

Improving health and safety in small businesses

Small businesses play an important role in the economy, employing over half of all Canadians working in the private sector. Small businesses have unique challenges with occupational health and safety (OHS). Overall, workplace fatality rates tend to be higher in industries dominated by small businesses. Yet an accident at any one small business is relatively rare, so both workers and owners don't have a sense of this increased risk. Small businesses are also more likely to face financial instability than larger firms. Together, these situations create challenges for small businesses in understanding and managing the risks of workplace injuries.

This systematic review was conducted to find out how small firms understand and incorporate OHS processes, and what OHS interventions are effective in supporting the health and safety of workers in small businesses. The overall research question was: *“What understandings, processes and interventions influence OHS in small businesses?”*

Two specific sub-questions were:

- *“How do small business workplace parties understand and enact processes related to OHS?”* To answer this question, reviewers looked at studies that identified issues around the implementation of OHS (qualitative studies).
- *“Do OHS interventions in small businesses have an effect on OHS outcomes?”* To answer this question, reviewers looked at studies of OHS interventions and their effectiveness in improving safety (quantitative studies).

How was the review conducted?

The review team included 15 researchers with diverse backgrounds and expertise. The review's scope and focus were developed after consultation with policy-makers, small business OHS consultants

Key messages

Small businesses have unique features that affect their approach to occupational health and safety (OHS). These features should be taken into account by OHS professionals and policy-makers when designing small-firm programs and services.

To improve their OHS practices, small businesses need support that:

- helps them understand OHS rules and approaches
- accommodates the personal nature of working relationships and economic constraints
- recognizes their lack of formal OHS systems and resources
- tailors information and services to their specific size and sector.

Overall, there was moderate evidence supporting the effectiveness of OHS interventions on health and safety outcomes in small businesses. Small businesses appear to benefit most from multi-component OHS interventions.

and other stakeholders. The review focused on small businesses with 100 or fewer employees.

The team searched for articles in nine databases in six languages, which yielded 5,067 articles. After screening for relevance to the review questions, 20 qualitative studies and 23 quantitative intervention studies were identified.

The reviewers then worked in two sub-teams — one looking at the qualitative and the other at the quantitative research — to assess the quality of all relevant articles. Articles were ranked as high, medium or low quality based on a series of quality assessment questions for each type of research.

**Qualitative studies:
Quality ranking table and synthesis guideline**

High quality studies
Have explanatory value Clearly describe and justify methods Provide rich context Clearly convey analysis process Show clear links between data and findings Portray nuances and intricacies in the data Address relevant ethical issues and the “researcher effect”
Medium quality studies
Are often descriptive in nature, rather than explanatory Have some shortcomings related to the methodology, analysis or reporting
Low quality studies
Are undermined by a major flaw in the way data was collected or analyzed
Best evidence synthesis
Concepts that occur in at least 3 high or medium quality studies ranked by the criteria above are grouped into themes and included in the final synthesis.

**Quantitative studies:
Best evidence synthesis guidelines**

Level of evidence	Minimum quality	Minimum quantity	Consistency
Strong	High (>80%)	3 high quality	3 high quality studies agree. If more than 3 studies, ³ / ₄ of the medium and high quality studies agree.
Moderate	Medium (50-79%)	2 high OR 2 medium and 1 high quality	2 high quality studies agree OR 2 medium and 1 high quality studies agree. If more than 3 studies, more than ² / ₃ of the medium and high quality studies agree.
Limited	Medium (50-79%)	1 high OR 2 medium OR 1 medium and 1 high quality	If 2 studies, they agree. If more than 2 studies, more than ¹ / ₂ of the medium and high quality studies agree.
Mixed	Medium and high	2 medium and/or high quality	Findings from medium and high quality studies are contradictory.
Insufficient	No high quality studies, only one medium quality study, and/or any number of low quality studies.		

After the quality assessment, 14 qualitative articles and five quantitative intervention articles proceeded to final review. These studies were of high or medium quality. The criteria used to describe the overall level of evidence is shown in the boxes at left.

What were the main findings?

The studies came from around the world, although most were undertaken in North America or Europe. The business size was evenly distributed across firms with fewer than five workers, fewer than 20 workers, fewer than 50 workers and 100 or fewer workers. The studies focused on 10 sectors. Manufacturing, agriculture and construction were each the focus of more than one study. Five studies looked at small businesses in multiple sectors.

OHS understandings and processes (qualitative studies)

The qualitative research addressed the question, “How do small business workplace parties understand and support processes related to OHS?”

Three themes were identified in the 14 qualitative studies that describe how small businesses understand and practise OHS. These themes highlight the unique conditions experienced by small businesses and identify opportunities for providing support to them.

1) OHS structures, policies and system issues

- *Small businesses lack knowledge of OHS rules and approaches.* Many owners and managers either did not know or remember OHS rules and regulations. Small businesses were often exempt from regulations and were often not unionized. Because they were so numerous, any one small business rarely experienced a safety inspection. These conditions contributed to poor knowledge of OHS.
- *Small businesses lack formal workplace systems and resources for OHS.* Dedicated staff and resources were often unavailable to support formal workplace health systems. Both owners and workers may have been unsure of the workplace’s responsibilities for worker health. Some industries, such as construction, had complex sub-contracting relationships. These types of relationships made it difficult to identify owner-worker legal relationships and to understand who was responsible for workplace health.

- *Information, policies and legislation do not fit the reality of small businesses.* Policies could be difficult to put into practice, sometimes because of unclear legal responsibilities or a disruption of personal relationships. Also, some policies were too simple, technical or not suited to the needs of small business.

2) Understandings of OHS hazards

- *Small businesses can downplay risks or not use OHS knowledge.* Both owners and workers saw OHS hazards as part of the job. In some sectors, such as farming, they resisted outside advice. Workers in service sectors sometimes avoided safety advice that interfered with client relations. Owners also pointed to a lack of time and money as barriers to workplace health management.
- *OHS views are shaped by social relationships at work.* When workers and owners worked side by side, the workers often understood the cost of running the business and aligned their own interests with the needs of the firm. This type of relationship could lead to a lack of recognition, or an over-acceptance, of workplace hazards.
- *Risk is seen as individually navigated.* Workers were sometimes considered responsible for navigating their own OHS risks, for several reasons. Workers were felt to have autonomy and responsibility for their work. In some industries, such as construction, workers viewed health and safety as part of their craft and control over their tools. Owners also sought to avoid time-consuming formal workplace health programs.

3) Management of risk and health problems

- *Injury causes serious social disruption in small businesses.* An injury could have a profound effect on a company's production, which could lead employers to re-evaluate the value of the injured worker and threaten his or her continued employment.
- *Small businesses adapt strategies for managing health based on their circumstances.* When OHS resources were not suitable or easily adapted, workers sometimes used "stand-in" practices. For instance, workers handling chemicals sometimes

What is a systematic review?

A systematic review is a type of research study. It aims to find an answer to a specific research question using existing scientific studies. Reviewers assess many studies, select relevant, quality studies, and analyze the results. The review normally includes the following steps:

- determine the review question
- develop a search strategy and search the research literature
- select studies that are relevant to the review question
- assess the quality of the methods in these studies and select studies of sufficient quality
- systematically extract and summarize key elements of the studies
- describe results from individual studies
- combine results and report on the evidence

The Institute for Work & Health has established a dedicated group to conduct systematic reviews in workplace injury and illness prevention. Our team monitors developments in the international research literature in this field. We rely on feedback from non-research audiences to select timely, relevant topics for review, to help shape the research question and frame our findings.

We appreciate the support of the Ontario Workplace Safety and Insurance Board (WSIB) in funding this four-year Prevention Systematic Reviews initiative.

turned their gloves inside-out and reused them, despite OHS training, because they did not have an adequate supply of gloves. Owners also changed their health management strategies to meet business needs or based on how much they liked the injured worker.

Intervention effectiveness (quantitative studies)

The quantitative research addressed the question, "Do OHS interventions in small businesses have an effect on OHS outcomes?"

The interventions included in the five studies were:

- engineering plus training, safety audit and motivational components (one study)
- training plus safety audit (two studies)
- engineering only (one study)
- training only (one study).

Each intervention looked at one or more of the following effects:

- workplace exposure measures, such as exposure to harmful agents (two studies)
- behaviours, such as the use of personal protective equipment (PPE) (three studies)
- attitudes and beliefs, such as barriers to PPE use or confidence in engaging in safety practices (three studies)
- health outcomes, such as injury rates or pain reports (two studies).

Overall, the review found a **moderate level** of evidence supporting the effectiveness of OHS interventions on exposures, behaviours, attitudes/beliefs and health in small businesses. There was no evidence that any OHS intervention had a negative effect.

With respect to particular interventions, there was **limited evidence** that a combination of training and safety audits, or a combination of engineering controls, training, safety audits and motivational components, had an effect on OHS outcomes.

Other interventions such as engineering controls and training on their own had **insufficient** or **limited** evidence. This is due, in part, to the limited number of quality studies.

Conclusions

Based on the results, the researchers have concluded the following.

1. OHS professionals and policy-makers should consider the unique features of small businesses when designing programs and services because these features affect their approaches to health and safety. In particular, they should remember that small businesses:

- have cultures of independence and autonomy, which can orient them to view health and safety as an individual worker issue, rather than a workplace issue
- are often subject to different or fewer legislative requirements than large firms, and are engaged in such a broad range of activities that current OHS information, policies and legislation often do not “fit” the way they work
- are particularly disrupted by workplace injury because of their reliance on few employees and, often, their slim profit margins.

2. To improve their OHS outcomes, small businesses need support that:

- helps them understand OHS rules and approaches
- accommodates the personal nature of their working relationships and their economic constraints
- recognizes their lack of formal OHS systems and resources
- is finely tailored to their size (recognizing their need for affordability and informal task division) and to their sector.

3. Small businesses benefit most from multi-component OHS interventions. Two multi-component prevention activities have emerging evidence to support them: a combination of training and safety audits, and a combination of engineering controls, training, safety audits and motivational components (e.g. financial incentives).

4. More studies are needed that adequately evaluate OHS interventions, that address return to work and disability management, and/or that include the newer “high technology” firms in the small business sector.

These findings are based on the report *Effectiveness and implementation of health and safety in small enterprises: A systematic review of quantitative and qualitative literature* by Ellen MacEachen, Curtis Breslin, Natasha Kyle, Emma Irvin, Agnieszka Kosny, Phil Bigelow, Quenby Mahood, Krista Scott-Dixon, Sara Morassaei, Marcia Facey, Lori Chambers, Rachel Couban, Harry Shannon, Kimberley Cullen and Benjamin C. Amick III.

The full report is available at:

www.iwh.on.ca/systematic-reviews.

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