

Migrant women farm workers in the occupational health literature

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Abstract. Little attention has been given to the vulnerable populations of migrant women agricultural workers. A systemic review in PubMed was carried out (1990-2008) using terms related to migrant agricultural workers, with specific focus on women. Case studies from Lebanon and California are presented to highlight key physical, psychosocial, and cultural risk factors among these working populations. The review revealed a host of potential problems that span from pesticide exposure and musculoskeletal disorders to socio-cultural barriers. Comprehensive exposure-outcome and intervention studies focusing specifically on migrant women in agriculture are lacking. In depth studies focusing on the work environment of migrant women workers in the agricultural sector are needed. Personal and environmental factors that influence health should be considered in any effective intervention aiming to influence policy making and have a positive impact on these vulnerable working populations.

Keywords: Migrant workers, women, agricultural work, physical and psychosocial factors, health

1. Introduction

The agriculture sector employs about half the world's entire workforce, with an estimate of 1.3 billion workers [35]. Globally, women account for about 40% of the workforce in agriculture, and regionally, they represent 47% in Africa, 17% in Latin America and the Caribbean, 44% in Asia, and 21% in the US [36,38,78].

Migrant women agricultural workers are exposed to a myriad of occupational hazards and stressors including injuries; pesticide illnesses; reproductive health problems; respiratory, dermatological, and infectious diseases and Musculoskeletal Disorders (MSDs), among others. In addition, migrant women may face a range of socio-cultural problems due to their transient status. Unfortunately, these health and

psychosocial problems have been largely ignored by occupational health professionals.

2. Methods

This paper is a systematic review of the burdens and health problems faced by migrant women agricultural workers throughout the world. PubMed database was searched for articles in peer-reviewed journals published in the years 1990-2008.

The search identified 128 articles in PubMed, out of which 47 papers were excluded because they did not meet the general criterion; for example, the focus was on children or adolescents, males only, or non agricultural work. Hence, 81 relevant papers from the PubMed search were selected.

3. Results

The 81 articles identified by the PubMed search spanned a range of occupational health issues. The majority of study designs were quantitative in nature,

but several qualitative, intervention, and case report studies were also identified. This review focused on the burdens faced by migrant women agricultural workers, including: 1) psychosocial and cultural problems, and 2) physical health problems.

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3.1. Psychosocial and cultural problems

Psychosocial, cultural, and legal barriers that may contribute to negative health outcomes to migrant female agriculture workers include lack of stable residence and social support, linguistic and cultural barriers, discrimination and fear of legal persecution for some, limited access to health care services, lack of safety training and oversight, acceptance of high-risk tasks and precarious job conditions. The additional burden of homemaking and raising a family compounds the psychosocial problems faced by migrant women agricultural workers.

The social changes experienced by migrant women workers, including the loss of social network and support [37] constitute additional psychosocial burdens. Discrimination against migrant workers has been reported in the form of racism, sexism, disability, and health conditions, in addition to discrimination based on national origin or immigration status [17-18].

Similar to migrant workers in other industries [23,39,87], migrant women agricultural workers are likely to report general feelings of displacement, geographical and social isolation, loneliness and stress [48], as well as not being provided with a safe work environment, safety training [4] or personal protection equipment.

3.2. Physical health problems

Several studies have shown that migrant workers, in general, and agricultural workers, in particular, commonly have higher rates of occupational injuries and fatalities than non-migrant workers [6,8-9,19,47,49,53,65]. This may be due to the fact that migrant workers tend to be concentrated in high-risk industries, such as agriculture and construction, and they usually perform high-risk jobs within these industries.

The diseases and illnesses generally experienced by women agricultural workers are expected to be exacerbated in vulnerable migrant women working in agriculture due to the added complex socio-cultural burdens. These diseases have been reported to be due to exposure to various substances commonly present around agricultural environments, including grain dust, gases and fumes from confined animal environments and silos, and mold and bacteria in grain and hay, among others [42,58,86]. Agricultural workers are also commonly exposed to pathogens

that can cause various diseases and disorders [43,54-55].

Pesticide exposure in agricultural environments is one of the major causes of acute and chronic illnesses among workers. The health effect of pesticide exposure varies by many factors, including crop type, chemicals used, dosage, and the application mode, among other environmental and personal factors [3,12-13,21,32,40,50,66,68,75,93]. Several studies have shown the adverse effects of pesticide exposure to women working in agricultural environments and their children with a host of negative reproductive outcomes [2,7,14,16,22,28-30,44,62-63,73,88-91]. Our literature review revealed that pesticide training and knowledge about safe and proper procedures for storing, handling and applying various pesticides could reduce the adverse health outcomes due to exposure to these toxins [4,20,31,67,72,74,79].

3.2.1. Musculoskeletal disorders in agriculture

Musculoskeletal disorders (MSDs) are the most common of all occupational non-fatal injuries and illnesses for agricultural workers [52-53,81-82,84].

While, in general, women in agriculture tend to not perform tasks that require very forceful exertions (e.g., lifting heavy loads), they do tend to perform tasks that require frequent and repetitive actions, such as manual planting, harvesting, and maintaining plants and soils. These types of tasks have been shown to be associated with MSDs of the lower back (Low Back Disorders; LBDs) and the upper limbs (Cumulative Trauma Disorders; CTDs) [26-27,59-60]. Women workers, especially in developing countries, are expected to be at risk for developing MSDs due to the added physical burden of performing household work [33-34]. Furthermore, women agricultural workers generally have a low socioeconomic status with a higher burden of disease.

The added burden of housework on women's musculoskeletal health has been generally ignored in most past studies. Regardless of their employment status, women remain largely responsible for housework and childcare tasks; activities that have clear implications for their health and well-being. Women's domestic labor (i.e., housework) remains largely unexplored in the literature on migrant women's health.

3.3. Case studies

To highlight some of the unique burdens faced by migrant women farm workers, case studies from California and Lebanon are presented.

3.3.1. California

Overview of California agriculture

California is the US largest agricultural state with roughly 50% of the nation's fruits, vegetables, and horticultural specialty production occurring in California [11,61]. Agriculture is one of the largest industries in the state, with estimated cash receipts exceeding \$27 billion [45,53,80,83]. California agriculture relies heavily on migrant and seasonal workers, who account for about two-thirds of the total workforce, and come mainly from Mexico and other Central American countries, [53,58,83].

Migrant women in California agriculture

Women account for about 26% of workers who perform seasonal agricultural services in California [77-78]. The literacy level for both migrant men and women workers is very low (71% finishing eighth grade or lower) [78]. Being single and uneducated puts migrant women agricultural workers in California in disadvantageous social and legal circumstances, and hence, the women usually face a host of psychosocial burdens. These women tend to have limited social networks and support and may struggle to acculturate in the local society.

Housing and working conditions

The housing conditions of migrant agricultural workers, in general, are considered sub-standard [85]. About 50% of the housing for hired farm workers in California is found to be overcrowded, and 25% is found to be extremely overcrowded. Many of the housing structures occupied by migrant workers are irregular structures not intended for human habitation, with a sizeable proportion lacking either plumbing or food preparation facilities, or both [83,85]. The added burden of homemaking is expected to exacerbate the health and psychosocial effects of poor working and housing conditions that are commonly faced by migrant women workers in California and elsewhere. Key health problems include pesticide illness, respiratory disease, infectious disease, dermatological disease and MSDs [27,53,58,83].

3.3.2. Lebanon

Overview of agriculture in Lebanon

Lebanon's economy relies substantially on the agricultural sector, with almost 12% of the GDP gen-

erated from agricultural activities (compared to an average of 5% for the rest of the world). An estimated 7.3% of the "official" workforce of Lebanon is agricultural workers.

Migrant agricultural workers in Lebanon

It is widely recognized that most migrant workers in the agricultural sector come from Syria. In general, the number of Syrian laborers working in various Lebanese sectors has been reported to fluctuate between 200,000 and one million, with an overwhelming majority working illegally [76,92]. The official number for Syrian workers in various Lebanese sectors was estimated at only 471 in 2006 [10].

Women agricultural workers in Lebanon, are exposed to a number of occupational hazards, including exposure to pesticides [69-71]. They also have increased risk factors for respiratory, infectious, and dermatological diseases, and typical MSD (from stooped work, repetitive motion, awkward body postures, prolonged kneeling, etc.).

Olive industry in Lebanon

It is estimated that there are about 13 million olive trees in Lebanon, covering more than 20% of the cultivated land, with 40% being in the Northern region of the country [24]. Olive picking in Lebanon is mostly manually performed [41] by Syrian migrant men and women agricultural workers.

Migrant women in the olive industry

Women involved in harvesting the olives are seasonal agricultural workers who come with their families from remote disadvantaged communities in Syria. They are generally poor, of low literacy level, and in need of work. These women are rarely directly paid for harvesting the olives; it is generally the husband or the male head of household who is paid on behalf of all workers in his family.

Housing and working conditions

During the harvesting season, the migrant olive workers occupy temporary residential units put in place by the olive orchard owners. Poor environmental housing conditions prevail in these units. They generally suffer from dampness, leaks in rainy weather, improper ventilation, lack of sunlight, in addition to crowding. Two or three families sometimes occupy the same unit, leading to a situation of pooled consumption in which they all share the shelter, food and heating.

Due to their transient living arrangement, undocumented worker status, and discrimination, migrant women olive harvesters have limited access to medical, social, and governmental services.

Women hand pick the olives either directly from the trees, or more commonly, pick the fallen olives

from the ground (usually on plastic or cloth blankets). The postures assumed by these women (stooping, kneeling, and twisting) are likely to expose them to MSDs risk factors of the lower back and knees [27]. In addition, the repetitive and rapid hand picking expose them to the risk of developing MSDs of the hand and wrist (e.g., carpal tunnel syndrome, tendinitis, etc.) [25,56-57].

4. Discussion

Many countries in the world have a shortage of labor in the agriculture industry and rely heavily on migrant and seasonal workers, of whom women make up a sizeable proportion. Due to their migratory and transitory status, migrant women workers are an especially vulnerable population in agriculture. They face a host of unique and complex set of psychosocial and cultural burdens, which makes them particularly vulnerable to the existing physical hazards commonly faced by agricultural workers.

The systematic literature review revealed several concerns related to the research done on migrant women workers in the agricultural sector around the world. With the increased reliance on migrant and seasonal workers especially in Europe and Asia, more attention should be paid to the complex issues and burdens faced by migrant populations of the agriculture sector in both developed and developing countries around the world. There is a thin literature on interventions undertaken on migrant agricultural workers. Furthermore, poverty, legal issues, deportation, low education, discrimination, exploitation, lack of union for the protection of rights, limited access to health services, lack of insurance and workers' compensation, and the lack of social justice, are not featured in any of the published interventions. Instead, the research mainly focused on personal behavioral factors that affect migrant agricultural workers' health, such as using personal protective equipment, receiving training on safety issues, and complying with safety standards.

The case studies from California and Lebanon demonstrate some of the unique problems faced by migrant women agricultural workers. First, the transient nature of this migrant population makes work arrangements rather informal and lacking the formal/legal contracts commonly practiced in other industries. This may expose the women to economic exploitation and limit their economic betterment. The transitory situation also commonly results in a

limited social network and social support among the women. Second, the high number of unauthorized workers among migrant women agricultural workers places unique barriers to this population for accessing health and social benefits and services that is compounded by the continuous fear of retribution and/or deportation. The problem is further complicated by potential language and dialect barriers, as in the case of California and Lebanon, respectively. These issues raise serious questions about the exploitation and discrimination faced by these women in agriculture. Lastly, working women in general face the unique situation of double-burden stemming from paid work and housework.

At the basic level, descriptive research is needed since there is no detailed information about the issues and problems faced by these women populations. It is evident that basic epidemiological studies are needed to identify the occupational and non-occupational risk factors encountered by migrant women in agriculture.

Adopting a community based participatory research (CBPR) approach has proved to be conducive to successful research outcomes and interventions [5,15,40,50-51,64,66]. A CBPR approach allows exploring any situation from both the researchers' scientific-academic perspective and the community's practical perspective [1,46].

The problems faced by migrant women agricultural workers are multi-layered and are both occupational and non-occupational in nature. Researchers have to acknowledge this population's complex and intricate situation that spans a wide range of issues.

Potential interventions should consider structural, cultural, physical, and psychosocial factors, and incorporate both behavioral and structural elements, such as training, work organization and workplace structural modifications. Governments can take a pragmatic approach to solve the undocumented working status of migrant workers if foreign labor is proven to be needed in the agricultural sector. Bulat et al. (2006) proposed the "legalization" of agricultural workers as a solution for some of their problems. Policy implications and changes should be at the center of an effective intervention aiming to have a positive impact on these vulnerable working populations. Finally, information on the problems faced by migrant agricultural workers around the world may be disseminated by the national and international media by highlighting the vulnerability of this population, which would put pressure on stakeholders and governments to change.

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