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Workers' right-to-know legislation: does it work?

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Workers' right-to-know (WRTK) laws and regulations were established to empower workers to protect their health by providing them with information about the hazards to which they are exposed while at work. The present study was conducted to examine the implementation of WRTK regulations in Israel. We interviewed 552 workers and 33 safety officers from a random sample employed at 50 industrial plants. The workers' questionnaire included items on awareness and self-management of workplace hazards, and the safety officers answered questions about job experience and hazards communications to workers. In 36% of cases workers and their safety officers disagreed about the existence of hazards in the workplace ($p < 0.001$). Most (78%) of the workers' knowledge about work hazards was based on informal sources, *i.e.*, *not* those stipulated by the regulations. There were also discrepancies between worker and safety officer reports regarding the provision of safety training upon employment ($p < 0.001$), recent instructions about special risks and distribution of relevant printed material. We found that more than 5% of workers were unable to read the language in which the hazards material was written and 22% had levels of education below that required to comprehend the technical terms used. There are serious problems in the implementation of WRTK regulations in Israel. We recommend that employers be made aware of the importance of these laws and of their proactive duty to comply with them and that the material distributed to workers be written in simpler terms and/or explained orally in a language they understand. These findings have important implications for all countries with similar legislation and should form the basis for further and more comprehensive studies world-wide.

Key words: Israel; safety regulations; work hazards; workers' right-to-know legislation

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INTRODUCTION

Many countries have established hazard communication laws and regulations to provide workers with information about health hazards to which they are exposed at the workplace[1,2] so they may protect themselves against injury and illness.[3] This information is also useful in worker claims for damages in cases of alleged corporate liability.[2]

In British regulations, the duty to provide information, instruction and training to employees is specifically stated in Regulation 12 of the Control of Substances Hazardous to Health Regulations.[4]

The United States Occupational Safety and Health Administration (OSHA) established its Worker Right-to-Know (WRTK) Law in 1983.[5] Most of the state-wide legislation subsequently based on this law stipulates that all employers must: (1) record and clearly label all hazardous substances at the workplace; (2) submit a standard Material Safety Data Sheet (MSDS), indicating the risks posed by every hazardous substance at the workplace and instructions for proper handling and (3) provide workers with information about health hazards at the workplace and how to avoid them. Each state has its own time frames for compliance, penalties for violations, *etc.*[2,6] In 1984, following the example of the United States, Israel passed the Information Disclosure and

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Worker Training Law which includes four Regulations for the Organization of Work Inspection[7] that directly address the workers' right-to-know. The Hazard Communication Regulation obligates employers to inform workers of any health and safety hazards at the workplace in general and at their workstation in particular, and to provide up-to-date instructions in the safe use, handling and maintenance of all equipment and materials. The Worker Training Regulation states that (a) employers must train workers to protect themselves from hazardous equipment and materials; (b) employers must retrain workers at intervals, depending on the specific hazards they are exposed to; (c) training must be conducted by a person or institution skilled in that specific area in a manner that will ensure the workers' reasonable familiarity with the equipment or material and (d) employers should ensure that all workers understand all instructions and training methods and that they act upon them. The Written Summary of Information Regulation mandates employers to provide workers with a written summary of information concerning any hazard they may be exposed to in the course of their work. The summary must be in Hebrew or Arabic, as necessary, and workers not fluent in either of these languages must receive an explanation of the contents of the summary in a language they understand. This must be done at each change in job title or workstation. Finally, the Medical Examination Regulation states that workers must undergo a mandatory medical examination on employment and be informed of their health status within a reasonable time (not specified) thereafter.

The present survey was conducted to investigate the implementation of these regulations in industrial plants in Israel.

MATERIALS AND METHODS

The study population included workers and safety officers from a random sample employed at 50 industrial plants in Jerusalem and Ashdod, which accounted for 25% of all plants in those areas. In plants with less than 10 workers, all workers were interviewed; in larger plants, a random sample of 20% of the workers potentially exposed to health hazards (but not fewer than 10) were interviewed. Data were collected by personal interview by a research assistant. Both groups answered questions on personal and demographic details, occupation (job title, experience, *etc.*) and literacy (level of education, knowledge of languages, *etc.*). The workers' questionnaire included items on awareness and self-management of specific workplace hazards (types of hazards, sources of information, satisfaction with the information provided, *etc.*), and the safety officers' questionnaire included items about their experience in the job and the type and frequency of hazard information they provided to their workers. Both questionnaires were formulated specially for the present study and administered during the same work day.

RESULTS

A total of 552 workers from 50 plants and 33 safety officers from 31 plants were interviewed. In 19 plants, the safety officer was not interviewed owing to difficulties in his/her identification or to lack of co-operation by the management. Two of the plants employed two safety officers, and both were interviewed, and in two plants with up to three workers each, only the safety officers were interviewed.

Analysis of the demographic data showed that 535 workers (97%) were male as were all 33 safety officers. Distributions by age and level of education are shown in Table 1. The safety officers were slightly older than the other workers and had somewhat more education, with the majority having completed O-level (45%) or A-level (24%) high school. In all, 448 workers (81%) reported being literate (able to read) in Hebrew. Of the remainder, 66 (12%) could read Arabic, and 28 (5%) another language (mostly Russian). Ten workers (2%) were completely illiterate. All safety officers were literate in Hebrew, and many could also read Arabic (50%) or English (65%).

We then compared each worker's response to that of his/her safety officer. Agreement regarding the existence of a general health risk at the workplace was found in only 64% of the cases: in 48% of the cases both worker and officer believed there was a health risk and in 17%, both thought there was not; in 36% of cases, either the safety officer believed there was a health risk but the worker did not (22%) or vice versa (14%). A significant difference ($\chi^2 = 26.61$, $p < 0.001$) was found between worker reports about the existence of health risks and the expected numbers according to the safety officers' reports.

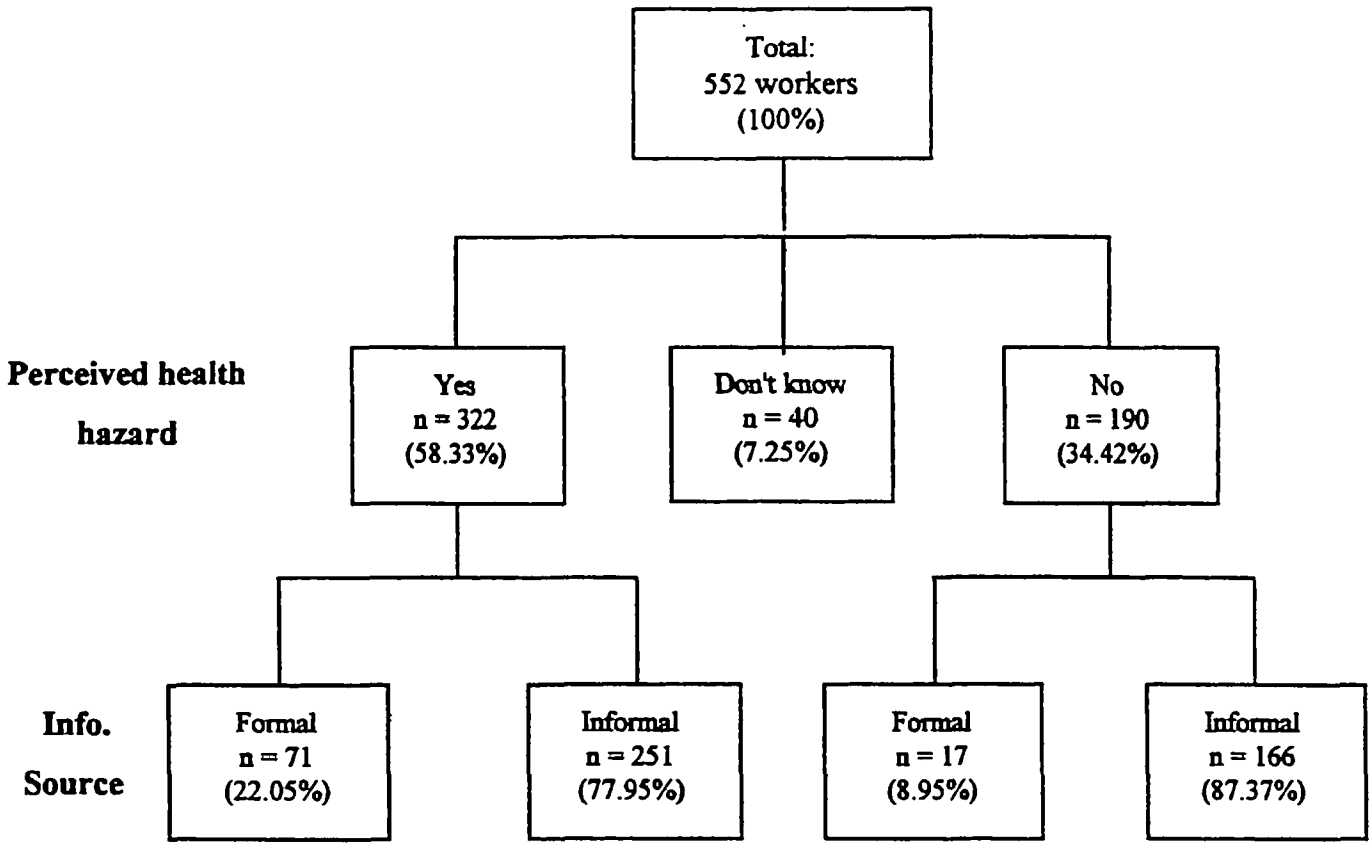
Figure 1 presents the distribution of the workers' answers to the questions: (1) To the best of your knowledge, does your work risk your health? and (2) What is your knowledge based on: formal information from safety officers, posters or other printed material, or informal sources, such as co-workers' opinions or personal impression? We found that 58% of the workers believed they were at risk as compared with 34% who did not.

Table 1. Distribution of workers and safety officers by age and education level

	Workers (*n* = 552)	*Safety officers* (*n* = 33)
Age (yrs)		
≤ 19	22 (3.98%)	–
20–29	160 (28.99%)	5 (15.15%)
30–39	159 (28.80%)	11 (33.30%)
40–49	132 (23.81%)	10 (30.30%)
≥ 50	77 (13.95%)	7 (21.21%)
Education[a]		
Grade 8 or less	117 (21.99%)	1 (3.03%)
O-level high school	301 (56.58%)	15 (45.45%)
A-level school	71 (13.35%)	8 (24.24%)
Higher education, no degree	25 (4.70%)	4 (12.12%)
Higher education, + degree	29 (5.45%)	5 (15.15%)

[a] Data missing for 11 workers.

Figure 1. Workers' perception of health and safety hazards at the workplace and their sources of information, which were either formal (safety officer, poster or other printed material) or informal (personal impression, co-workers' opinions).



Among these subgroups, 78% and 87%, respectively, derived this information from informal sources (*i.e.*, sources not stipulated by the regulations). The remainder (7%) reported that they did not know if they were at risk. Sixty-seven per cent of the workers reported not having been provided with any printed material in the six months preceding the interview. When the safety officers were asked if they believed their workers were at risk, 19 (58%) reported positively (for factories including 238 workers, or 67%) and 14 (42%) negatively (for factories including 104 workers, or 30%); 82% of the safety officers reported distributing some reading material to the workers within the last six months.

Regarding training, although the safety officers reported that they had provided general safety training to 275 workers (77%) on employment, only 167 workers (47%) reported having received safety training ($p < 0.001$) (Table 2). Curiously, 21 workers reported that they received training, even though their safety officers said they had not provided it. Thirty-five per cent of the workers did not remember whether they had been trained or did not answer this question.

Workers considered to be at risk by their safety officers were asked about their receiving instructions within the last six months about the specific hazard. Overall, 59% of workers claimed not to have received specific instructions. Only 43% reportedly exposed to noise and 22% at risk from heavy weights (the two most common hazards) were specifically trained to handle them. Training rates for the other hazards were even lower: 15% for workers exposed to ionizing radiation; 12% for workers exposed to lead; 6% for workers exposed to organic solvents and 4% for those exposed to cadmium (Table 3). However, 13% of workers exposed to another specific hazard such as fire and unpleasant odours not cited in the law reported that they had received training. Furthermore, except in regard to noise and heavy weights, extremely high proportions of the workers either did not understand what 'hazard' was (*i.e.*, did not understand what the word meant!) or did not remember whether they had been trained (71%, 61%, 16% and 7% for workers exposed to cadmium, ionizing radiation, organic solvents or benzene, respectively). Retraining after a job change was reportedly provided by 42% of the officers and received by 36% of the workers.

Table 2. Agreement between worker and safety officer reports about general safety training

Worker report	*Safety officer report*		*Total*
	Yes	*No*	
Yes	146 (40.66%)	21 (5.85%)	167 (46.52%)
No	129 (35.93%)	63 (17.54%)	192 (53.48%)
Total	275 (76.60%)	84 (23.40%)	359[a] (100%)

$\chi^2 = 20.35$; $p < 0.001$

[a] Missing data for 193 workers.

Table 3. Relationship between safety officer reports of specific hazards and worker reports of specific risk training

Hazard	*Safety officer report: workers under exposure*		*Worker reports*					
			Trained		*Not trained*		*Don't know*	
	No.	*% of 552*	*No.*	*% of exposed* [a]	*No.*	*% of exposed* [a]	*No.*	*% of exposed* [a]
Noise	285	51.7	121	42.5	162	56.8	2	0.7
Heavy weights	163	29.5	36	22.1	126	77.3	1	0.6
Lead	16	2.9	2	12.5	14	87.5	0	0.0
Ionizing radiation	41	7.4	6	14.6	10	24.4	25	61.0
Organic solvents	159	28.8	10	6.3	124	78.0	25	15.7
Cadmium	51	9.2	2	3.9	13	25.5	36	70.6
Benzene	27	4.9	6	22.3	19	70.4	2	7.4

[a] The number of workers under exposure based on safety officers' reports was used as the denominator.

Only 50% of the workers were examined by an occupational physician within the two years preceding the study. Of these, 80% were informed of the findings and 86% of them were satisfied or very satisfied with the information they received.

DISCUSSION

A basic assumption in WRTK laws is that workers who receive proper information about health hazards at the workplace will be able to take action to protect themselves and to claim compensation, when necessary.[8]

This is the first study of the implementation of WRTK regulations in Israel, and very serious lapses were found: (1) Very often, workers were completely unaware of the risk to their health, although the safety officers were, and even when workers did have the correct information, it was usually derived from informal sources. This is a direct violation of the Hazard Communication Regulation.[7] (2) More than half the workers reported that they had not been trained in handling any specific health or safety hazard in the six months preceding the interview. Among workers considered by their safety officers to be exposed to one or more of the hazards listed in the regulations (ionizing radiation, organic solvents, asbestos, benzene, pesticides, lead, arsenic, chromium, mercury, cadmium or vinyl chloride), only a strikingly small minority claimed to have been taught self-protection procedures. This is a flagrant violation of the Workers Training Regulation.[7] Regarding the Hazard Communication and Worker Training Regulations, though an investigation of the reliability of the information on both sides was beyond the scope of the present investigation, we strongly suspect high rates of disinformation among the workers, which could result in damage to their health. (3) A large majority of workers reported not having been provided with any printed material discussing hazards at the workplace. This is in violation of the Written Summary Regulations.[7] (4) Of the 50% of workers who had been examined by an occupational physician in the six months preceding the interview, 20% were not informed of the results, in violation of the Medical Examination Regulation,[7] and possibly also of the new Israeli Patients' Rights Law.[9]

According to the literature, Israel is not alone in its poor compliance with WRTK regulations. In one study conducted in the USA,[10] over 2,000 citations of WRTK violations were recorded in half the states *per month*. Of 2,000 workplaces surveyed, non-compliance was found in 58%, and 30% of employers claimed they had never heard of the WRTK law! Sattler[8] has suggested that one of the main reasons for these figures is that employers do not understand that their duty to disclose information is proactive, not reactive. She emphasizes that: 'The HCS [Hazard Communication Standard] is explicit about employers' responsibility to train workers, not merely to respond to requests for information when workers ask for it.'

We noted many disparities between the safety officers' reports of the information they provided and the workers' reports of the information they received. Possible explanations for this finding are: (1) safety officers tend to over-represent their efforts to provide information; (2) worker recall bias — workers do not worry about the subject while healthy and then do not remember the training and (3) safety officers provided the information, but it was not comprehended by the workers. The disparity may also be related to the generally low level of education of the workers studied here, which did not exceed 8 years in 22% of the study population. Many researchers have noted that WRTK materials are usually written in very complex language and often contain medical, chemical, toxicological and technical terms that make them hard to understand by people with this level of education.[5,11–14] Furthermore, information summaries in Israel are printed only in Hebrew and Arabic. Yet, more than 5% of the workers in our study population (n = 28) could not read either of these languages and 10 workers were completely illiterate.

We believe the low rates of compliance with WRTK regulations can be improved by: (1) making employers aware of the existence of any relevant legislation; (2) emphasizing to employers that their duty to disclose information is proactive, not reactive; (3) rewriting documents in simpler, less technical terms and (4) explaining the contents of WRTK documents to each worker in a language which they understand, orally or in writing.

Our study indicates that workers' knowledge of hazards at the workplace in practice is poorer than implied

by the legislation. Based on our findings and reports in the literature, we suspect that similar problems may exist in other countries. Further, more comprehensive investigations are warranted to ensure optimal implementation of these important laws.

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