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Extension of working life and implications for occupational health in Chile

Implicancias para la salud ocupacional del envejecimiento y la extensión de la vida laboral en Chile

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|Abstract |

Chile has one of the highest effective retirement ages among the countries of the Organisation for Economic Cooperation and Development (OECD). This could be associated with retirement at older ages, as low pensions encourage people to remain active in the workforce.

People undergo several changes due to the passage of time, and they have an impact on their health from a biological, psychological and social point of view. However, there is not enough knowledge on how these changes impact and interact with working, employment and health conditions of workers as they get older.

This article aims to contribute to the critical debate on the extension of working life and its implications for occupational health. Some reflections in this regard are proposed based on a review of the most recent relevant literature.

Keywords: Ageing; Occupational Health; Employment; Gender; Public Policy (MeSH).

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Introduction

The rapid growth of the elderly segment is one of the most important social transformations in Chile as it will make up nearly a quarter of the population in a few years. Consequently, this phenomenon urgently needs to be addressed from different perspectives, because it has multiple consequences in areas as diverse as health, housing, transport, economy, among others.

Resumen

Chile tiene una de las edades de retiro efectivo de la vida laboral más elevadas de los países de la Organización para la Cooperación y el Desarrollo Económicos. Esto puede deberse a que muchas personas siguen trabajando hasta avanzada edad dado que sus bajas pensiones los impulsan a mantenerse activos laboralmente.

Existen diversos cambios que se producen en las personas debido al paso del tiempo y que tienen impacto en la salud desde el punto de vista biológico, psicológico y social. Sin embargo, en la actualidad no se tiene suficiente conocimiento respecto de cómo esos cambios impactan e interactúan con las condiciones de trabajo, empleo y salud de las personas a medida que envejecen.

Este artículo pretende hacer un aporte al debate crítico respecto a la extensión de la vida laboral y sus implicancias en la salud laboral. Se proponen algunas reflexiones en la materia con base en una breve revisión de la literatura más reciente.

Palabras clave: Envejecimiento; Salud laboral; Empleo; Género; Política pública (DeCS).

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With a population of over 18 370 000 according to the most recent statistics, life expectancy in Chile is one of the highest of the continent, reaching 77.3 years for men and 82.1 years for women. (1) According to Marín (2), the increased life expectancy currently found in the population tends to be perceived as a problem from a medical, social and economic point of view, taking into account the costs associated with the complexity and concomitance of various pathologies, the increase in drug costs, the potential for dependency and care needs, etc.

One of the aspects that have been barely studied to date is the impact that ageing has on the working place. Specifically, the Chilean working reality is regulated by multiple norms and laws that are transgressed by companies on a daily basis; in addition, there is little participation of workers in decision making and a low union representation, with great deregulation in matters of health and safety at work. Chile has a quite vulnerable "social floor" and, in this context of tensions and conflicts, it is necessary to accommodate a population distribution with a larger amount of elderly people.

In this scenario, uncertainty increases for those approaching the final stages of their productive lives: Chile's pension system, which includes old-age, disability and survival benefits, is currently experiencing a crisis characterized by low coverage, contribution densities that do not exceed 50% for the entire affiliated population, and an insufficient income replacement rate during the activity stage. (3-4)

The latest political discussions in the country on this regard have paid especial attention to the extension of working life. The process of reforming the Chilean pension system has been under scrutiny in recent years and one of its possible implications —increasing the current retirement age— has focused exclusively on economic discussions and has not had sufficient evidence about other relevant aspects. In particular, this important discussion in the country has not received contributions from scientific knowledge concerning employment, working and health conditions among the working population at all ages; so it is important to characterize the jobs they perform and know what circumstances the country's workers will face with respect to a possible increase in the legal retirement age and, therefore, the extension of their working life.

This reflection article aims to contribute to the critical debate on the extension of working life and its impact on health and safety at work, based on a brief literature review and updated scientific evidence. Some proposals are made to address the changes brought about by ageing in this area.

Age-related changes and their effects on occupational health: evidence summary

Many changes can be observed as people age, and most of them are part of what could be considered as normal ageing of the body, as they are usually associated with functional capacity deficit and decline (decreased sensory acuity, slowed functions, etc.) However, there are also processes related to a positive dimension of ageing: the potential for learning and the increase of wisdom.

The process of ageing involves progressive structural and functional changes, including reductions of bodily performance and changes in psychological disposition, entailing various consequences for working life. (5-7) This process results in a gradual and progressive deterioration of physical and mental health conditions, and may be associated with an increase in some chronic health problems which, if appropriate preventive measures are not established in a timely manner, may lead to functional limitations and progressive loss of autonomy. (8)

Evidence from occupational health research shows that older workers generally have better safety performance, with lower accident rates in some productive sectors; however, these workers are at greater risk of fatal accidents and take longer to recover from serious incidents. (9-11) Although physical and psychological changes occur at ages over 50, there are also large individual differences, and the risks associated with those changes can be reduced if activity is sustained. (12,13)

About the positive aspects of ageing, Ilmarinen (14) highlights a series of characteristics in older workers such as wisdom, better control of life events, sharp wit, greater commitment to work, ability to deliberate, greater loyalty to the employer, ability to reason, fewer absences from work, more global capacity for understanding, greater work experience, better verbal command and greater motivation to learn. All these factors would compensate for negative aspects from the point of view of risks and safety at work.

Occupational health and ageing: from "decent work" to "sustainable work"

One of the concepts that emerged in recent years within the discussion on promoting better working conditions is "decent work". The International Labour Organization (ILO) has established a Decent Work program that has leaded both promotion of decent work and advisory activities around the world. This concept summarizes the aspirations of people regarding their working lives in relation to opportunities and income; rights, voice and recognition; family stability; personal development; and gender equity and equality. According to the ILO, decent work is a major contribution to helping to reduce world poverty, and is a means to achieving equitable, inclusive and sustainable development. (15)

This concept has been questioned and debated because it is considered to be very broad and imprecise—especially, when compared to other technical constructs such as the quality of employment—which would make it difficult to carry out measurements on the subject in different countries. (16-18) Researchers from various disciplines have questioned the departure from the concept of the ethos of social justice that defined it at first. Recent contributions from psychology have argued that decent work has not focused on the role of meaning and purpose in a worker's life, so a psychological perspective should help revitalize the decent work agenda by emphasizing on individual experiences, which in turn would reconnect the concept of decent work with its origins in social justice. (19)

A key concept for the design of public policies on occupational health at all ages is "sustainable work" as proposed by Docherty *et al.* (20) The authors compare "sustainable work systems" with "labor-intensive systems" and argue that the latter, in the long term, will have detrimental effects both on individuals and on the quality of products and services.

In 2012, a decade after the publication of the original work by Docherty *et al.*, the European Foundation for the Improvement of Living and Working Conditions used this idea in various studies and in its proposal for monitoring the ageing workforce. From a prospective point of view, the concepts of sustainable work and life cycle contained in various documents (21-24) provide a comprehensive approach to assist policy makers in improving both employment and working conditions for all; this is done by considering both the individual changes that can occur with ageing and the implications of such changes for safety and health in the workplace. (11)

Association between gender and ageing: a barely explored field in occupational health

The World Health Organization (WHO) states that one of the most important inequalities that should be addressed to achieve equity in health is gender. The area of study that intersects gender and work has an important research tradition in North America and Europe. One of the essential researchers in this field is the Canadian Karen Messing (25), whose contribution to the recognition of the specificity of gender differences and their relationship to occupational health has been highly valued. Messing is one of the authors of a document that summarizes the evidence on gender equity, work and health presented by WHO in the last decade. (26) However, the approach

to the process of ageing at work from a gender perspective has been barely explored and constitutes an emerging challenge for occupational health research. (27)

Campos-Serna *et al.* (28) conducted a systematic review in which they concluded that there are a number of gender inequalities in occupational health related to working and employment conditions. Among their findings are that men are more exposed than women to longer working hours, higher levels of physical demands, and more noise. Women, on the other hand, have worse contractual working conditions and psychosocial work environments, show greater job insecurity and report worse self-perceived physical and mental health. In general, women have poorer physical and mental health than men.

Regarding the oldest age group in the workforce, there are many gender disparities. (29-31) Some of the factors causing these differences are: segregation, both horizontal (between sectors of activity) and vertical (between categories of work), which leads to very different work situations for women and men; different career paths for men and women; different opportunities for self-fulfillment at work and recognition at work; and unequal distribution of domestic work and care tasks.

A recent study in Chile based on secondary sources clearly confirms these findings, showing that the presence of horizontal and vertical segregation in the case of women extends into old age, with a concentration in the service sector of the economy and lower levels of employment status (as is the case with domestic service, even among workers over 70). In turn, the double burden and caregiving tasks extend into very old age. (32)

The debate on extending working life: why should working life be extended into old age?

The ageing of the population has become a social phenomenon that demands responses from various areas of public policy. Concern about the growing proportion of older people around the world and the costs associated with a considerable number of potential non-working population, in a critical scenario from the perspective of the sustainability of pension systems, has prompted debates about the need to prolong people's working lives as long as possible.

Alongside the ageing of the workforce, there has been a marked increase in the prevalence of "nonstandard" or "contingent" work (9), that is, work that does not involve a permanent position with any employer, of 35 hours or less per week and of limited duration (temporary or fixed-term). Contingent work is similar to other constructs, such as flexible and precarious work.

For years, European countries have been developing legislative strategies to keep people working until old age (33,34), discouraging early retirement formulas and increasing the legal retirement age, for example. As Alcover (25) points out, there has been a long-standing trend combining the creation of work spaces for people of retirement age, the formulation of policies that encourage the maintenance of older workers in the labor market, and the encouragement of reincorporation once retired. (35)

In the case of the United Kingdom, the Department for Work and Pensions (DWP) has been analyzing the issue for the past decade, commissioning various specialists to conduct studies; such is the case of Phillipson & Smith (36) who have been quite critical of the application of these measures without having a clear background of the multiple dimensions that make up such a complex phenomenon. Recently, the DWP has funded extensive research involving social psychologists on the attitudes, knowledge and information preferences of older workers, as well as their broader orientations for extending working life. (37)

Various relevant aspects regarding the extension of working life have been addressed by several researchers. From a public policy perspective, it is especially interesting to know which modalities have been stimulated to encourage permanence on a job. The literature points out that current policies along these lines in Europe are oriented towards the development of flexible forms of employment, whether salaried, self-employed or mixed, full-time or part-time, stable or temporary. (38)

A concept of growing interest is "bridge employment", which refers to any type of paid work (e.g. part-time, full-time or self-employment) that employees may have after retirement. It is called bridge employment because it spans over the period of time after retiring from a professional job and before full retirement; however, this idea may be ambiguous: older people may retire from one job and take a second job, but never retire completely from the workforce. In this case, employment is not, strictly speaking, a bridge to anywhere, but rather a bridge to the end of existence, if the person works until before their death. (39)

Finnish researchers have analyzed the association of working and health conditions with long-term employment (six months after reaching the retirement age) in a cohort of non-disabled older employees, concluding that the key factors for extending working life into old age would be good mental health combined with the opportunity to control working time. (40)

A very interesting contribution to the study of employability in older workers is the concept of work ability. Towards the end of the 1990s, the Finnish Institute of Occupational Health introduced this construct, which was based in part on the results of an 11-year followup of more than 6 500 salaried and office workers (41) and refers to the balance between the worker's perceptions of the demands of their work and ability to cope with those demands. It is a dynamic process that changes a lot for various reasons throughout an individual's working life; one of the main factors affecting this variation is ageing and its effects on people. Another major source of change that ageing workers have to face is the change in the nature of work. The main predictors of this perceived ability may be certain individual factors, job demands and health aspects such as health perception, physical fitness and lifestyle. (42) The Work ability Index-WAI was developed to assess this construct, (43); it is a questionnaire widely used both in occupational health and age management in companies.

With regard to occupational health promotion for older people, current evidence does not show that workplace promotion programs improve the working capacity, productivity or job retention of older workers, as concluded by a systematic literature review on interventions in such programs targeted specifically at older workers. (44)

As Phillipson (45) points out, a key dimension of the changing relationship between ageing and work is the tension between policies to extend working life, as well as the increasingly fragmented nature of late working life with the emergence of varied transitions, including bridge employment, second/third career, part-time work, early retirement and others. The same author is in favor of improving quality of work and safety as a precondition for supporting policies that encourage working in later life.

Conclusions

In general, until now, various positions regarding the implications and consequences of ageing converge around the benefits of being physically and intellectually active in order to preserve good health until old age. In that sense, extending working life as much as possible could be seen as a protective factor for most people and would be a sort of "promise" of healthy longevity.

Beyond the discussion of whether it is biologically and psychologically positive or not for older people to continue working, a critical reading of the design of public policies in Chile along these lines questions the pertinence of the application of measures for the legal extension of working life for the entire population. It also demands deep intersectoral reflections and proposals for transformations in the areas of regulation, inspection and management, particularly with regard to health and safety at work.

In the current scenario of the country, where older people are impoverishing due to the low pensions they receive, it is true that a significant proportion of this group works until old age, beyond the legal retirement age: Chile has a high average effective retirement age for both women (70.3 years) and men (70.9 years), one of the highest among the countries that make up the Organization for Economic Cooperation and Development. (46)

Gender equity is one of the pending issues in the country in many aspects. The working world shows great inequalities in this sense, because, after analyzing the most recent information available on the labor situation of people as they age, the great differences in labor insertion between men and women, exposure to different health risks and absence of rights (work contracts, vacations, medical leaves) are more notorious in the case of women. The discussion on the delay of the retirement age in the country and the consequent extension of working life must include a deep reflection in its agenda on what it means to be a woman and to live longer with an increasingly worse quality of life.

The accelerated ageing of the Chilean citizens and its repercussions on the work force should inspire the construction of inclusive public policies as a priority challenge for government institutions in charge of the areas of health and labor. In this sense, the regulatory framework that governs health and safety should consider age in the parameters that it incorporates in surveillance and in the specific measures that they establish.

Research on how, where and why people work as they age and how they are protected by regulations on working conditions, employment and health could provide valuable information for making the adjustments needed to think properly about extending working life in Chile.

Conflicts of interest

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References

- Instituto Nacional de Estadísticas (INE). Compendio Estadístico. Santiago de Chile: INE: 2017
- Marín PP. Reflexiones para considerar en una política pública de salud para las personas mayores. Rev. med. Chile. 2007;135(3):392-8. http://doi.org/cprpws.
- Mesa-Lago C. Reformas estructurales y Re-reformas de pensiones, y sus efectos en el bienestar social: El caso de Chile. *Política y Sociedad*. 2015;52(3):719-39. http://doi.org/c3qm.

- 4. Sojo A. El sistema contributivo de pensiones como locus de rivalidad y de un nuevo pacto social en Chile. Santiago de Chile: CEPAL - Serie políticas Sociales No. 211; 2015 [cited 2019 Mar 20]. Available from: https://goo.gl/7Da8YK.
- Harper S, Marcus S. Age-related capacity decline: a review of some workplace implications. *Ageing Horizons*. 2006 [cited 2019 Mar 20];5:20-30. Available from: https://goo.gl/iAxZNi.
- Muntaner C, Van Dussen DJ, Li Y, Zimmerman S, Chung H, Benach J. Work organization, economic inequality, and depression among nursing assistants: a multilevel modeling approach. *Psychol. Rep.* 2006;98(2):585-601. http://doi.org/ftb7wj.
- Linares FTM, Almirall HPJ, del Castillo MNP. Envejecimiento y condiciones de trabajo, ¿un problema para el tercer mundo? Revista Cubana de Salud y Trabajo. 2015 [cited 2019 Mar 20];16(1):55-60. Available from: https://goo.gl/wYfqmq.
- Albala C, Sánchez H, Lera L, Angel B, Cea X. Efecto sobre la salud de las desigualdades socioeconómicas en el adulto mayor. Resultados basales del estudio expectativa de vida saludable y discapacidad relacionada con la obesidad (Alexandros). Rev. med. Chile. 2011;139(10):1276-85. http://doi.org/fzz9zz.
- Bohle P, Pitts C, Quinlan M. Time to call it quits? The safety and health of older workers. Int J Equity Health. 2010;40(1):23-41. http://doi.org/d8xcf7.
- 10. Bisom-Rapp S, Frazer A, Sargeant M. Decent work, older workers and vulnerability in the economic recession: a comparative study of Australia, the United Kingdom, and the United States. *EREPJ*. 2011 [cited 2019 Mar 20];15(1):43-121. Available from: https://goo.gl/4VdAJW.
- Farrow A, Reynolds F. Health and safety of the older worker. Occup Med (Lond). 2012;62(1):4-11. http://doi.org/fx3dnt.
- Crawford JO, Graveling RA, Cowie HA, Dixon K. The health safety and health promotion needs of older workers. *Occup Med (Lond)*. 2010;60(3):184-92. http://doi.org/cvkbvc.
- 13. Eichhorst W, Boeri T, Braga M, Coen A, Galasso V, Gerard M, et al. Combining the entry of young people in the labour market with the retention of older workers. European Parliament; 2013 [cited 2019 Mar 20]. Available from: https://goo.gl/8R9Kaq.
- Ilmarinen JE. Aging workers. Occup. Environ. Med. 2001;58(8):546-52. http://doi.org/fvmqwc.
- International Labour Office (ILO). Decent Work Indicators. Concepts and definitions. Geneva: ILO Manual; 2012 [cited 2019 Mar 20]. Available from: https://goo.gl/wkWNRd.
- 16. Burchell B, Sehnbruch K, Piasna A, Agloni N. The quality of employment and decent work: definitions, methodologies, and ongoing debates. Cambridge Journal of Economics. 2014;38(2):459-77. http://doi.org/c3sc.
- Di Ruggiero E, Cohen JE, Cole DC, Forman L. Competing conceptualizations of decent work at the intersection of health, social and economic discourses. Soc Sci Med. 2015;133:120-7. http://doi.org/f7cvmm.
- Sehnbruch K, Burchell B, Agloni N, Piasna A. Human development and decent work: why some concepts succeed and others fail to make an impact. Dev Change. 2015;46(2):197-224. http://doi.org/f66ccn.
- Blustein DL, Olle C, Connors-Kellgren A, Diamonti AJ. Decent work: A psychological perspective. Front Psychol. 2016;7:407. http://doi.org/f8fqwd.
- **20. Docherty P, Forslin J, Shani AB.** Creating sustainable work systems: emerging perspectives and practice. London: Routledge; 2002.
- Eurofound. Sustainable work and the ageing workforce. Luxembourg: Publications Office of the European Union; 2012.
- Eurofound. Sustainable work over the life course: Concept paper. Luxembourg: Publications Office of the European Union; 2015.
- 23. Crawford JO, Davis A, Cowie H, Dixon K. The ageing workforce: implications for occupational safety and health. A research review. Bilbao: European Agency for Safety and Health at Work; 2016.

- Eurofound. Sustainable work throughout the life course: National policies and strategies. Luxembourg: Publications Office of the European Union; 2016.
- Messing K. Women's occupational health: A critical review and discussion of current issues. Women Health. 1997;25(4):39-68. http://doi.org/bfbmqk.
- Messing K, Östlin P. Gender equality, work and health: a review of the evidence. Geneva: World Health Organization; 2006.
- Peckham TK, Baker MG, Camp JE, Kaufman JD, Seixas NS. Creating a future for occupational health. *Ann Work Expo Health*. 2017;61(1):3-15. http://doi.org/f92mhb.
- 28. Campos-Serna J, Ronda-Pérez E, Artazcoz L, Moen BE, Benavides FG. Gender inequalities in occupational health related to the unequal distribution of working and employment conditions: a systematic review. *Int J Equity Health*. 2013;12(1):57. http://doi.org/gbdmpn.
- Payne S, Doyal L. Older women, work and health. Occup Med (Lond). 2010;60(3):172-7. http://doi.org/d5kkmb.
- Vendramin P, Valenduc G. A gender perspective on older workers' employment and working conditions, Working Paper 2014.03. Brussels: European Trade Union Institute; 2014 [cited 2019 Mar 22]. Available from: https://goo.gl/bdSg5b.
- 31. Crawford JO, Davis A, Cowie H, Dixon K. Women and the ageing workforce Implications for Occupational Safety and Health. A research review. Bilbao: European Agency for Safety and Health at Work; 2016 [cited 2019 Mar 22]. Available from: https://goo.gl/sg6iCb.
- 32. Vives A, Gray N, González F, Molina A. Gender and Ageing at Work in Chile: Employment, Working Conditions, Work-Life Balance and Health of Men and Women in an Ageing Workforce. Ann Work Expo Health. 2018;62(4):475-89. http://doi.org/c3sd.
- Boudiny K. 'Active ageing': from empty rhetoric to effective policy tool. *Ageing Soc.* 2013;33(6):1077-98. http://doi.org/f45qvq.
- **34. Ribeiro-Costa AC.** Occupational Health and Safety and Older Workers: Are They in Need of a Special Legal Framework? *E-Journal of International and Comparative Labour Studies*. 2016;5(1).
- 35. Alcover CM. Bridge Employment: Transitions from career employment to retirement and beyond. In: Parry E, McCarthyJ, editor. The Palgrave

- Handbook of Age Diversity and Work. London: Palgrave MacMillan; 2017. p. 225-262.
- Phillipson C, Smith A. Extending working life: A review of the research literatura. Research Report No. 299. Leeds: Corporate Document Service; 2005.
- 37. Weyman A, Wainwright D, O'Hara R, Jones P, Buckingham A. Extending working life: Behaviour change interventions. Research Report No. 809. London: Department for wrk and Pensions; 2012 [cited 2019 Mar 22]. Available from: https://goo.gl/ujfRvm.
- 38. Alcover CM, Topa G, Fernández JJ. La gestión organizacional de los trabajadores mayores y los procesos de mantenimiento, prolongación y salida de la vida laboral. *Papeles del psicólogo*. 2014;35(2):91-8.
- Beehr T, Bennett M. Working after retirement: Features of bridge employment and research directions. Work, Aging and Retirement. 2015;1(1):112-28. http://doi.org/f45qvq.
- 40. Virtanen M, Oksanen T, Batty GD, Ala-Mursula L, Salo P, Elovainio M, et al. Extending employment beyond the pensionable age: a cohort study of the influence of chronic diseases, health risk factors, and working conditions. PLoS One. 2014;9(2):e88695. http://doi.org/c3sf.
- Tuomi K. Eleven-year follow-up of aging workers. Scand J Work Environ Health. 1997;23(1):1-71.
- Von Bonsdorff ME, Kokko K, Seitsamo J, Von Bonsdorff MB, Nygård C, Ilmarinen J, et al. Work strain in midlife and 28-year work ability trajectories. Scand J Work Environ Health. 2011;37(6):455-63. http://doi.org/bg929v.
- Tuomi K, Ilmarinen J, Jahkola A, Katajarinne L, Tulkki A. Work ability index. Helsinki: Institute of Occupational Health; 1994.
- 44. Poscia A, Moscato U, La Milia DI, Milovanovic S, Stojanovic J, Borghini A, et al. Workplace health promotion for older workers: a systematic literature review. BMC Health Serv Res. 2016;16(Suppl 5):329. http://doi.org/f9b98x.
- **45. Phillipson C.** 'Fuller' or 'extended' working lives? Critical perspectives on changing transitions from work to retirement. *Ageing & Society*. 2019;39(3):1-22.
- 46. OECD. Pensions at a Glance 2015. Paris: OECD Publishing 2015 [cited 2019 Mar 22]. Available from: https://goo.gl/m9xsQN.