Workplace health promotion programs for older workers in Italy

Nicola Magnavita¹, Ilaria Capitanelli¹, Sergio Garbarino², Daniele Ignazio La Milia¹, Umberto Moscato¹, Enrico Pira³, Andrea Poscia¹, Walter Ricciardi⁴

¹Institute of Public Health, Università Cattolica del Sacro Cuore, Rome; ²DINOGMI, University of Genoa, Genoa; ³Dipartimento di Scienze Mediche, University of Turin, Turin; ⁴National Institute of Health, Rome, Italy

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SUMMARY

Background: Italy is the European country with the highest number of citizens over the age of sixty. In recent years, the unsustainability of the social security system has forced the Italian government to raise the retirement age and reduce the chances of early exit, thus sharply increasing the age of the workforce. Consequently, a significant proportion of older workers are currently obliged to do jobs that were designed for young people. Systematic health promotion intervention for older workers is therefore essential. **Objectives:** The European Pro Health 65+ project aims at selecting and validating best practices for successful/active aging. In this context we set out to review workplace health promotion projects carried out in Italy. **Methods:** To ascertain examples of workplace health promotion for older workers (WHPOW), we carried out a review of the scientific and grey literature together with a survey of companies. **Results:** We detected 102 WHPOW research studies conducted in conjunction with supranational organizations, public institutions, companies, social partners, NGOs and educational institutions. The main objectives of the WH-POW were to improve the work organization. **Conclusions:** The best way to promote effective WHPOW interventions is by disseminating awareness of best practices and correct methods of analysis. Our study suggests ways of enhancing WHPOW at both a national and European level.

Riassunto

«Le attività di promozione della salute per i lavoratori anziani nei luoghi di lavoro in Italia». Introduzione: L'Italia è il paese europeo con la più alta quota di ultrasessantacinquenni. In anni recenti, l'insostenibilità del sistema sociale ha costretto ad innalzare l'età del pensionamento e ridurre le possibilità di uscita precoce, aumentando così bruscamente l'età della forza-lavoro. Oggi in Italia una significativa quota di lavoratori anziani è costretta a svolgere lavori che erano stati pensati per i giovani. Un intervento sistematico di promozione della salute per i lavoratori anziani è indispensabile. Obiettivi: Il progetto europeo ProHealth65+ ha il compito di selezionare e validare le buone pratiche per l'invecchiamento riuscito o attivo. In questo ambito ci siamo posti il compito di censire i progetti di

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Corrispondenza: Nicola Magnavita, Università Cattolica del Sacro Cuore, Largo Gemelli 8,00168 Roma E-mail: nicolamagnavita@gmail.com

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promozione della salute svolti nei luoghi di lavoro del nostro paese. Metodi: Le iniziative di promozione della salute per i lavoratori anziani nei luoghi di lavoro (WHPOW) sono state censite mediante una revisione della letteratura scientifica e grigia integrate da una survey delle aziende. Risultati: Sono stati censiti 102 interventi di WHPOW, condotti con la partecipazione di organismi sovranazionali, enti pubblici, aziende, parti sociali, NGO e istituti di istruzione. Gli obiettivi dei WHPOW erano prevalentemente volti a migliorare la qualificazione dei lavoratori anziani o il clima lavorativo e le attitudini verso gli anziani, in molti casi anche a migliorare l'organizzazione del lavoro. Conclusioni: Diffondere le conoscenze circa le buone pratiche ed i corretti metodi di promozione è indispensabile per realizzare nei luoghi di lavoro interventi efficaci di miglioramento della salute dei lavoratori anziani. Si raccomandano alcune misure a livello nazionale ed europeo per favorire le attività di WHPOW.

The population is aging in all developed countries. In European countries, the median demographic age has been increasing since 1960. A lower birth rate and increased life expectancy are the main reasons for this phenomenon, which has put at stake the sustainability of social security and health care services.

In fact, in 2013, at 82.8 years, Italy had one of the highest life expectancy at birth in the world, the fourth highest after Japan, Spain, and Switzerland (24, 25). The median age of the Italian population was 44.7 years, the second highest in Europe and 2.5 years above the median EU28 age (10). In 2015, Italy had the highest number of citizens aged 65 years or over (21.7%, compared to the EU28 average of 18.9%) (11).

Demographic changes have had a significant impact on the work population, i.e. the proportion of people able to work. However, rapidly changing demographics have not been accompanied by prompt changes in labor and retirement laws.

In the last few years, Italian governments have attempted to improve the situation by rapidly increasing the age at which workers can retire. By 2020, the average retirement age in Italy will be approximately 70 years. The employment rate of the Italian population aged between 55 and 64 years increased sharply after 2005 to reach 46% by 2014. This was a more rapid increase than in the EU28. However, the average duration of working life in Italy was 30.3 years, significantly less than in the entire European Union (28 countries) where, in the same year, the duration of working life was 35.2 years (9).

The definition of 'older worker' is still controversial, since different agencies and organizations use a broad spectrum of ages, ranging from 40–65 years, or more. For example, the U.S. Department of Labor, in agreement with most of the literature (15), considers workers to be older if aged 55 years or more (2), whereas the US Age Discrimination in Employment Act (33) provides protection for anyone in the workplace over the age of 40 years. In the workplace sector, workers aged over 45 years are generally considered to be "older" (5). In the following analysis, we have taken this variability into account by specifying the different age limits chosen in some studies. When the limit was not specified, 50 years was taken as the cut-off age.

In the coming years, an increasing proportion of older workers who have not been able to retire will be forced to remain active. Unfortunately, their jobs were designed for young workers. This situation explains why health promotion for older workers is an absolute necessity rather than merely an attractive option.

The European research project "Health promotion and prevention of risk - action for seniors Pro-Health 65+" funded by the European Community Consumers, Health and Food Executive Agency (Chafea) within the 2nd Program of Community Action in the field of health aims to define and validate best practices and evaluate their beneficial effects in European countries. Within this project we identified research interventions for the health promotion of elderly workers that have been conducted in selected countries of Central Europe, Eastern Europe and the Mediterranean. The results of this part of the study have been published elsewhere (16). Within the chosen Mediterranean countries, Italy is by far the most active country as regards WHPOW activities. This paper analyzes WHPOW activities conducted in Italy in order to detect: 1) the number of research activities performed in the observation period; 2) the regulatory framework and the political context of the country; 3) the type of institutions involved, and the role that each institution plays in the projects; 4) the objectives of each research program.

METHODS

WHPOW projects conducted in Italy were retrieved through a 3-way investigation involving a systematic search of the scientific literature, a snowball search of grey literature, and a survey of companies.

The systematic review was conducted by searching electronic databases (MEDLINE, ISI Web of Science, SCOPUS, The Cochrane Library, CINAHL and PsychINFO) and identifying English or Italian articles, published between January 2000 and May 2015. A total of 28 studies were eligible for inclusion in our study. The results of this part of the study have been described elsewhere (28).

The second phase of the research was a snowball search on grey literature to identify activities carried out by various institutions in support of older workers in the EU countries. An advanced search was initially conducted by entering in Google the keywords "health promotion", "age management" and "older worker". Furthermore, the above-mentioned keywords were used in a country specific string (i.e. "health promotion", "age management", "older worker" and "Italy"). Literature reviews were retrieved and used as a valuable source of information on specific studies.

The third stage of data collection was a survey of companies. The list of companies to be contacted was obtained by collecting together the rankings of the world's major corporations according to sales, brand, appreciation by workers and attention to the elderly. After eliminating duplicates from the original list of 1,200 companies, we obtained the e-mail address of 651 firms. Companies were contacted online with the SurveyMonkey program; 107 of them responded in three successive waves.

For each of the WHPOW programs identified using this three-way strategy we extracted data on institutions that had participated in the initiative. The institutions were divided into 10 categories: 1. Internal or supra-governmental organizations; 2. Governmental Institutions; 3. Employers' representatives or organizations/Chamber of Labor/ Employment agencies; 4. Employees' representatives or organizations/Trade Unions; 5. Enterprises; 6.Occupational Physicians/Occupational Health Services; 7. Health Insurance Companies; 8. Nonprofit Organizations (NPOs)/Non-governmental Organizations (NGOs); 9. Research organizations; 10. Other private organizations. The role that each institution had in a project was assessed following the SPOFER method (31) so that the institutions identified were arranged according to the categories of roles or functions they performed, i.e., providing setting (S), delivering promotion (P), organizing (O), funding (F), providing expertise (E), and regulating (R). Project aims were examined and classified into four thematic areas: 1. Work Climate and Attitude; 2. Qualification and Training; 3. Work Organization; 4. Health Outcomes.

RESULTS

We retrieved 102 WHPOW items, most of which (87) were specifically and clearly targeted at older workers, while 15 included the age issue but were open to workers of all ages.

We identified 12 literature reviews and a number of laws and documents concerning older workers, but we were unable to find guidelines for health promotion in Italian (or in English addressed to Italian readers).

The objectives of most of the programs (54) concerned multiple areas. The most frequent combination (21 projects) aimed at improving the work climate, contrasting ageism, i.e. the existence of ageist stereotypes and perceptions about older workers, addressing barriers that older workers may face in attaining and maintaining satisfactory work and improving the attitudes towards the elderly through the introduction of specific qualifications and training. Of the WHPOW programs that dealt with one specific area, 10 (9.8%) aimed to change the work climate by improving the attitudes of managers or supervisors toward older workers and by fighting discrimination and the exclusion of elderly workers. The specific aim of one of these projects was to reduce the gender gap among older workers by introducing special policies for older female workers (1st implementation area). Thirty-one WHPOW programs (30.4%) aimed at maintaining "lifelong learning" for older workers through specific training, or at developing their working abilities and enhancing an intergenerational transfer of knowledge, experience, ideas and skills from older to younger workers (2nd implementation area). Many of these programs, which started in the workplace, also impacted on general life (e.g., the WHPOW programs designed to facilitate the use of digital technologies among older workers). Other initiatives aimed at increasing job retention among pre-retirement workers by enhancing working skills. Five programs focused on changes in work organization for the elderly and/or aimed to develop a better and more flexible working life for older workers (3rd implementation area) by improving shift-work and work/rest schedules or by encouraging better social integration of the elderly through involvement in public activities. One WHPOW program was related to the promotion of better health outcomes (4th implementation area). Overall, improvement in the work climate was pursued in 56 programs (54.9%), training in 79 (77.4%), work organization in 37 (36.3%) and improvement in health in 13 (12.7%) projects.

Supra-governmental organizations were the sponsors for 26 Italian WHPOW projects. Eleven of these were funded by the European Commission, while a further 15 were funded by the European Social Fund Agency. Both governmental institutions (such as the Ministry of Labor and Social Policy, the Department for Family Policies of the Prime Minister's Office) and local institutions (many Regions, Provinces and Municipalities) were frequently involved in WHPOW projects. Overall, these Institutions participated in 47 projects as promoter, organizer, financing body, or source of expertise. Governmental institutions were involved in funding (27 programs), promoting (22) or organizing (32) WHPOW activities. In other projects they only provided rules and expertise. Employers' organizations were involved in 16 programs as promoter, organizer, financing body and source of expertise. Enterprises were directly involved in 39 WHPOW programs. In 11 of these activities the employer/ company funded the program. In most cases the employer made use of his/her medical and technical units to promote and organize the activity. Employees' organizations and the national health insurance system also occasionally participated as promoter and organizer. The NPOs/NGOs were engaged in 21 WHPOW projects as providers, organizers and source of expertise. Both public and private research and educational organizations provided expertise and funded or directly promoted and organized 21 projects (table 1).

An analysis of the involvement of the aforementioned groups of Institutions in each activity area (figure 1) shows that programs belonging to the first area (improvement in the work climate and attitudes toward older workers) were carried out mainly by employers/enterprises and by governmental institutions. Training activities and other programs aimed at providing lifelong learning for older workers and at promoting their professional skills (the 2nd implementation area). These were the most frequent activities in WHPOW programs and were conducted mainly by public institutions at national or local level (61 programs), enterprises and employers (57), supra-governmental institutions (27) and universities and other educational institutions. NGOs were also active in this field (20 programs each). As was to be expected, programs designed to benefit elderly workers through changes in work organization (3rd area of interest), were principally conducted by enterprises and employers or their organizations. A small number of WHPOW activities dealt with health outcomes (4th area). These were performed mainly by enterprises and were financed by public institutions.

DISCUSSION

The first objective of our research was to identify the studies conducted in the period under investigation and to compare them with the needs. Our search detected 102 activities carried out in Italian workplaces to promote older workers' health. We acknowledge that our study was restricted as only the workplace activities published in peer-reviewed

| Institution | Role (N of programs) | Total number of programs* |
|---|--|------------------------------|
| | | |
| Supra-governmental organizations | Financing body (26) | 26 |
| Governmental Institutions | Promoter (22) Organizer (32) Financing body (27) Expertise source (4) | 47 |
| Employers' representatives or organizations | Promoter (15) Organizer (11) Financing body (1) Expertise source (2) | 16 |
| Employees' representatives or organizations | Promoter (1) Organizer (2) | 3 |
| Enterprises | Setting (5) Promoter (38) Financing body (11) Expertise source (3) | 39 |
| Occupational Physician/Occupational health services | Organizer (32) | 32 |
| Health Insurance Company | Promoter (1) Organizer (1) | 1 |
| Non-profit organization (NPO)/Non-governmental organization (NGO) | Promoter (19) Organizer (19) Expertise source (1) | 21 |
| Research or educational organizations | Promoter (20) Organizer (18) Expertise source (5) | 21 |

| Table 1 - Role performed | y Institutions involved in | WHPOW programs in Italy |
|--------------------------|----------------------------|-------------------------|
|--------------------------|----------------------------|-------------------------|

* The total number is higher than 102 as some institutions played more than a role

or gray literature could be identified. This is the main limitation of our study. Nevertheless, considering the large amount of work conducted in the field of occupational health in Italy, it is surprising that only a very small number of WHPOW programs were detected. According to data provided by the Italian Ministry of Health, in 2013 an Occupational Health physician was present in at least 450,000 companies employing a total of around 10 million workers. This means that in Italy, medical examination coverage in the workplace ranges from

20% to 60% of the workforce, one of the highest in Europe and the world (23). Moreover, the distribution of WHPOW initiatives in our country is very heterogeneous, reflecting the inequalities that exist in the economic and health fields. The most active promoting institutions and companies are mainly in the North and Center of the country. This leads to the conclusion that there is great potential for health promotion in Italian workplaces.

Compared to the situation in the EU as a whole, the Italian context presents some differences.

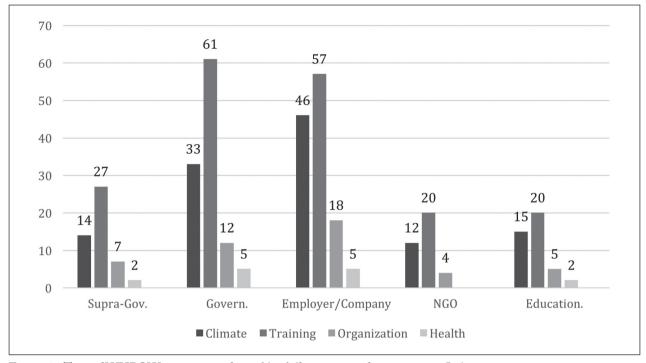


Figure 1 - Type of WHPOW activities performed by different types of institutions in Italy

European Directives on safety, health and antidiscrimination (incorporated into Italian legislation) require workplaces to be adapted to the needs of older and disabled workers (17). Strict control on the part of the Italian National Institute for Insurance against Accidents at Work (INAIL) and a valuable interchange with trade unions on occupational matters help to keep attention focused on work-related topics. The issue of older worker employment is high on the political and social agenda and some consideration is also being given to the performance of older workers in the workplace, even though matters concerning their working conditions and safety and health have still not been adequately addressed.

The third aim of this study was to analyze the role of institutions, and compare Italy with the situation in the rest of the EU. Results indicate that several Italian institutions are active in the field of WHPOW. Nevertheless, their efforts are not yet sufficiently wide-ranging as initiatives in support of older workers are often incomplete and restricted to certain areas (Regions, provinces, towns). National policies for workers aged 50+ are designed mainly to encourage longer employment or to reduce unemployment, but are still not integrated into a regular framework. Lifelong learning and other measures to encourage vocational training are not specifically targeted at older workers and usually have low participation rates (7).

Italy has a vast number of laws and institutions concerning health and safety at work. Although INAIL, INPS, employers, occupational physicians and workers themselves have a number of obligations regarding health and safety at work, to date there is no legal framework to induce these actors to adopt a coordinated approach to compensation for workers affected by occupational injuries and diseases or to rehabilitation and improvements in the working environment and work organization. Our country has no laws that promote health promotion in workplaces or guidelines on the subject. There is no incentive for companies to invest in the rehabilitation of older workers or promote their job placement.

This situation undoubtedly influences employers' behavior. A recent study comparing the age-based human resource strategies that have been adopted in 6 European countries (Denmark, Germany, Italy, The Netherlands, Poland, and Sweden) showed that instead of formulating strategies for promoting active aging, most European employers still frequently opt for the easy way out by using exit schemes (34).

In Italy, enterprises are only marginally involved as funding bodies for WHPOW programs. This may seem surprising when we consider the essential role the workplace has in health promotion and the extent to which Italian companies are obliged to prevent occupational risks. In spite of this scenario, where health and safety obligations are strictly implemented (non-compliance is a punishable offence), there are relatively few WHPOW interventions. This may be due to the fact that although employers benefit from the presence of healthy and active older workers as a result of workplace health promotion and society in general spends less on the health care of a healthy elderly person, the full (after-tax) costs of the project are still borne by the employer.

Moreover, there is still limited evidence that health promotion programs are effective and cost-effective (1, 3, 14, 26, 27, 30, 35-37). In fact, only a small part of the studies we analyzed reported the efficacy of the results achieved. Consideration should be given to the fact that the value of WHPOW programs depends not only on financial or economic considerations, but also on other factors such as physical and mental health, the quality of life, perceived health status, and the functional capacity of workers. To reach accurate conclusions, research designed to study the value of workplace programs should be based on a comprehensive assessment of all the benefits, drawbacks and resources used, and an evaluation of the proper population health context (29). A well-developed assessment at organizational level is also needed together with benchmarking tools to help employers evaluate the overall value of their health promotion intervention and the implementation of evidence-based practices (22).

The benefits of a WHP program can be seen only in the long-term, but the costs are immediate. In times of economic crisis, employers are reluctant to invest in promotion. In Italy, as in the rest of the world, there is a 'laboristic' approach to health and safety legislation: the first objective is to avoid workrelated damage. The holistic approach, i.e. action to prevent damage due to non-occupational risks, is of secondary importance. In this situation companies have little incentive to invest in promotion. To change this situation, more cooperation is needed between government institutions such as the Ministry of Labor and Social Policy or the Ministry of Health and enterprises. This would facilitate and endorse the sharing of WHP costs, a model suggested by Downey (6) and already implemented in the Flanders region of Europe.

A second, but very important consideration is that it is difficult for companies to set up programs reserved only for the elderly as they might be accused of discrimination against young workers. In fact, companies prefer to introduce health promotion programs for all ages. Although we agree that health promotion in the workplace must be directed toward workers of all ages (13), it is very important that aging issues be included in the promotion agenda, and that actions performed in the workplace be aimed at enhancing the workers' sense of responsibility for their health in a "successful aging" perspective.

Another problem peculiar to Italy, where most companies tend to be small, is that these workplaces have many barriers, beliefs and challenges regarding health promotion. Reports indicate that small businesses often consider health promotion activities to be a luxury rather than a serious focus for their activities (32). Further issues can be discrimination and ageism. Ageist stereotypes and negative perceptions about older workers are often present and may have complex implications on policies and practices at the workplace (12).

A final important consideration is that an aging workforce is a very recent phenomenon. In the past, when national policies favored early retirement, companies had no interest in retaining a healthy elderly non-worker. Many changes have occurred in attitudes, lifestyles, habits and levels of health in older people since new retirement ages and criteria were introduced in 2011 and time is needed to assess the effectiveness of WHPOW activities. In our opinion it is still too early to evaluate the results of this type of health promotion. This may also be the reason for the limited number of initiatives reported in the literature.

Our study indicates that public institutions often intervene in WHPOW in the role of regulator. This occurs because Italy has no specific laws to regulate health promotion; consequently, local bodies are often called upon to establish rules by interpreting national laws that only partially target WHPOW.

Funds are often provided not only by companies and national or supra-national institutions, but also by the Italian Regions and Provinces. Local authorities also frequently act as promoters and organizers of WHPOW, coordinating the activities of NPOs/ NGOs and other private institutions. Research organizations (e.g., Universities) generally provide expertise.

The fourth part of our research focused on the type of intervention proposed in the workplace. Most studies focused on improved qualifications and training for older workers and aimed at changing the working climate and fighting discriminatory behaviors. A small number of studies included changes in work organization. These programs followed two distinct methods: a non-participatory, top-down approach, and a participatory, down-top approach. This latter approach used group interventions that enabled workers to have a say in how the actions were conducted. Examples included health circles or problem-based learning groups. A few health promotion programs focused specifically on pathogenic health outcomes, such as the presence/ absence of diseases or injury. Examples of these outcomes were common mental disorders, such as anxiety or depression, distress or burnout, musculoskeletal disorders, cardiovascular diseases, allergy, and accidents.

CONCLUSIONS

The long tradition that Italy boasts in occupational medicine and safety in the workplace provides the basis upon which we can build effective health promotion for aging workers. Our society can meet the challenge of aging by encouraging older adults to be involved in work activities, by enhancing their work engagement and sustaining their productive efforts through participatory changes in the working environment and the promotion of healthy lifestyles (20). Reasonably priced and effective worksite health actions can be undertaken in our country (21). Empirical evidence, while still emerging, provides some support for the effectiveness of integrated workplace interventions that combine health promotion with occupational health and safety (4). In this perspective, occupational health physicians are called upon to perform a new role: they must extend their professional sphere to deal not only with occupational hazards but also with broader life-related risk factors (18, 19).

In conclusion we make some recommendations for national authorities. We suggest allocating economic resources to public workplace health promotion programs. On the basis of experiences carried out in countries such as the Netherlands, where an initial State stimulus to WHPOW interventions was continued spontaneously by numerous companies at their own expense once they had verified their effectiveness, new and stable forms of workplace health promotion funding involving private actors could be undertaken in Italy. Moreover, Scientific societies, Research and Health Institutions should share experiences involving effective workplace health promotion activities. Furthermore, we urge social partners to support the participation of older workers in decision-making in company health policies. More importance should be given to the role of occupational health professionals as health promoters and advisers in actions for seniors in order to foster healthy lives and prevent specific health risk.

At a European level, we encourage EU member states to disseminate workplace health promotion resources (methods, programs, good practices) in national languages. We also urge EU member states to promote public health policies that aim at sharing expenses for health promotion between enterprises and local/national authorities. EU member states must also promote prizes and rewards for institutions active in the field of health promotion for aged workers; this measure could help to share information about the effectiveness of WHPOW activities and lead to the gathering of evidence.

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References

- Baxter S, Sanderson K, Venn AJ, et al: The relationship between return on investment and quality of study methodology in workplace health promotion programs. Am J Health Promot 2014; 28: 347-363. doi: 10.4278/ ajhp.130731-LIT-395
- CDC National Center for Chronic Disease Prevention and Health Promotion: Older Employees in the Workplace. Issue Brief No. 1, July 2012. http://www.publichealth.uiowa.edu/hwce/wp-content/uploads/2014/11/ Issue_Brief_No_1_Older_Employees_in_the_Workplace_7-12-2012_FINAL508.pdf. Accessed 15 September 2015
- Cherniack M: Integrated health programs, health outcomes, and return on investment: measuring workplace health promotion and integrated program effectiveness. J Occup Environ Med 2013; 55 (12 Suppl): S38-45. doi: 10.1097/JOM.00000000000044
- 4. Cooklin A, Joss N, Husser E, Oldenburg B: Integrated Approaches to Occupational Health and Safety: A Systematic Review. Am J Health Promot 2016 Jan 5. [Epub ahead of print]
- Delloiacono N: Musculoskeletal safety for older adults in the workplace. Workplace Health Saf 2015; 63: 48-53
- 6. Downey A, Sharp D: Why do managers allocate resources to workplace health promotion programmes in countries with national health coverage? Health Promotion International 2007; 22: 102-111
- 7. Eurofound. Italy: The role of governments and social partners in keeping older workers in the labour market. Available at: http://www.eurofound.europa.eu/observatories/eurwork/comparative-information/national-contributions/italy/italy-the-role-of-governments-and-social-partners-in-keeping-older-workers-in-the-labourmarket. Accessed 16 Feb 2017
- European Commission. The 2015 Ageing Report Underlying Assumptions and Projection Methodologies. Brussels: European Economy 8|2014; 2014. Available from: http://ec.europa.eu/economy_finance/publications/euro pean_economy/2014/pdf/ee8_en.pdf. Acces-sed 16 Feb 2016
- 9. Eurostat. Employment and unemployment. Available at: http://ec.europa.eu/eurostat/web/lfs/data/database. Accessed 16 Feb 2017.
- Eurostat. Population (Demography, Migration and Projections). Available at: http://ec.europa.eu/eurostat/web/ population-demography-migration-projections/deathslife-expectancy-data/database. Accessed 16 Feb 2017
- 11. Eurostat. Population age structure by major age groups, 2005 and 2015. Available at: http://ec.europa.eu/euro-stat/statistics-explained/index.php/File:Population_

age_structure_by_major_age_groups,_2005_and_2015_ (%25_of_the_total_population)_YB16.png. Accessed 15 Feb 2017

- Harris K, Krygsman S, Waschenko J, Laliberte Rudman D: Ageism and the Older Worker: A Scoping Review. Gerontologist. 2017. pii: gnw194. doi: 10.1093/geront/ gnw194
- Korzeniowska E: Health beliefs and health behavior in older employees of medium-size and large enterprises. Med Pr 2004; 55: 129-138
- Lerner D, Rodday AM, Cohen JT, Rogers WH: A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs. J Occup Environ Med 2013; 55: 209-222. doi: 10.1097/JOM.0b013e3182728d3c
- Loeppke RR, Schill AL, Chosewood LC, et al: Advancing workplace health protection and promotion for an aging workforce. J Occup Environ Med 2013; 55: 500-506. doi: 10.1097/JOM.0b013e31829613a4
- Magnavita N, Capitanelli I, La Milia DI, et al: Workplace health promotion programs in different areas of Europe. EBPH 2017; 14 (2, Suppl 1): e12439-1 DOI: 10.2427/12439
- Magnavita N, Fuksia S, Poscia A, et al: Adattare il lavoro all'anziano. Una sfida ergonomica per l'Europa nella ricerca ProHealth65+. G It Med Lav Ergon 2016; (3 Suppl): 20
- 18. Magnavita N: Engagement in health and safety at the workplace: a new role for the occupational health physician. In Graffigna G (eds): Promoting Patient Engagement and Participation for Effective Healthcare Reform. Hershey, Pennsylvania: IGI Global, 2016. DOI: 10.4018/978-1-4666-9992-2
- 19. Magnavita N: Invecchiamento della forza-lavoro. L'importanza del work engagement e dell'ergonomia partecipativa. [Aging workforce. The importance of work engagement and participatory ergonomics] HPNCDs Health Policy in Non Communicable Diseases 2016; 3: 56-65
- 20. Magnavita N: Productive aging, work engagement and participation of older workers. A triadic approach to health and safety in the workplace. EBPH 2017; 14 (2, 1 Suppl): e12436- DOI: 10.2427/12436
- 21. Mastrangelo G, Marangi G, Bontadi D, et al: A worksite intervention to reduce the cardiovascular risk: proposal of a study design easy to integrate within Italian organization of occupational health surveillance. BMC Public Health 2015; 15: 12. doi: 10.1186/s12889-015-1375-4
- 22. Meador A, Lang JE, Davis WD, et al: Comparing 2 National Organization-Level Workplace Health Promotion and Improvement Tools, 2013-2015. Prev Chronic Dis 2016; 13: E136. doi: 10.5888/pcd13.160164

- 23. Ministero della Salute. Allegato 3B del D.Lgs 81/08. Prime analisi dei dati inviati dai medici competenti ai sensi dell'art. 40. Italia 2013. Available at: http://www. salute.gov.it/imgs/C_17_pubblicazioni_2393_allegato. pdf. Accessed 14 Feb 2017
- 24. OECD. Demography Elderly population OECD Data [Internet]. Data.oecd.org. 2015 Available from: https://data.oecd.org/pop/elderly-population.htm#indica tor-chart. Accessed 14 Feb 2017
- 25. OECD. Life expectancy at birth. Available at: https:// data.oecd.org/healthstat/life-expectancy-at-birth.htm. Accessed 16 Feb 2017
- 26. Osilla KC, Van Busum K, Schnyer C, et al: Systematic review of the impact of worksite wellness programs. Am J Manag Care 2012; 18: e68-81
- 27. Pelletier KR. A review and analysis of the clinical and costeffectiveness studies of comprehensive health promotion and disease management programs at the worksite: update VIII 2008 to 2010. J Occup Environ Med 2011; 53: 1310-1331. doi: 10.1097/JOM.0b013e3182337748
- Poscia A, Moscato U, La Milia DI, et al: Workplace health promotion for older workers: a systematic literature review. BMC Health Serv Res 2016; 16 Suppl 5: 329. doi: 10.1186/s12913-016-1518-z
- Pronk NP: Placing workplace wellness in proper context: value beyond money. Prev Chronic Dis 2014; 11: E119. doi: 10.5888/pcd11.140128
- 30. Rongen A, Robroek SJ, van Lenthe FJ, Burdorf A: Workplace health promotion: a meta-analysis of effectiveness. Am J Prev Med 2013; 44: 406-415. doi: 10.1016/j.amepre.2012.12.007

- Sitko SJ, Kowalska-Bobko I, Mokrzycka A, et al: Institutional analysis of health promotion for older people in Europe - concept and research tool. BMC Health Serv Res 2016; 16 Suppl 5: 327. doi: 10.1186/s12913-016-1516-1
- 32. Taylor AW, Pilkington R, Montgomerie A, Feist H: The role of business size in assessing the uptake of health promoting workplace initiatives in Australia. BMC Public Health 2016; 16: 353. doi: 10.1186/s12889-016-3011-3
- The U.S. Equal Employment Opportunity Commission (EEOC). The Age Discrimination in Employment Act. Pub. L. No. 90-202
- 34. van Dalen HP, Henkens K, Wang M: Recharging or Retiring Older Workers? Uncovering the Age-Based Strategies of European Employers. Gerontologist 2015; 55: 814-824. doi: 10.1093/geront/gnu048
- 35. van Dongen JM, Proper KI, van Wier MF, et al: Systematic review on the financial return of worksite health promotion programmes aimed at improving nutrition and/or increasing physical activity. Obes Rev 2011; 12: 1031-1049. doi: 10.1111/j.1467-789X.2011.00925.x
- 36. van Wier MF, van Dongen JM, van Tulder MW: Worksite physical activity and nutrition programmes: beneficial to our health and wallet? Ned Tijdschr Geneeskd 2013; 157: A4963
- 37. Wierenga D, Engbers LH, Van Empelen P, et al: What is actually measured in process evaluations for worksite health promotion programs: a systematic review. BMC Public Health 2013; 13: 1190. doi: 10.1186/1471-2458-13-1190

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