Occupational Hazards in Ethiopian Flower Farms

Assessment of level of Knowledge, Practice and Associated Factors of Occupational Hazards among Floriculture Workers of South West Shewa Zone, Oromia ,Ethiopia.

by Mekuriaw Alemayehu, PhD

Outline of the presentation

- Introduction
- Conceptual framework of the study
- Justification of the study
- Objectives of the study
- Methods
- Results and Discussion
- Conclusion
- Recommendation

Study Background

Ethiopia's flower industry has experienced rapid growth in recent years, driven by favorable climate, government support, and a readily available workforce. However, this growth has come with challenges, including the emergence of various occupational hazards, such as chemical, biological, physical, psychosocial, and ergonomic risks.

Chemical Hazards

Intensive use of fertilizers and pesticides poses significant risks to workers' health.

Physical Hazards

Workers often face harsh environmental conditions, including excessive heat and cold, for long hours.

Psychosocial Hazards

Stressful work environments and demanding workloads can contribute to mental health issues.

Conceptual framework of the study

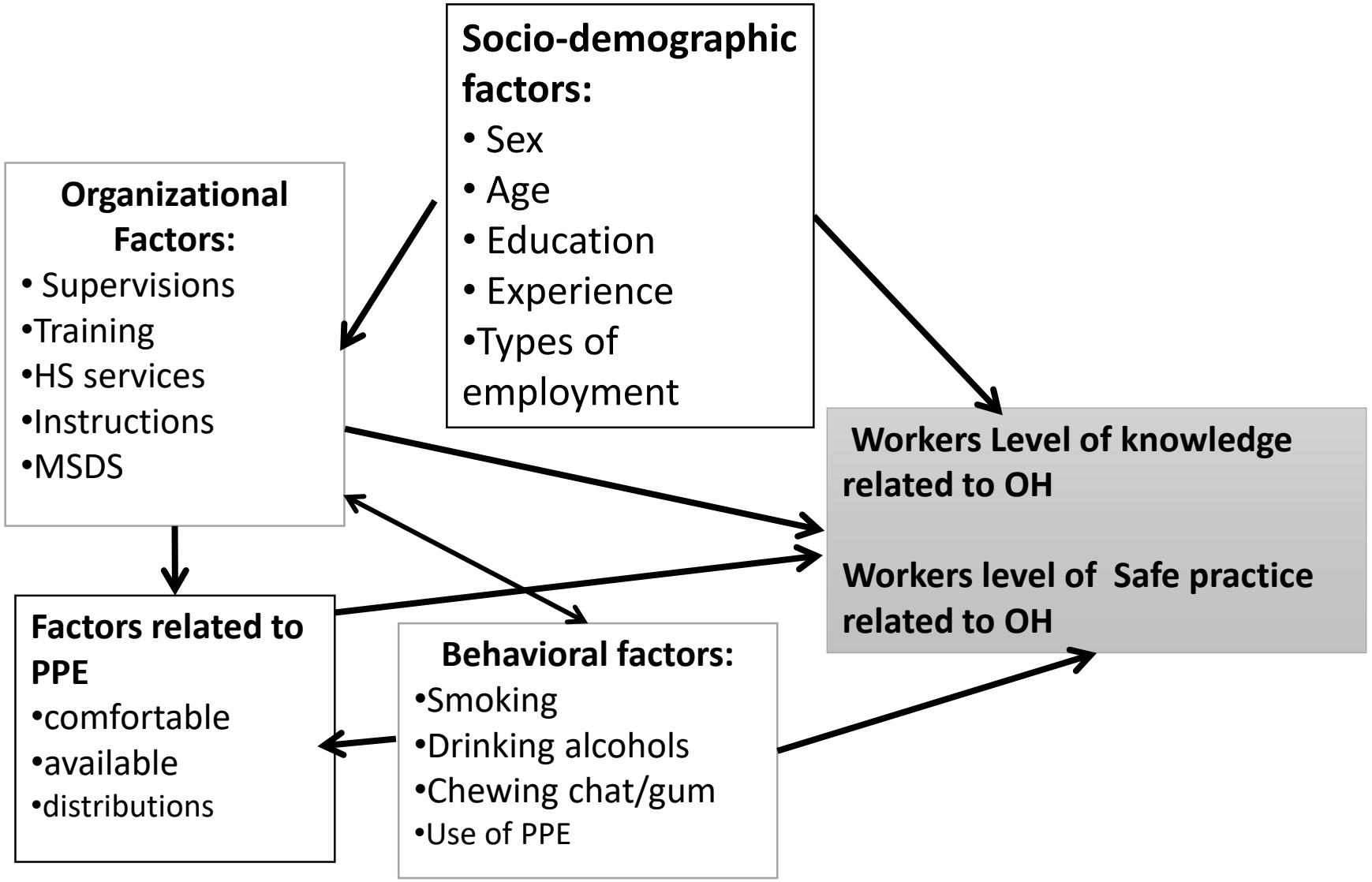

Figure 1: conceptual framework for knowledge, practice and associated factors of OH among floriculture workers 2015.

Justification of the study

- Floriculture in Ethiopia is rapid growing sectors for foreign exchanges.
- It has a major public health issues due to use of many chemicals and low awareness of Occupational Health Safety (OHS) (Getu M.and Defar A.,2013).
- Studies done in Ethiopia showed the health problems (Defar A.,2013) and environmental challenges (Nigatu T, 2010 and Getu M, 2013).
- But there is limited data on the workers knowledge and safety practice.
- Thus, this study was designed to determine the workers level of knowledge and safety practice related to OH in floriculture;
- It will provides information to other researchers; policy makers.

Objectives

General objective

- To assess knowledge, practice and associated factors of occupational hazards(OH) among floriculture workers in South West Shewa Zone, Oromia region, Central Ethiopia.

Specific Objectives

- To estimate worker's level of knowledge about OH among floricultures of south west shewa zone.
- To determine worker's level of safety practice related to OH in floriculture.
- To identify Factors affecting workers Knowledge on OH
- To Find out Factors affecting workers safety Practice of OH in floriculture.

Study Design and Methodology

The study employed a cross-sectional survey design, involving 471 flower farm workers in Southwest Shewa zone. A stratified random sampling technique was used to select participants, ensuring representation from different flower farms in the region.

1

Data Collection

Data was collected using a structured, interviewer-administered questionnaire, covering socio-demographic characteristics, knowledge of occupational hazards, safety practices, and factors influencing these aspects.

2

Data Analysis

Data was analyzed using SPSS version 20, employing descriptive statistics, bi-variable and multivariable linear regression analyses to assess associations between variables.

3

Reliability Testing

Cronbach's Alpha Coefficient was used to assess the reliability of the knowledge and practice items, with values exceeding 0.65 indicating reliability.

Results and Discussions

- 451 respondents were considered in the analysis with 95.7 % response rate.
- Among study respondents, 325(72.1%) were females and the mean (±SD) age was 24.1 (± 6.5) years and ranged from 15 to 49 years.
- 289(86%) of them were Oromo and 36 (8%) of them were Gurage ethnic groups.
- Sixty-six percent (66%) of the included participants were married.

Results and Discussions cont…

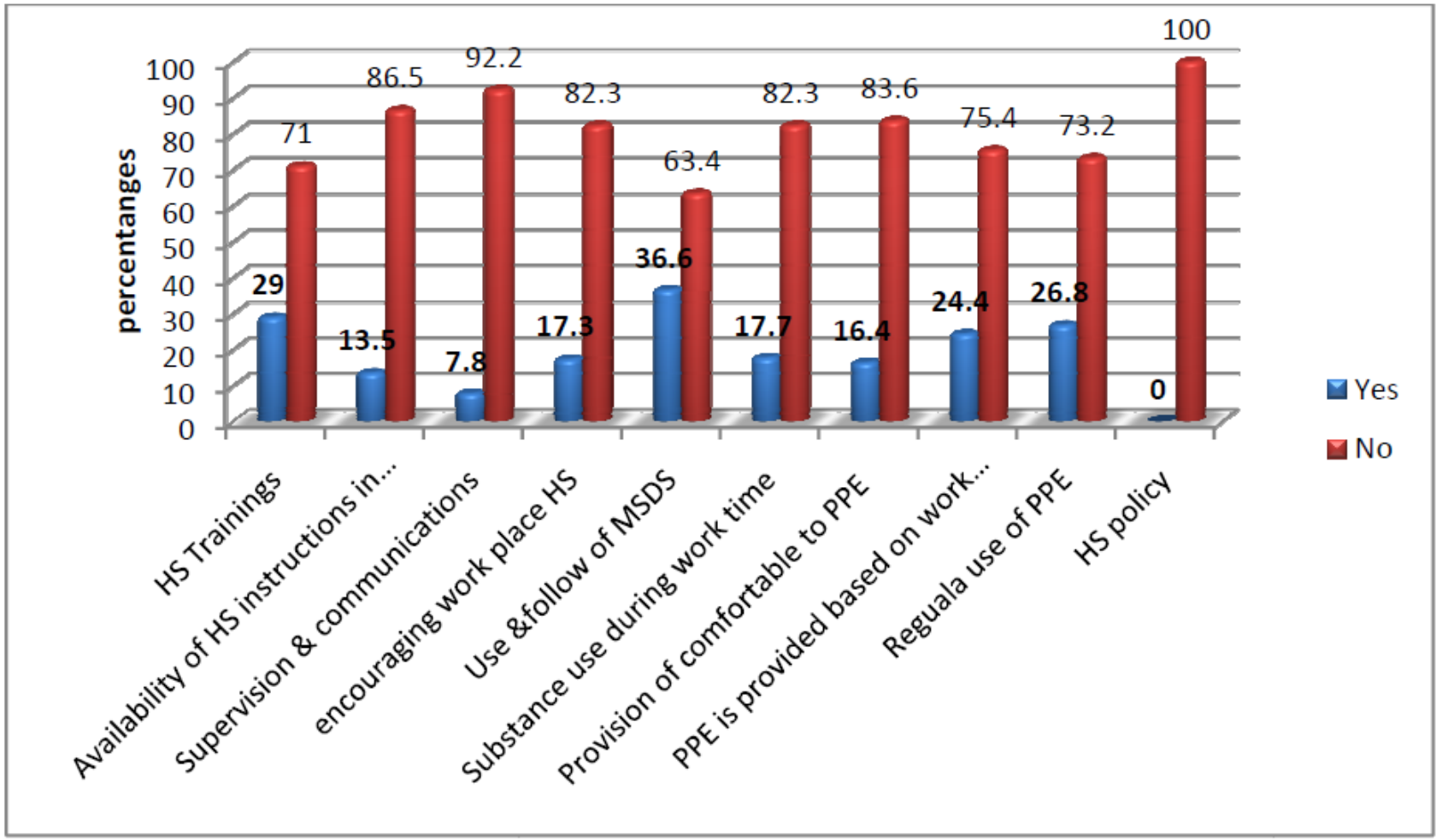

Fig.1: Organizational and behavioral characteristics of the respondents of flower farm of southwest Shewa Zone, June 2015

Result and Discussions cont…

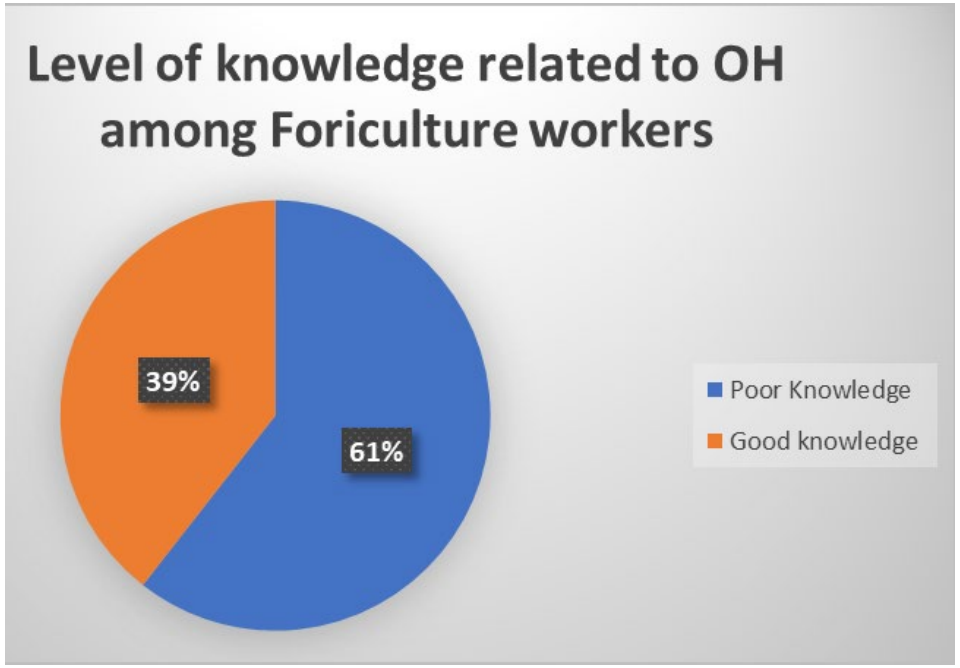

Fig 2. Level of Knowledge related to OH among Workers

- The prevalence of workers with good knowledge related to OH is 39.2% (95% CI:34.8, 43.9).
- Similar with study done in Ziway and Arsi Negelle, Ethiopia (Amera,2007),Tanzania (Lekei,2014), Palestine(Zyoud,2010).
- But not in-line with the study done in wolkite, Ethiopia 72% (kaliya P,2011), India 70% (Francis,2013), Brazil 86% (Rebeiro,2012).
- This might be attributed to difference in source population and socio-demographic characteristics.

Result and Discussions cont…

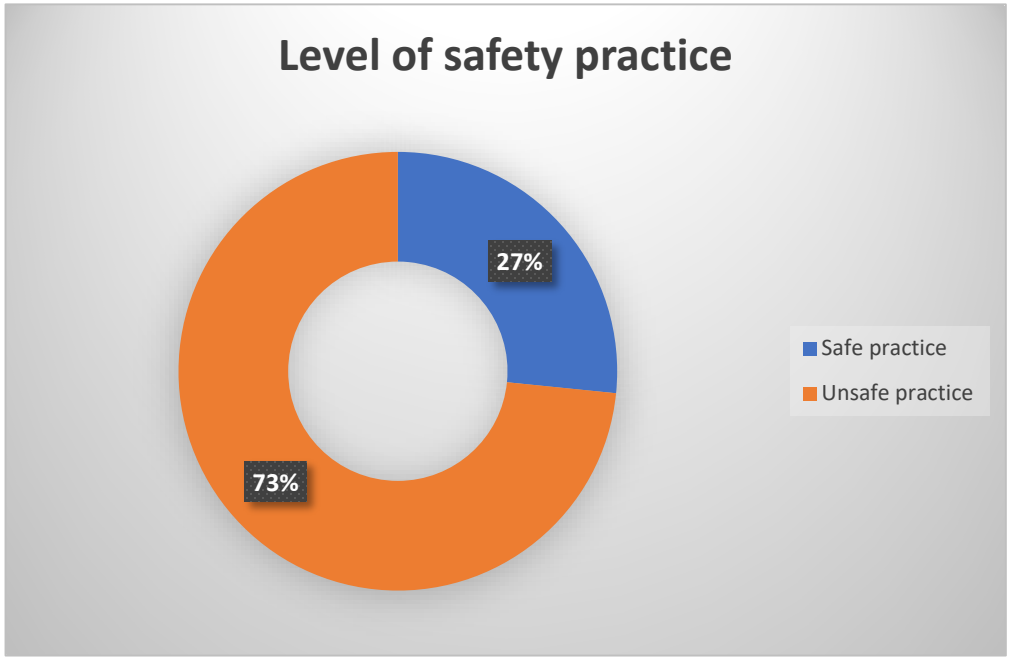

Fig 3. Safety practice related to OH among Workers

- The level of workers safe practice in flower farms is 26.6%. this is slightly lower than the study done in Jamaica 36.7% (Henery,2013) and Chinese 32.3% (Zhang,2011)
- This is lower than the study done in Palestine 63.5% (Zyoud,2010), India 60% (Francis, 2013) and Brazil 80%(Reberio, 2012).
- The possible explanation might be difference in source population methods of data analysis used and lack labor standards in agriculture.

Result and Discussions cont…

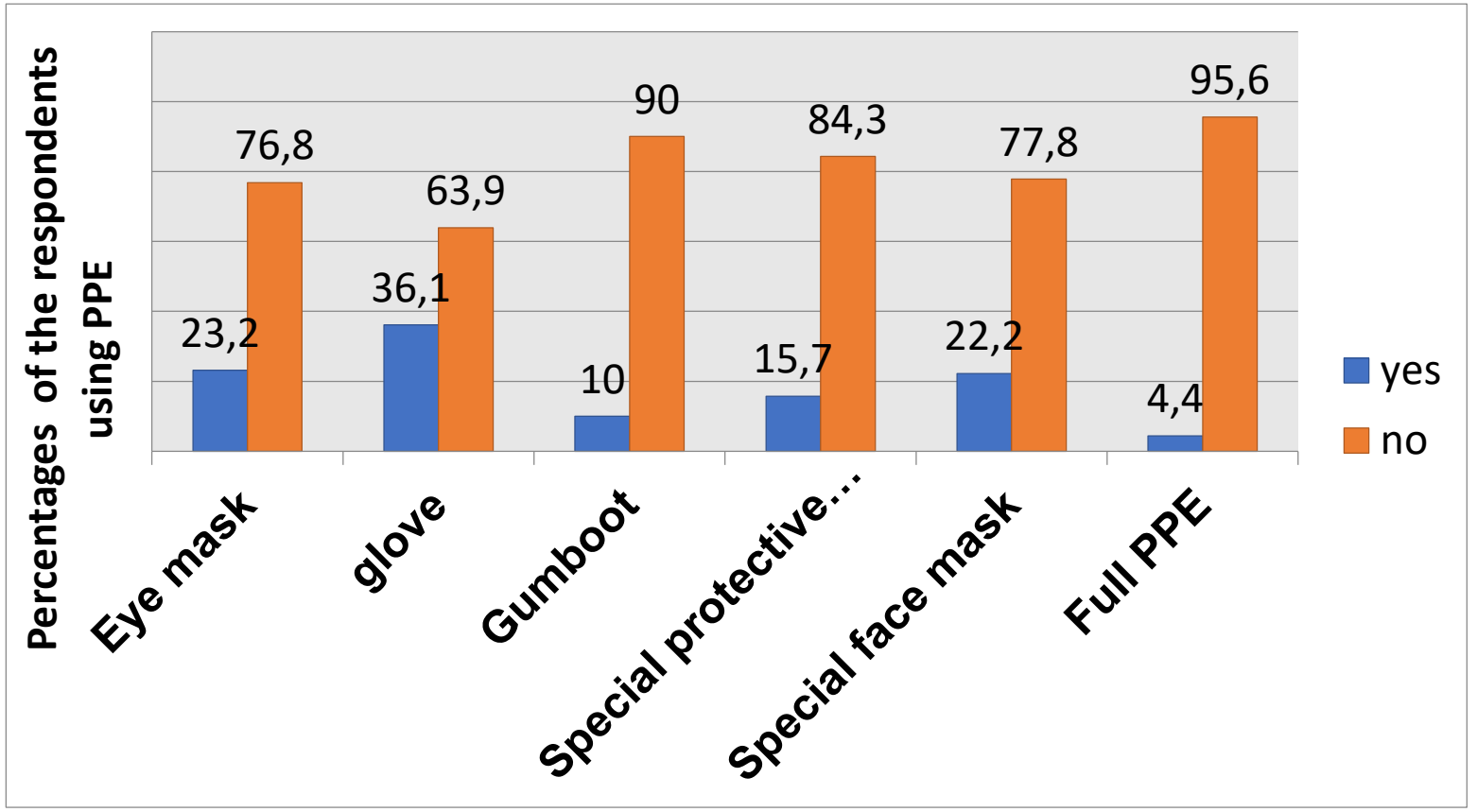

Fig 4: showing Types of PPE used by Floriculture respondents of Flower Farm South West Shewa Zone, Ethiopia, 2015.

Result and Discussions cont...

- The workers in flower farm were working their daily tasks without use of PPE, chemical spraying worker were used some of PPE.
- But, they did not follow wind direction when spraying, not used full PPE specially their supervisor and workers assisting them.
- Scarcity of welfare facilities in the farm and absence of warning sign while spraying chemicals at entry room of green house.
- In cold room female workers were worked without any PPE.

Table-1: Factors associated with level of Knowledge related to OH

Variables characteristics	Numbers (%)	Knowledge related OH		Similar with the study done in	Inconsistent with study done in
		Unstandard. coeffi. of β	95% CI for β		
Educational status:		0	0	***Sebeta, Kenya, Nepal, Palestine***	Tanzania, India & Jamaica
No formal education	169(37.2)	2.37	(0.4,4.33)*		
Primary(1-6grades)	117(25.9)	6.01	(2.95,9.07)**		
Secondary (7-12 grades)	118(26.2)	20.03	(16.30,23.75)**		
Diploma and higher education	47(10.7)				
Condition of employment: Temporary	211(46.8)	0	0	***Palestine, Spain & India***	
Permanent	240(53.2)	5.35	(2.50,8.19)**		
Work experience: ≤ 1 year	290(64.3)	0	0	***Palestine, Nepal, Ecuador & span***	India
≥ 2 years	161(35.7)	5.97	(4.22,7.72)**		
Health and safety training	131(29.0)	2.34	(0.73,3.95)*	***Jamaica, Brazil & Tulane***	Chinese, Philippines
Workers encouragement on WP health and safety	78(17.3)	2.93	(1.15,4.71)*	***Palestine, Tulane, Brazil***	
Availability of health and safety written instruction in local languages	51(11.3)	2.9	(0.89,4.92)*	***Sebeta, Jamaica, Brazil and Spain***	Tanzania

Note:0= reference, ** = significant at P< 0.001, *= significant at P <0.05 and R^2Adjusted =0.711 which showed that model fitness of the variable (Independent variables explains 71.1% variability in dependent variable in the model and 28.9% left as unexplained variations)

Table-1: Factors associated with Safety practice related to OH

Variables characteristics of the respondents	Numbers (%)	Safe Practice related OH		Consistent with the study done in	Inconsistent with study
		Unstan.coef β	95% CI for β		
Marital status: Single	155(34.4)	-2.11	(-4.18, -0.05)*	***Kenya, Tanzania, Jamaica***	
Married	296(65.6)	0	0		
Availability and awareness raising on WP labels, symbols and other dangerous signs	51(11.3)	5.15	(1.81,8.49)**	***Zimbabwe, Kenya, Palestine***	
Provision of comfortable PPE to work (yes, no)	74(16.4)	4.58	(1.89,6.28)**	***Zimbabwe, Tanzania & Palestine***	**Jamaica**
Use of material safety data sheets (MSDS)	165(36.6)	-0.38	(-2.37,1.61)		
Regular use of PPE while working and storing in designed areas:	121(26.6)	17.53	(13.36,21.71)**	***Tanzania, Palestine, India***	
PPE provided to workers based on the nature of their work and environmental conditions	111(24.6)	5.01	(0.55,9.46)*	***Zimbabwe, Tanzania, Palestine, Spain***	
Knowledge scores about OH: (good, poor)	177(39.2)	7.29	(3.87,10.73)**	***Palestine, India***	
Constant		34.054	(25.54,42.57)**		

Note: 0= reference, ** = significant at P< 0.001, *= significant at P <0.05 and R^2Adjusted =0.683 that showed model fitting of the variables (68.3% explained variations by variables in the model and 31.7% unexplained variations left).

Recommendations for Improvement

The study's findings underscore the need for comprehensive interventions to improve workplace health and safety in Ethiopia's flower industry.

1

Education and Training

Employers should prioritize providing workers with adequate education and training on occupational hazards, tailored to their level of education and work experience.

2

PPE Provision and Instruction

Ensure the provision of appropriate PPE, including instructions on its proper use and storage, to all workers.

3

Safety Communication

Implement clear and effective safety communication strategies, including the use of local languages, to ensure workers understand and comply with safety protocols.

Limitations and Future Directions

- The study acknowledged limitations, including reliance on self-reported data, which may be subject to recall bias.
- Future research should explore the use of qualitative methods to gain a deeper understanding of workers' perspectives and experiences.

Qualitative Research

Longitudinal Studies

Multi-Stakeholder Collaboration

Conclusion

- The floriculture workers knowledge related to OH associated to their work was low.
- Majorities of study participants were practiced unsafely in floriculture.
- Provision of comfortable PPE to work, regular use of PPE, Knowledge scores were predictors of safe practice.
- Educational levels, work experience, types of work agreement, HS training, were Predictors for knowledge of flower workers.
- HS training, provision of appropriate PPE to work and Regular use of PPE for floriculture workers to increase the knowledge and safe practice related to flower farm hazard.

Call to Action

The findings of this study serve as a call to action for all stakeholders involved in the Ethiopian flower industry. By working together, we can create a safer and more sustainable future for workers and the industry as a whole.