utilization Survey

Concerns about Availability of and Access to Health Care

The questions below ask about how important you feel the following items are to you regarding availability and accessibility to your healthcare. Please answer as honestly as you can.

Rate your perceptions on a scale of 1 (very important) to 3 (not important).

1. Having a number of doctors to choose from

Very Important
Somewhat Important
Not Important
Not Applicable

2. Being able to see my preferred doctor every time

Very Important
Somewhat Important
Not Important
Not Applicable

3. The amount of time it takes to get an appointment

Very Important
Somewhat Important
Not Important
Not Applicable

4. The cost of seeing a doctor

Very Important
Somewhat Important
Not Important
Not Applicable

5. Transportation to see a doctor or medical center

Very Important
Somewhat Important
Not Important
Not Applicable

Attitudes Toward Healthcare

The questions below ask about your attitudes toward healthcare. Rate your perceptions of your health status on a scale of 1 (strongly agree) to 4 (strongly disagree).

6. If you wait long enough, you can get over almost any disease without seeing a doctor

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

7. I avoid seeing a doctor whenever possible

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

8. I only go to a doctor if there is no other option

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

9. Even if a person is feeling okay, they should get a general examination or check-up every year or so

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

Value of General Practitioners

Think about the healthcare provider you receive care from most frequently. Rate your doctor's interactions with you on a scale of 1 (strongly agree) to 4 (strongly disagree).

10. The care I have received from doctors in the last few years been good

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

11. A person understands their own health better than most doctors do

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

12. It is very important to choose your doctor carefully to get good medical care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

13. Many doctors are more interested in their incomes than in making sure everyone receives adequate medical care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

Value of Good Health

The questions below ask about your health beliefs and behaviors. Rate your perceptions of your health status on a scale of 1 (very likely) to 4 (very unlikely).

14. I get an adequate amount of rest and sleep

Very Likely
Likely
Unlikely
Very Unlikely

15. I get an adequate amount of exercise

Very Likely
Likely
Unlikely
Very Unlikely

16. I should cut down on the amount of work I do

Very Likely
Likely
Unlikely
Very Unlikely

17. I should stop eating unhealthy foods

Very Likely
Likely
Unlikely
Very Unlikely

18. I should spend more time doing things with family and friends

Very Likely
Likely
Unlikely
Very Unlikely

Barriers to Accessing Preventive Care

The questions below ask about your barriers to accessing preventive care (e.g., vaccinations, annual check-ups, and chronic condition screenings). Rate these questions on a scale of 1 (strongly agree) to 4 (strongly disagree) if these specific situations make it harder for you to access preventive care.

19. Lack of support from spouse/family member makes it difficult for me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

20. Financial means/Income (ability to pay medical bills) make it difficult for me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

21. Lack of health insurance makes it difficult for me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

22. Knowledge of the health benefits I have or how to use them make it difficult for me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

23. Time is a barrier for me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

24. Are there other barriers for you accessing preventive care that were not listed above? Please describe.

Open-ended _____

Facilitators to Accessing Preventive Care

The questions below ask about your facilitators to accessing preventive care (e.g., vaccinations, annual check-ups, and chronic condition screenings). Rate these questions on a scale of 1 (strongly agree) to 4 (strongly disagree) if these specific situations make it easier for you to access preventive care.

25. Support from spouse/family member help me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

26. Financial means/Income (ability to pay medical bills) help me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

27. Possessing health insurance helps me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

28. Knowledge of the health benefits I have or how to use them help me to access preventive care

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

29. I have enough time to access the preventive care I need

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

**30. Are there other barriers for you accessing preventive care that were not listed above?
Please describe.**

Open-ended _____

Workplace Support of Healthcare

The questions below ask about the level of support you feel that your workplace offers and how that may affect the way you use healthcare. Rate your perceptions of healthcare on a scale of 1 (strongly agree) to 4 (strongly disagree).

31. I am satisfied with the level of support I receive regarding my health, healthcare, and health behaviors

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

32. My workplace requires that I use vacation time or take unpaid time off for medical appointments

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

33. My work schedule makes it difficult for me see a Physician regularly due to travel, work hours, etc.

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

34. My workplace offers health promotion accommodations (onsite health clinics, biometric screenings, flu shots, etc.)

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

35. My employer offers a wellness program that rewards me for visiting my doctor

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly disagree

36. Supervisors in my company encourage employees to visit their doctor

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree

37. Supervisors in my company try to set a good example for employees by engaging in healthy behaviors

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree
N/A

38. Seeing my supervisor engage in healthy behaviors encourages me to engage in healthy behaviors

Strongly Agree
Somewhat Agree
Somewhat Disagree
Strongly Disagree
N/A

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