



► Chemical safety at work: What's gender got to do with it?

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Webinar: Gender and chemicals in different sectors

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Key points

- Recognising diversity at the workplace, including gender differences, is critical for OSH
- A number of social and biological factors impact the effect that chemicals have on worker health
- Not only may *exposure scenarios* be different, the *impact of exposure* may vary
- Increased research is needed on gender aspects of chemical exposures and effects in order to develop evidence based policies



► Exposure considerations

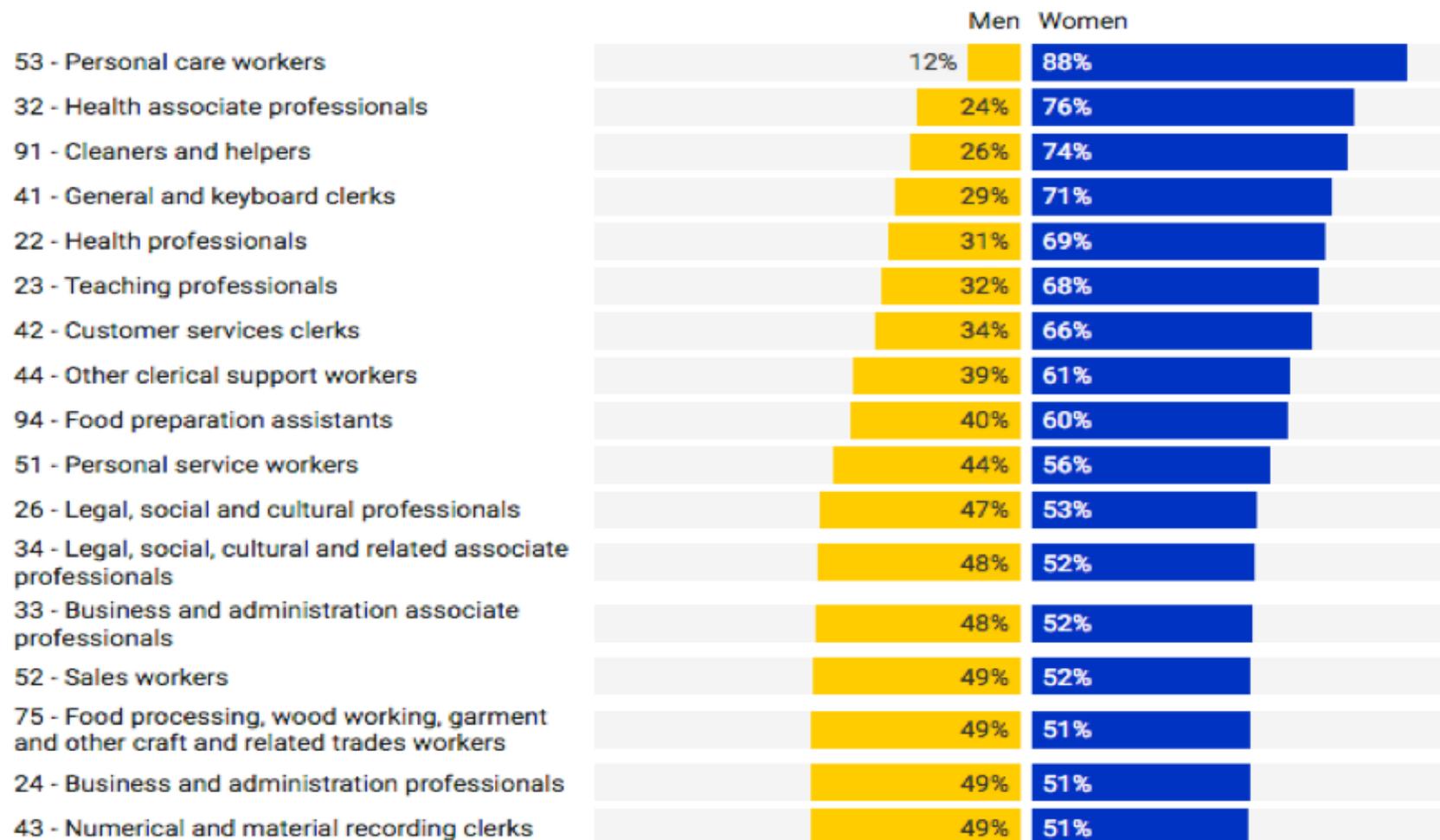
- ▶ Due to differences in social & occupational roles, and prevailing harmful stereotypes, men and women at work face different exposure scenarios in regards to:
 1. the chemicals encountered
 2. the magnitude; and
 3. the duration of exposure

- ▶ All of these factors are highly dependent on the work sector and region – difficult to make generalizations



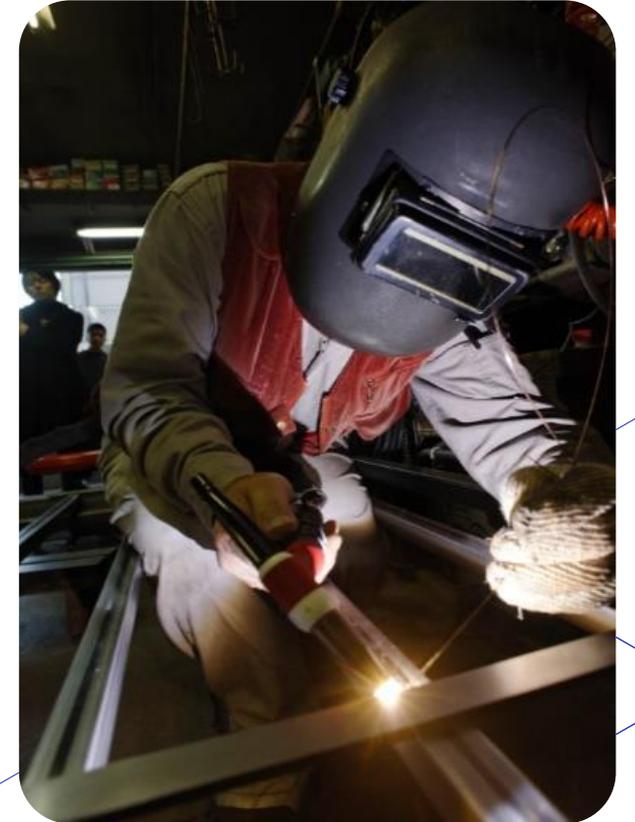
Occupations by gender

Percent of employment by sex and occupation (ISCO-08 at the 2-digit level), weighted average for 121 countries using the latest year available



► Exposure inequities

- Trends have shown that men tend to work in industries that include exposures to carcinogenic substances (ILO 2013; Scarselli et al. 2018)
- Work predominantly undertaken by women is often presumed to be less hazardous: may receive less attention for critical workplace procedures (risk assessment, worker training, etc.)
- Work tools and personal protective equipment (PPE) - poor fit can lead to reduced protection, increase risk to exposure and accidents
- Women have less decision making power, representation (ILO, 2013)



▶ Health effect considerations

- ▶ Physiological and hormonal differences create specific susceptibilities to the effects of toxic chemicals
- ▶ Female workers are at particularly high risk during child bearing years and pregnancy: even low-doses might elicit dramatic and irreversible effects
- ▶ More likely to store chemicals in adipose tissues. Particularly hazardous for chemicals that bioaccumulate (POPs)

- ▶ Pesticides in agriculture
- ▶ Heavy metals in mining
- ▶ Informal sector (E-waste, crafts and manufacturing)



▶ Case study: Women in artisanal gold mining operations

EXPOSURE

- Clear division of labour
- Considered easier, less dangerous work
- Combined childcare



HEALTH EFFECTS

- Reproductive hazard: reduced fertility, spontaneous abortion and congenital deficits or abnormalities
- Bioaccumulation: women more likely to store in their adipose tissues
- Risk for infants and children

▶ Occupational cancers

- ▶ Many occupational studies do not report gender disaggregated data, those that do cite an alarming trend of **increased cancer rates** in female workers exposed to chemicals
- ▶ A different cellular response to oxidative stress between men and women in cancer susceptibility has been hypothesized, raising the question of whether the **classification of occupational carcinogens should be gender specific** (Ali et al., 2016)



▶ The tip of the iceberg

- ▶ OSH research for female workers has focused on limited sectors
- ▶ Very few physiological or toxicological studies have been carried out on chemical exposures, and the studies for gender diverse persons are virtually non-existent
- ▶ Women's occupational diseases are often under-diagnosed, under-reported and under-compensated compared with men's, making it difficult to extrapolate from occupational disease registries

▶ ILO Role and Response

The ILO was founded on the concept of guaranteeing protection for the life and health of all workers

- ▶ More than **50 legal instruments** on the protection of workers from chemical hazards
- ▶ **ILO Maternity Protection Convention, 2000 (No. 183)**
 1. Pregnant women should not be obliged to carry out work that is a risk to her (or child's) health and safety
 2. Elimination of any workplace risk, additional paid leave to avoid exposure if the risk cannot be eliminated, and the right to return to her job or an equivalent job as soon as it is safe for her to do so
 3. Recommendation (No.191): specific risk assessment, management of risks for exposure to biological, chemical or physical agents that are reproductive hazards
- ▶ **Guidelines for Gender Mainstreaming in Occupational Safety and Health** to assist policy-makers and practitioners in taking a gender-sensitive approach for the development and implementation of OSH policy and practice

Take away points

- ▶ Chemical safety at work can no longer afford to be gender-blind
- ▶ Different societal roles, expectations and stereotypes = unique chemical exposure scenarios, requiring appropriately designed control measures
- ▶ Increased OSH research that is gender sensitive
- ▶ Gender based classification of hazards, carcinogens (OELs)
- ▶ Gender mainstreaming into policies at **all levels**
- ▶ Unless we **recognize, respect and address** gender diversity, we will never be able to fully protect **workers, their families and their communities**





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Thank you

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References

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Ali I, Högberg J, Hsieh JH, Auerbach S, Korhonen A, Stenius U, Silins I. Gender differences in cancer susceptibility: role of oxidative stress. *Carcinogenesis*. 2016;37:985–992. doi: 10.1093/carcin/bgw076.

Scarselli A, Corfiati M, Di Marzio D, Marinaccio A, Iavicoli S. 2018. Gender differences in occupational exposure to carcinogens among Italian workers. *BMC Public Health* 18:413-413.

For more info: ILO Chemicals: https://www.ilo.org/global/topics/safety-and-health-at-work/resources-library/promotion/WCMS_731974/lang--en/index.htm

[Chemicals and Gender: http://gender-chemicals.org/chemical-safety-at-work](http://gender-chemicals.org/chemical-safety-at-work)