Faculdade de Saúde Pública
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Hospital Samaritano São Paulo

WORK ABILITY OF HOSPITAL WORKERS: ASSOCIATED FACTORS

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Introduction

- Since the 1980s, researchers have focused on the evaluation of work ability. It has gained importance due to several simultaneously occurring phenomena, such as:
  - ✓demographic transitions,
  - ✓development of new technologies
  - ✓changes in work processes
  - ✓changes in labor relations

  (Ilmarinen, 2006)

- Health care providers face new challenges in an increasing competitive health care market (Plsek & Greenhalgh, 2001).

- Hospital services traditionally demand **high physical efforts** which are often associated with negative outcomes, including **muscleskeletal disorders** and eventually **reduced work ability** (Simon, 2008; Jorge, 2009).

Work ability concept

"*How good is the worker at present, in the near future, and how able is he/she to do his/her work with respect to the work demands, health and mental resources*"

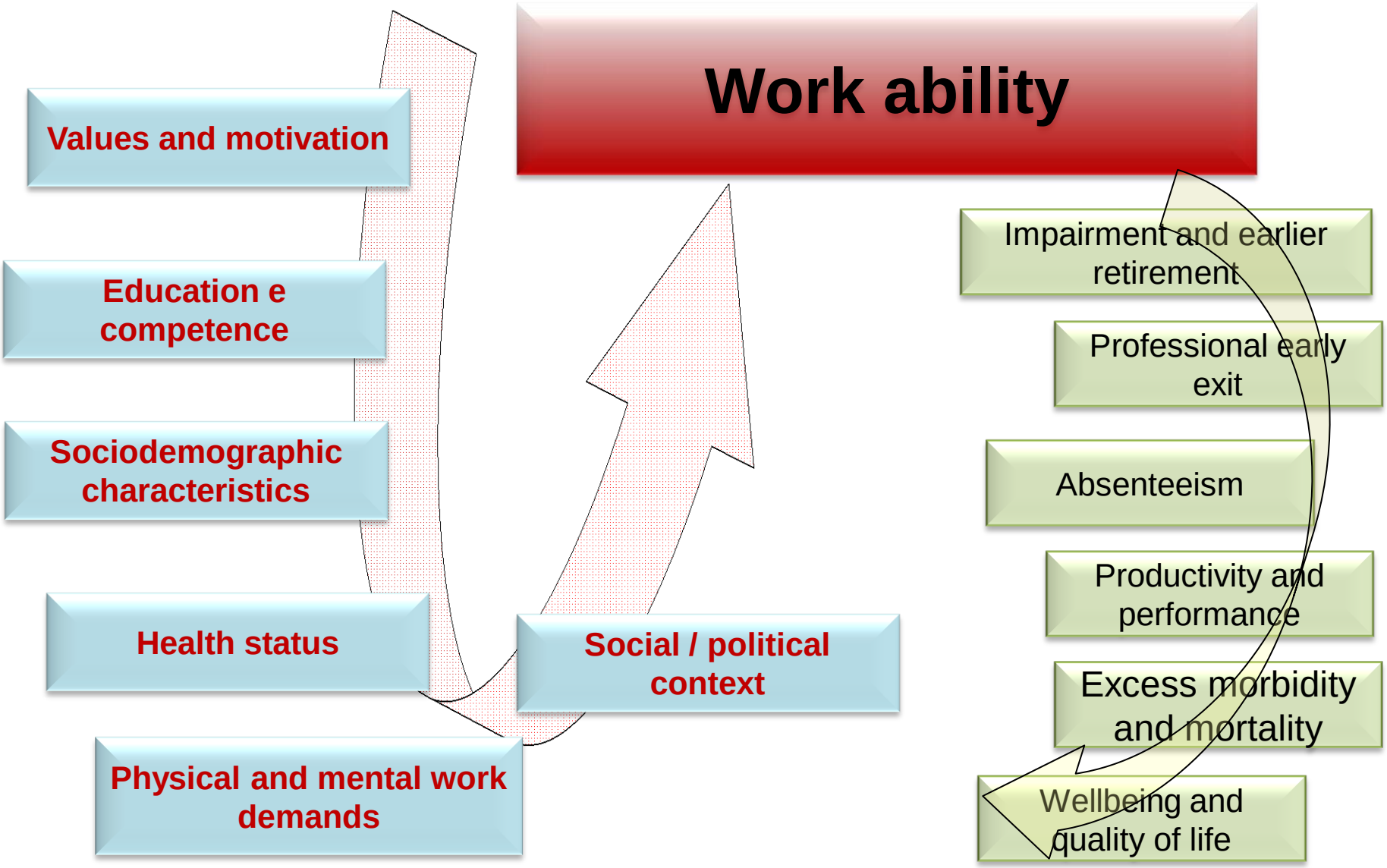
Ilmarinen & Tuomi (2004)

Maintaining Work Ability: a multifactorial challenge

- Individual characteristics: (Eg. sex, age, education, life styles ;
- Working conditions
- Living conditions
- Available health services
- Health conditions

WHO, 1993

Work ability and interactions / outcomes



Hospital work: usual stressors at workplaces

Current situation on nursing employment and working conditions:

- ✓Shortage of nurses in industrialized countries (270,000 in USA, 2010)
- ✓Continuous inflow of nurses from developing countries to developed countries;

Usual stressors at workplaces (hospitals, clinics)

- ✓Exposure to physical, chemical and biological stressors;
- ✓Bad postures, excessive workload; repetitive work;
- ✓Emotional stressors (violence at workplace, moral abuse, closeness to pain and death, people's disabilities, quality of patient care, time pressure, perceptions and needs of the client);
- ✓Regular shiftwork/nightwork, two jobs;
- ✓Irregular and long working times;
- ✓Poor payment, low recognition, lack of professional appreciation

Study Rationale

Research development:

- The hospital work is traditionally characterized by high physical demands and the responsibility to ensure the required care to patients ;
- Nursing jobs are characterized by negative outcomes including muscleskeletal disorders and eventually reduced work ability.
- WAI had not yet being used as a tool in an integrated program to maintaining work ability at hospital workers in Brazil;
- Few follow-up work ability studies in Brazil (Bellusci, 2003; Marqueze, 2008)
- Few Brazilian studies focused on hospital workers professionals. Mainly, in nurses.

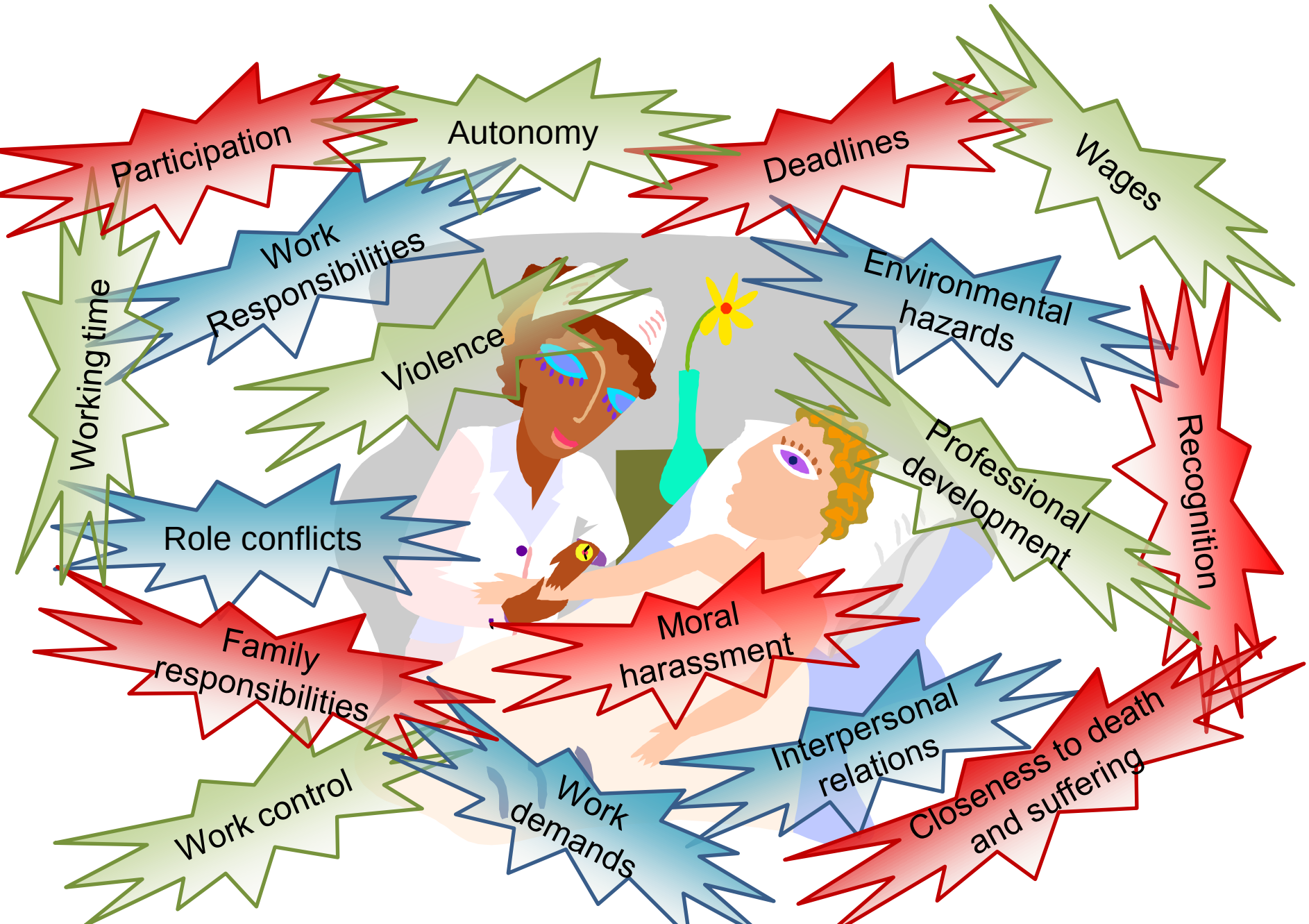
Challenges of hospital management:

- Hospitals face multiple and complex work demands;
- Usually lacks integration among health- safety and personnel management actions;
- Institutional Balance Scorecard does not have as main focus health and safety management;

The studied hospital:

- Construction of a new building
- Implementation of a new electronic medical records
- Periodical audits for quality certification

Hospital work: environmental and occupational demands/stressors



Aims

- **To evaluate factors associated with wok ability among hospital workers**
- **To provide guidance for interventions**

Methodology

Study design:

- Cross sectional study carried out in 2010, inserted in a 5 years cohort study (2008—2012)

Study population:

- Hospital Samaritano, São Paulo, Brazil
- Participants:1,153 workers (76.1% of the total staff)
- Sex: women were 71.2% of participants
- Mean Age: 34.6 years (SD = 8.7 years)

Methodology

Data collection:

- **Socio-demographic characteristics:** gender, age, marital status, familiar income, schooling, raising kids
- **Lifestyles:** BMI, smoking and alcohol consumption, physical activity
- **Occupational/environmental characteristics and work stressors:** working times, work schedules, job title, time on the job, moonlighting, domestic work, work injuries, work-related diseases, psychosocial factors at work (Brazilian version of a short version of Job Content Questionnaire and Effort-Reward Questionnaire), work conditions (WRAPI - Work-related activities that may contribute to osteomuscular symptoms Questionnaire)
- **WAI – Work Ability Index** (adapted Brazilian version,2009)

Statistical analysis:

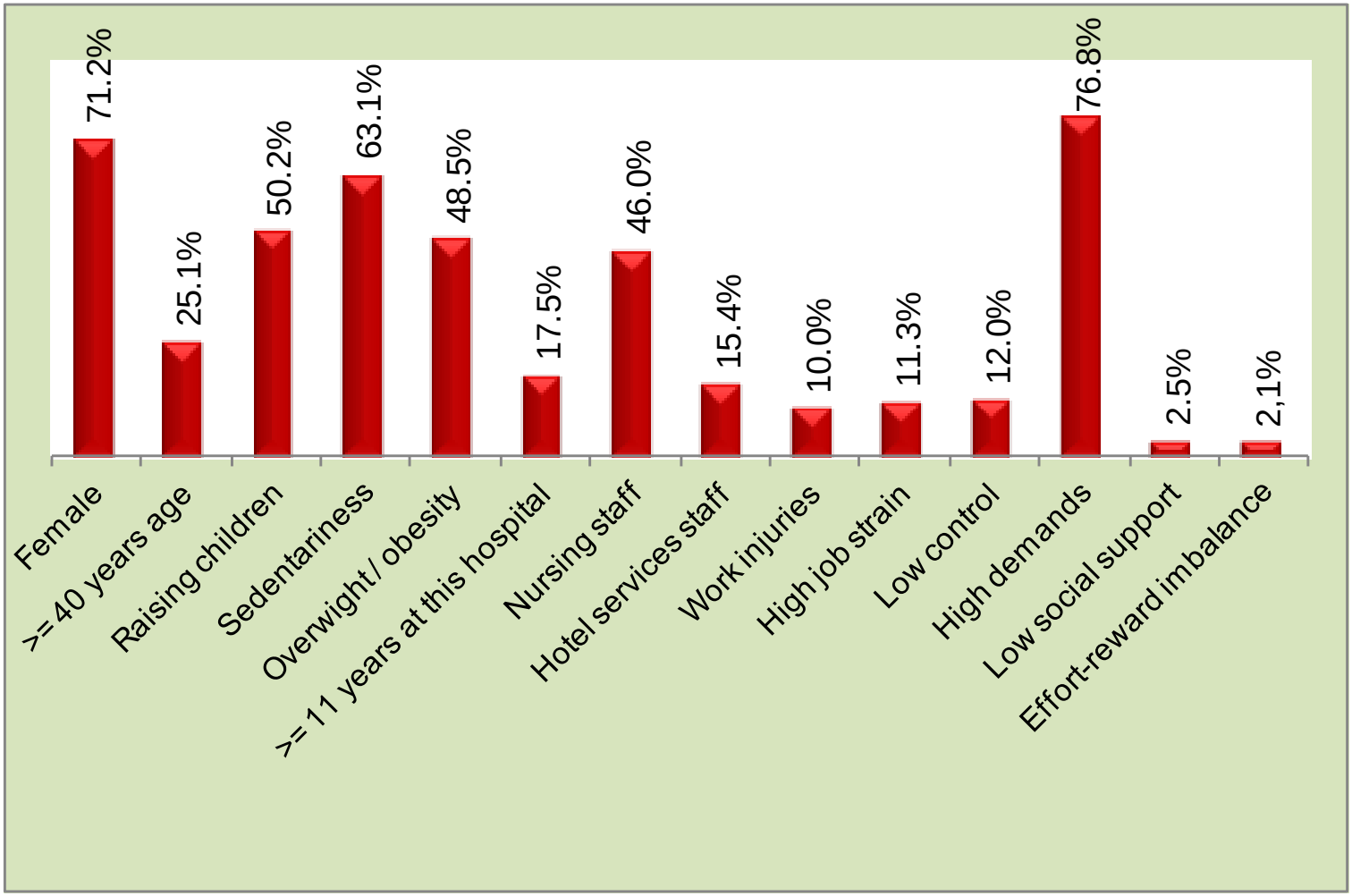
- Descriptive analysis
- Linear regression analysis

Ethical:

- Study approved by Ethics Committee of the studied hospital,
- Participation was voluntary and individual results were confidential

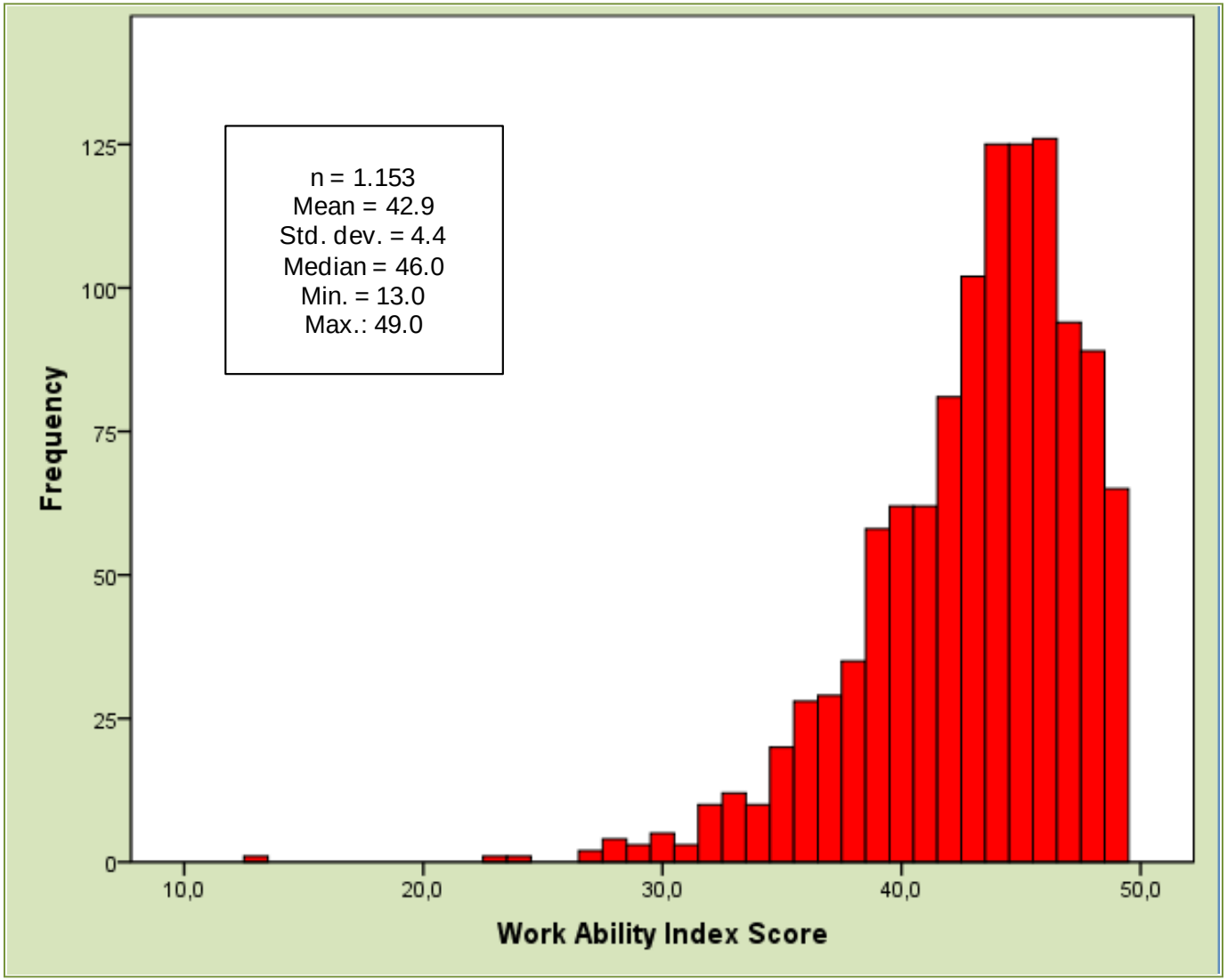
Results

- **Some characteristics and working conditions of the study population**



Results

- **Work ability status**



Results

- **Main self- referred medical diagnosis:**

Disease	%
Respiratory diseases	14.3
Back injuries	9.2
Hipertension	6.1
Gastritis or duodenal irritation	5.2
Legs and feet lesions	4.2
Slight mental disorder or problem	4.0
Obesity	3.4
Arms and hands lesions	3.3
Disorder of the lower back	3.3
Alergic rash / eczema	3.2
Disorder of the upper back or cervical spine	2.9
Injury elsewhere in the body	2.6
Pain radiating from the back into the leg	2.6

Results

- **Associated factors (univariate analysis)**

Variable	Univariated	Multiple
Sociodemographic features		
Sex	<0.001	0.008
Life styles		
Physical activities	<0.001	<0.001
Raising children	0.009	0.002
Domestic weekly hours	0.018	--
Work related features		
Years at this hospital	<0.001	<0.001
Shiftwork	<0.001	0.002
Violence at work (score)	<0.001	0.006
Work related injury	<0.001	<0.001
Work related disease	<0.001	<0.001
Years as a hospital worker	0.002	--
Total weekly hours	0.008	--
Job strain	<0.001	--
Demands at work (score)	<0.001	--
Crontol at work (score)	<0.001	--
Social support at work (score)	<0.001	<0.001
Effort-reward imbalance (score)	<0.001	<0.001
Effort (score)	<0.001	--
Reward (score)	<0.001	--
Overcommitment (score)	0.004	<0.001
Work conditions (WRAPI score)	<0.001	<0.001

Univariated tests = Mann-Whitney, Kruskal-Wallis test ,Tukey post-hoc test, Spearman correlation coefficient

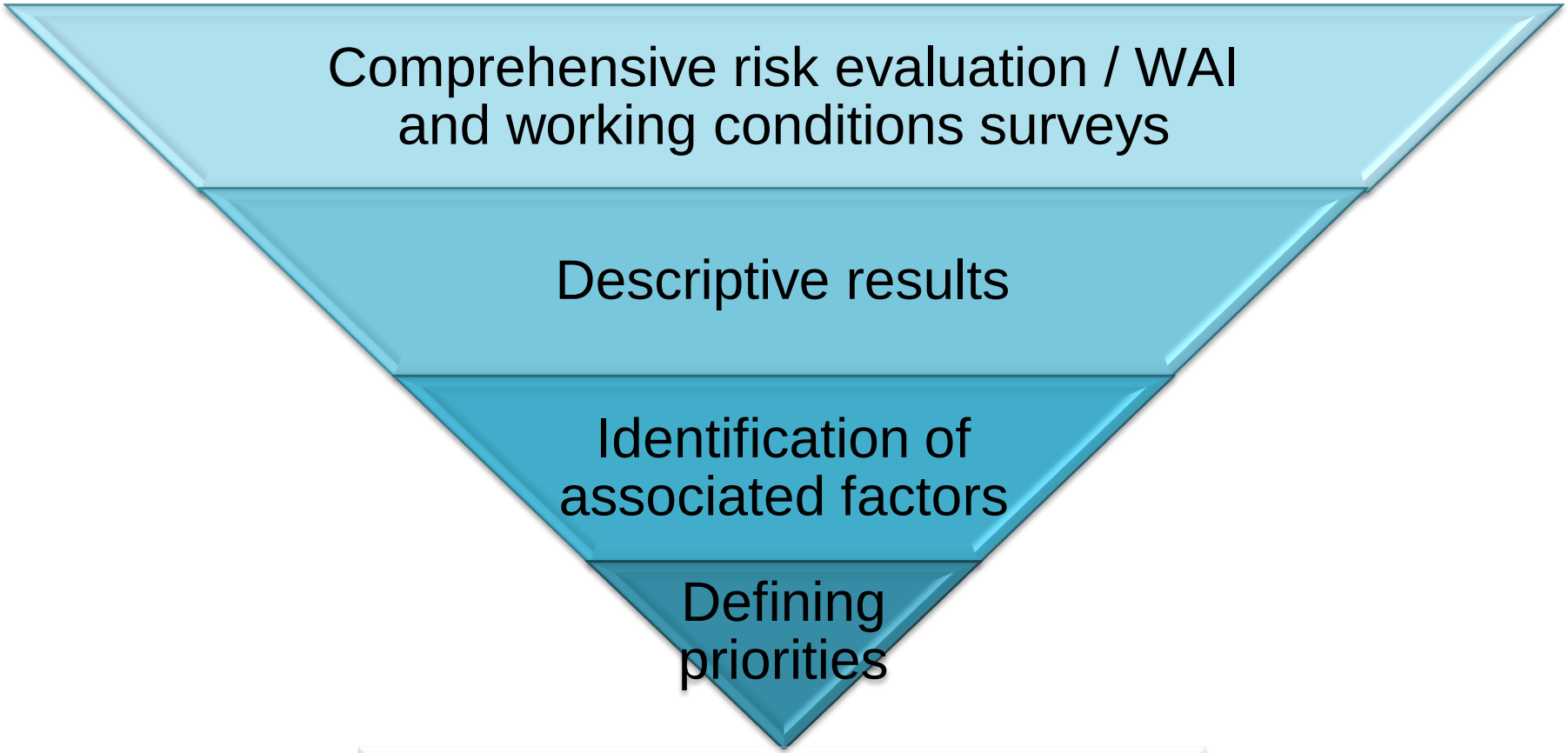
Multiple analysis = linear stepw ise regression

RESULTS

Multivariate regression analysis

Variables	β	$CI_{95\%}$ (β)		p (modelo)	r^2a
Sex	0.657	[0.175	1.139]	0.008	0.334
Physical activities	-0.873	[-1.323	-0.423]	<0.001	
Raising children	0.681	[0.250	1.112]	0.002	
Years at this hospital	-0.066	[-0.098	-0.035]	<0.001	
Shiftwork (morning)	-0.806	[-1.312	-0.300	0.002	
Violence at work (score)	-0.306	[-0.525	-0.087]	0.006	
Work related injury	-1.541	[-2.389	-0.692]	<0.001	
Work related disease	-3.196	[-3.930	-2.462]	<0.001	
Effort-reward imbalance (score)	-3.504	[-4.807	-2.201]	<0.001	
Social support at work (score)	0.179	[0.093	0.265]	<0.001	
Overcommitment (score)	-0.136	[-0.210	-0.061]	<0.001	
Work conditions (WRAPI score)	-0.016	[-0.022	[-0.010]	<0.001	

Action plans



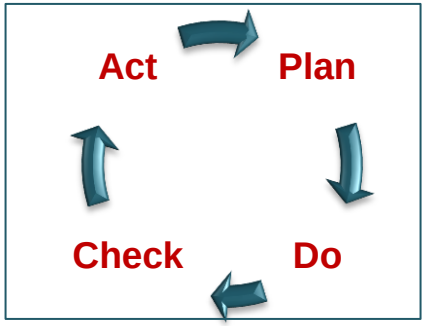
Integrated actions

Integrated actions

- **WAI was incorporated to the hospital "Balance scorecard" as an indicator of workers' health:**
  Mainly innovation and learning perspectives.

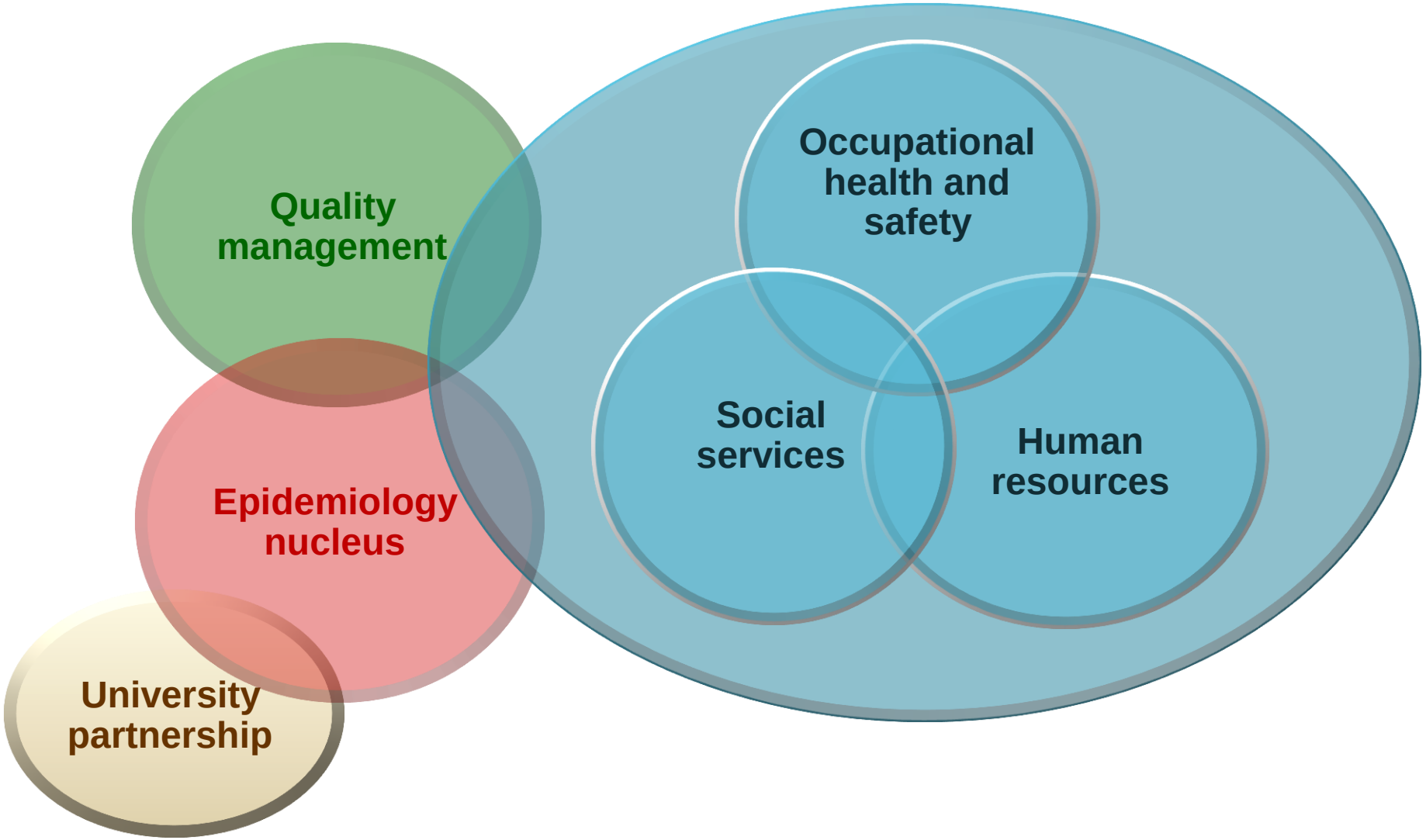
- **Organization of a technical group:**
  To integrate areas related to health, safety and personnel management.

- **Management of risks using the PDCA steps:**
  To develop a methodology for intervention.



- **Further risk analysis in priority hospital areas:**
  To identify working conditions that require specific interventions.

Technical group: health and wellbeing management at work



On going actions

Corporate level	✓Study on review of benefits and incentives ✓ Study on review of staff number
Workplace level	✓ Ergonomic work analysis ✓Equipments improvements ✓Processes review
Individual level	✓Incentive actions to physical exercise ✓ Customize medical care for workers with significant risks associated with chronic diseases
Research level	✓Improvements on data collection

What we learned...

- Maintaining work ability requires comprehensive intervention
- Integrated use of WAI allowed better monitoring employees' health outcomes;
- A multi professional group was important to plan and perform integrated actions;
- Health promotion actions will be easier to be carried out when included in institutional strategic planning;
- Integrated actions achieved better results;
- Evidence the economic impact resulting from WAI decrease provided greater visibility of this issue to the health manager.
- WAI contribute to good business practices;

Conclusions

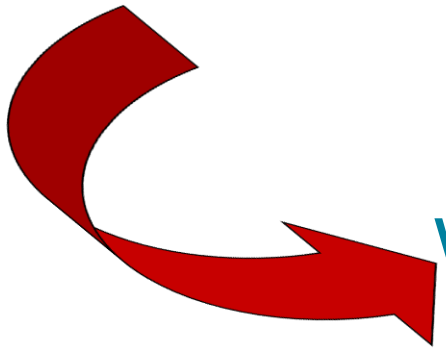
- **Several features are independently associated with work ability:**

  Individual features (sex, physical activities, raising children, overcommitment);

  Work related features (years at this hospital, shiftwork, violence at work, work related injury, work related disease, work conditions - WRAPI);

  Institutional features (effort-reward imbalance, social support at work)

Maintaining work ability requires comprehensive intervention



Workplace health promotion

Thank you!

And also that every man should eat and drink, and enjoy the good of all his labour, it is the gift of God (Ecclesiastes 3:13)

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