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Safety and Health Issues among Korean-American Drycleaners: Findings from Focus Groups

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ABSTRACT

The purpose of this study was to obtain qualitative data on Korean-American dry cleaners' concerns about work-related health and safety and their attitudes toward the use of PPE(Personal Protective Equipment). Two focus group discussions were conducted with convenient samples of Korean-American drycleaners in middle-eastern state. A total of 13 individuals participated in two focus groups. Participants had concerns as both owners and workers. As owners, they were concerned mostly about compliance of environmental regulation and economic depression. The participants knew very little about the hazards of chemical exposure and expressed vague concerns about chemical exposure and health. Majority of participants do not use PPE and had no intention of using it in the future because of their limited knowledge about the hazardous nature of chemical exposure. The findings from this study would guide the development of intervention to increase drycleaners knowledge of chemical exposure and use of PPE.

Key words*: Dry-cleaning, Chemical Exposure, Health and Safety, Occupational Health, Focus Group Meeting.*

1. INTRODUCTION

Health and safety hazards in the dry cleaning industry have been identified by many researchers [1]-[9]. The major hazards related to this job include physical, chemical (central nervous system depression, skin irritation, irritation of eyes, nose and throat, pulmonary edema, asthma, liver and kidney damage, cardiac sensitization, and reproductive effects), biological (risk of contracting a contagious disease), and ergonomic, psychosocial and organizational factors (cumulative trauma disorder and psychological stress).

Among those of occupational hazards, chemical injuries are the most serious. Drycleaning chemicals can enter the body by respiration, ingestion, or dermal exposure, PCE (Perchlroethylene), the most commonly used, can cause either a short- or long- term negative effect on the central nervous system [1], [10], [11], heart [1], liver and kidney [7], [12], as well as skin. Excesses of cancer in dry cleaning workers have been reported in many epidemiological studies [4], [8], [13]-[15] In addition, reproductive disorders such as subtle changes in sperm quality, infertility problems and a significantly increased risk for spontaneous abortions were found [16]. PCE is a known animal carcinogen and is associated with considered a probable human carcinogen (International Agency for Research on Cancer [17].

According to the Federation of Korean Drycleaners Association [18], 15,000 Korean dry cleaning shops in the U.S., and the number is almost 50% of all U.S. drycleaning shops. Although many Korean drycleaners have been working under the risks of occupational hazard for years, there is no research investigating Korean-American drycleaners' knowledge and concerns regarding health and safety issues related to their work. Therefore, the purpose of this study was to obtain qualitative data on Korean-American dry cleaners' work related health and safety issues regarding their concerns and attitudes toward protective behaviour though focus group interviews.

2. METHOD

2.1 Data Collection

A qualitative method, focus group discussion was utilized to obtain Korean-American drycleaners' concerns about work-related health and safety concerns and use of PPE. One of the advantages of focus groups allows the researchers to directly interact with the respondents, allowing for clarification of responses and needed follow-up questions. The information obtained from focus groups can be deeper in terms of the level of meaning compare to quantitative methods [19] and can be used effectively for developing intervention programs to change behaviour and attitude to protective ones.

To obtain relevant data, a semi-structured interview guide of open-ended questions was used. The focus group interview guide was developed based on Goldenhar et al.'s [20] tool for drycleaners' focus group study, covered (1) common chemicals,

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(2) major concern of health and safety issues, (3) the use of Personal Protective Equipment (PPE), (4) intention of change to protect health, and (5) suggestions for using PPE. Since we were interested in only health and safety issues and protective behaviours, and all participants were working owners, business issues and regulations for only owners dealt in the study of Goldenhar et al. were not included in our tool.

2.2 Participants

The focus groups were conducted November through December, 2005. The recruitment was achieved based on convenience. The members of Korean Drycleaners Association of Michigan (KDAM) were contacted by research team and invited to participate in the focus group discussion. For the focus group, the president of the KDAM solicited the members for participation. An expert for the focus group in this study was defined as Korean-American working owners in the commercial and machine working drycleaning shops, with at least a year's experience. A total of 13 Korean-American drycleaners participated in the focus groups; 5 in the first group and 8 in the second group. The participants were all men and working owners. Most of the participants had worked in machine working dry cleaning shops for on average 16.4 years (range from 7 to 30). Age range was from 34 to 62 categorized by 30s (10%), 40s (30%), 50s (40%), and 60s (20%).

2.3 Procedure

Approval to conduct to the study was received from The Health Sciences Institutional Review Board (IRB) at the University of Michigan before initiating the study. Participants recruited from a membership directory of Michigan Drycleaners Association. Participation in the study was voluntary. The focus groups were led by two moderators who were trained in conducting focus groups. Informed consent was obtained and introduction including basic demographics were asked at the beginning of each group meeting. The discussions were audio taped and recorded on the notes by trained Korean-American research assistants who are fluent in verbal and written Korean language.

2.4 Data Analysis

General demographics, observational notes, verbatim transcripts from the audio taped included in the data analysis Two Korean-American research assistants transcribed audio taped conversations to avoid subjectivity of the interpretation, and the responses to each question were categorized and coded, and major themes were identified. After then the investigator reviewed data with them. There were a few differences between two coders of interpretation of the transcripts such as categorizing participants' statement, they were discussed and resolved based on the agreement of the themes and categories by the investigator and two research assistants, all of the responses were assigned to the appropriate area.

3. FINDINGS

3.1 Common Chemicals

Various kinds of chemicals including PCE and spotting solvents are used in the commercial drycleaning industries. Participants indicated that PCE is the most common solvent. However most participants expressed that using chemicals was unavoidable as long as operating or working drycleaning shops. The following statements might represent their feelings.

"Even though government regulations are promoting non-toxic chemicals, PCE works the best in cleaning and its price is cheaper than other solvents. Therefore PCE is still highly in use. The meaning of drycleaning indicates cleaning using chemicals without using water therefore it is unavoidable not to use PCE or other cleaning chemicals."

3.2 Health and Safety Issues

The participants expressed that they knew very little about the hazards of chemical exposure and showed low or limited concerns about chemical exposure and its harmful effects on their health. A few participants agreed that various spotting chemicals used in stain removal were also toxic. The majority of the participants concerned more about overwork and stress as their major job-related health issues rather than chemical exposure.

"We are working more than 70 hours per week, and physical and mental exhaustion is a major health problem we perceive. It is quite stressful to deal with customers' need and stress is one of significant problems while we are working in drycleaning shop….if we have at least 2 or 3 times to do exercise on regular basis in a week, our stress level will be reduced …our health will be better."

Most participants had less concerns about chemical exposure or other common known occupational health and safety problems such as ergonomics, burns and work induced injuries. Chemical exposure itself was not considered as a major health and safety issues for the participants. Following participants' statements reflected drycleaners' views on chemical exposure in the work.

"PCE exposure in drycleaning shop might not be that serious compare to workers in oil or automobile companies. Good ventilation system can remove chemical vapours effectively when chemicals leak in our shops… it is rare for workers to inhale the chemical. In recent, well designed safe drycleaning machines prevent us from chemical exposure."

The participants did not have much to say about burns as a concern. With respect to burns, they told that burn itself does not a matter because it does not make a serious health problem even it develops blisters on skin. Following statements might well represent their feelings on burns.

"Burns are usually rare but it does occur usually by the steam pressers. Nowadays, the steamers are operated in a way that burns are minimal. …from time to time I get burns when

working with a steamer or iron, but usually they are low degree of burns on wrist resulting in blistering."

As for ergonomic issues, they did not consider as a serious problem. For example, a participant said that;

"I try not to lift or carry heavy objects and use dolly or cart. When working on a counter, tagging identification card and inserting hangers, such repetitive laboring induces shoulder pain. "

3.3 Protective Behavior

3.3.1 PPE use (respirator, gloves, goggles, masks, protective clothes or apron, and protective shoes): Most participants agreed that using PPE is not easy for them due to multiple work duties even though PPE are equipped in the facilities. They stated working with rubber gloves on reduces the productivity and wearing gloves is uncomfortable. Most participants felt that wearing gloves might offend to customers because if employees are wearing gloves when dealing with clothes, customers might think that the garments are dirty or risk like dealing with contagious diseased person's things. Following statements from the participants represent their beliefs regarding PPE.

"They [PPE] are displayed for the emergency use only…we use the respirator when solvents spill on the floor. But most of the respirator is kept just like new to show inspectors."

"Gloves make hands dull sense resulting difficulties to remove pin or pen in the pocket…even during the spotting work, to keep the hand sensitive, I don't wear gloves… it is also offensive to customer if the counter clerk wears gloves…."

Participants showed more concerns of dealing with garments with body fluid such as blood and vomit than chemical exposure. Two participants stated their opinion like this.

"When I deal with clothes contaminated with blood or vomit, I always wear gloves, and encourage other workers to wear them."

"Chemicals are heavier than air, so all chemical fumes stay close to the floor, we hardly breath in chemical fumes…so we don't need to wear mask or respirator."

3.3.2 Protective Behaviour: Changes in the Shop: We asked the participants that what kinds of changes are needed to protect their health from hazardous chemicals risks. Most participants agreed that changes of drycleaning machine designed safer than old one will be the most effective way to reduce chemical exposure. They also expressed that adequate ventilation systems will work very well to expel chemicals effectively in the shop. Following statements showed their feelings about this.

"…replacing old [drycleaning] machine with new one designed safer is the best choice… If we could do anything in our shop, we will try to install a better ventilation system…high quality ventilator is helpful to expel chemicals effectively from the shop."

3.3.3 Protective Behaviour- Suggestion for using PPE: When we asked focus group participants a suggestion that making workers use PPE. Most of them responded negatively. They had the feeling that using PPE is less important to protect their health from chemical exposures than changing to safer drycleaning machine or qualified ventilation system. Also, they admitted that they do not use PPE because they are bulky and uncomfortable. Furthermore the participants perceived that PPE is for emergency only in the case of lots of chemicals spill in the shop. Following participants' comments expressed their feeling about using PPE.

"There is no way to wear protective equipment [PPE]…If there is better gloves that comfortable and sensitive like skin, I would like to wear them (PPE)…It [PPE] is only for emergency, so we do not need to use it while we are working."

4. DISCUSSION

Health and safety issues related to drycleaning work including damage of organs such as heart [1], liver [7], kidney [12], abortion [16], cancer[4], [8], [9], [13]-[15] as well as chemical exposure, burns, and ergonomic injuries, central nervous system [1], [10], [11] have been investigated for recent decades through epidemiological and experimental studies. Recently enacted EPA regulations encourage drycleaning facilities to reduce PCE- most common hazardous possible human carcinogen solvent-and stop installing transfer drycleaning machines that expel more chemicals into air to protect environment around drycleaning facilities [21]. The regulations are targeting on reducing cancer incidence at the level of geographical area including drycleaning facilities.

As the largest ethnic group working in the United States drycleaning industry, Korean-American drycleaning owners' attitude or concerns about health and safety issues might be influence on not only various ethnic workers employed in the shops but also themselves. Although Korean-Americans own a lot of drycleaning facilities and working in the drycleaning industry, few study has been conducted with Korean-Americans due to inaccessible reasons such as ineffective communication method with linguistic and cultural differences [22]. In this aspect, focusing on Korean-American drycleaners might have great advantages in terms of assessing and disseminating of the health and safety issues.

As a qualitative research method, two focus groups were employed for this study. The focus group findings indicated that Korean-American drycleaners did not perceive chemical exposure as a major health issue. They were more concerned about work-related stress and long hour work without sufficient rest. The less concerns about chemical exposure among Korean-American drycleaners are making them not to change to safer work environment reducing chemical leakage in the

shop as well as not to have less intention to use PPE due to limited knowledge about the hazardous nature of chemical exposure and discomfort. Training program should be developed to increase knowledge of chemical exposure, use of PPE and change to safer worksite environment for this population.

There are a few limitations in this study. The primary limitations are from qualitative method itself. There is a limitation of generalization due to small participants in each focus group. Only 18.8% of owner populations were participated from about 244 shops [18]. Another shortcomings related to methodology are the dependency of respondents with one another and with the researcher, and difficulties with summarization and interpretation of the results. Even though focus groups have limitations stated above, this method is highly valuable when researchers explore study problems what studies need to be conducted.

The second limitations are from recruiting methods. For the convenience, recruiting was from three areas, Ann Arbor, Southfield and Detroit. Therefore most participants were from relative big cities with bigger facilities. It is required careful interpretation when applying this result to small facilities. Employees (not owners) might have different concerns about health and safety issues, but all study participants were only those who were working owners in the drycleaning industry. Therefore it is possibly could not reflect both owners and workers' health and safety issues in Michigan. Women and workers who newly entered in drycleaning industry also have not been considered in this study, as well.

Finally, the limitations of this study was using outdated data more than 10 years ago. However, recent studies dealing with the issues on drycleaning and health and safety are rare and risks and challenges are still exist in many countries that are not provide any health and safety measures for the dry cleaning companies until now.

Despite the limitations stated above, these qualitative data will provide useful information to drycleaners, safety and health professionals, and researchers. The findings will be used to guide the development of an intervention for drycleaning to increase their knowledge of chemical exposure, change to safer worksite environment including PPE use.

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