

Correct Answers to Workers' Occupational Safety and Health Questions: Common Information Sources Compared to an Online Expert Network



Martijn DF Rhebergen, PhD-researcher Coronel Institute, University of Amsterdam
 Annet Lenderink, PhD-researcher
 Prof. dr. Frank van Dijk
 Prof. dr. Carel Hulshof



Background

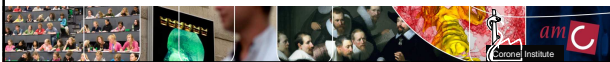
- Many workers face adverse working conditions and work-related health problems.
Nea, 2010; Eurostat, 2009; HSE, 2010; Bureau Labor statistics, 2010
- These conditions and problems frequently elicit questions and concerns in workers or their managers.

Rhebergen et al., 2011; Hoekstra & Van der Laan, 2008; CCOHS, 2008; Lang et al., 2005; Scott Parker Research and Marketing, 2004; Dryson, 2001

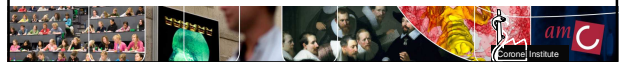
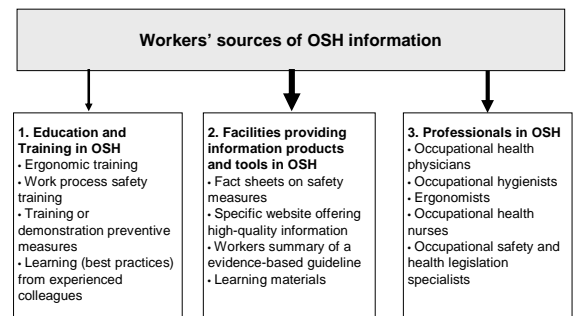


Background

- *Are the glass fibres or dust released after the crushing, cutting or fragmentation of (car) windows in the open air hazardous to my health?*
- *I work in a storage depot. Most workers wear "normal" shoes. In my opinion, we should be wearing safety shoes. Is this obligatory in my work?*



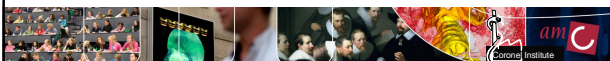
Background



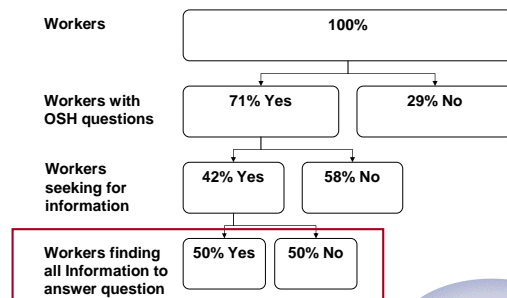
Background

- Workers need high-quality information and advice for correct answers and for making correct decisions on the prevention and management of safety and health issues at work.

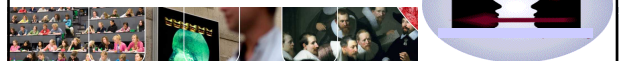
O'Dell, 2011; Straus et al., 2009; Waljee et al., 2007; Kalichman et al., 2005; Baker et al., 2003; Pencheon, 1998



Background



Rhebergen et al., 2011; Survey Dutch Workers N=888



Background

- Finding complete and correct answers may be difficult for workers.

Van Deursen et al., 2011; Fox, 2009; Alpay et al., 2009; Hoekstra & Van der Laan, 2008; Tang, 2006

- Barriers of finding information and answers:
 - Lack of skills or motivation to find, appraise and apply quality information.
 - Simultaneously, OSH knowledge infrastructures insufficiently support workers. (e.g., experts sometimes difficult to access, biased or costly, online information invalid or outdated)

Burg et al., 2010; Rhebergen et al., 2011; Fox, 2009; Hugenholz et al., 2009; Hoekstra & Van der Laan, 2008; Tang, 2006; Anton, 2006; Eysenbach et al., 2002



Background

- Many workers need more support in the process from question to answer, and need independent information of high-quality, tailored to their needs and context.

Rhebergen et al., 2012 and 2011; Alpay et al., 2009

- (Online) Expert advice facilities are designed to provide workers with tailored information of high quality, e.g., *online expert networks*.

Rhebergen et al., 2010; Harper et al., 2008; CCOHS, 2008; Iske, 2005



Background

Online expert networks

- Create access to a potentially large online network of OSH experts, accessible 24/7.
- Facilitate knowledge exchange between worker and expert.
- Easy storage and retrieval of knowledge.



Background

Aim of the study

- To compare the rate of correct answers in a group of workers who use an online network of OSH experts (Intervention group) with a group of workers who use their common information facilities (Control group).

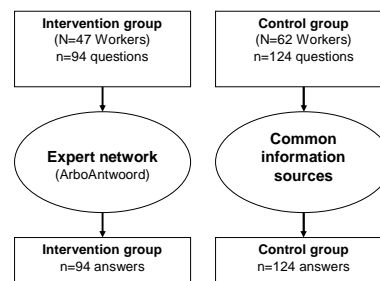


Methods – Participants

- In total, 109 workers were allocated to an Intervention or Control group, and were requested to answer two OSH questions.
 - Intervention group (n=47 Expert network "ArboAntwoord")
 - Control group (n=62 Common information sources)



Methods – Design



Methods – Intervention

Expert network ArboAntwoord
80 highly-qualified OSH experts

Methods – Intervention

Callouts in the screenshot:
 - Add title in text field
 - Add question in text field
 - Authorize publication of Q&A combination
 - Bladeren... (Browse...)

Methods – Intervention

Callouts in the screenshot:
 - Select expert
 - Reaction Time
 - Button: send question to expert

Methods – Control group

Common sources of information

Source of Information	Percentage of Respondents
Websites found through Google	~55%
In-company OSH-related experts	~45%
Social or professional network (e.g. family, friends, peers)	~40%
Experts in occupational health service	~35%
Experts in regular health care	~30%
Specific pre-known websites	~25%
Magazines, journals, fact sheets, brochures, books, etc.	~20%
Other sources of information or advice	~15%
Social media or internet fora	~10%
Experts from trade unions	~5%
Experts from sector or occupational associations	~5%
Experts in law and regulations	~5%

Methods – Data collection

- For each participant two questions were randomly selected from a pool of 16 standardized questions.
 - Question difficulty: 8 simple / 8 complex questions
 - Question topic: 5 on OSH legislation / 11 on OSH content questions
 - Question structure: 8 single / 8 double questions
- The questions were included in paper logs and sent to the participants who had to complete them within 3 weeks.

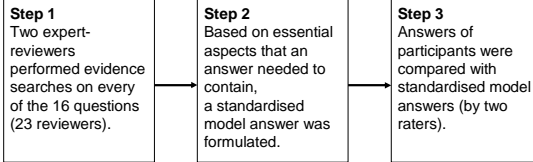
Methods – Data collection

Main outcome

- Answer correctness:** “An answer that accounts for the context of the question and corresponds with conclusions / recommendations of the best available research and practice evidence.”

Methods – Data collection

16 correct “model answers” were developed



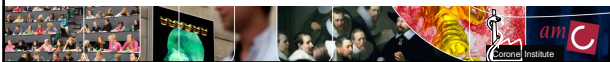
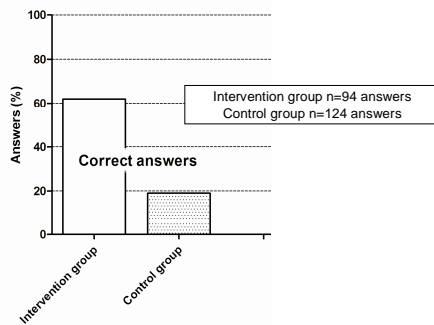
Results (1)

Participants

- Comparable groups: *No group differences* on background characteristics between Intervention and Control group.
- Control group:
 - 90% used OSH websites found via Google
 - Median information seeking time: 10 min. (IQR: 5 – 20)

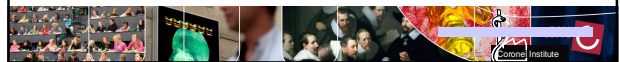


Results (2)

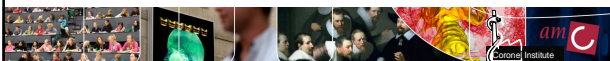
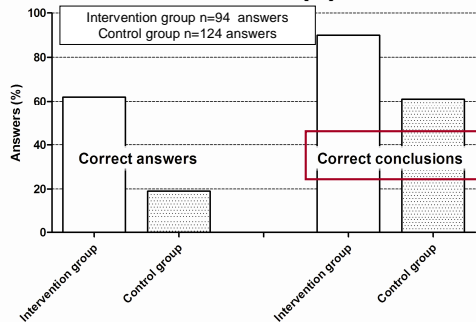


Results (3)

		Intervention group % Correct answers	Control group % Correct answers	Intervention group vs. Control group RD % (95%CI)
Total	All questions	62	19	43 (30 - 54)
Question difficulty	Simple	53	19	34 (16 - 50)
	Complex	70	20	50 (33 - 65)
Question topic	OSH legislation	83	29	54 (31 - 71)
	OSH content	52	15	37 (22 - 51)
Question structure	Single	58	20	38 (17 - 57)
	Double	63	19	44 (29 - 58)



Results (4)



Results (5)

A final subgroup analysis within the intervention and control group showed:

- “Workers who provided *incorrect* answers believed the information that they used to be equally credible, complete and applicable as workers who provided *correct* answers.”

