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SUBJECTIVE AND OBJECTIVE HEALTH IN INDIGENOUS AND NON-INDIGENOUS OLDER PERSONS IN CHILE

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Abstract

The gradual increase in the population aged over 60 years in Chile has given rise to an increase in research activity focusing on this age segment. However, comparative studies among ethnic minorities are still insufficient. Life pathways in the specific case of the indigenous population tend to be less favourable; this results in an old age involving more social risk, particularly in the context of health. The purpose of the study is to analyse differences in health (subjective and objective) among indigenous and non-indigenous older persons in Chile. The methodology used in this study is quantitative and transversal, with a sample consisting of 800 elderly people and 71% of the sample describing themselves as indigenous (35% Aymara and 65% Mapuche). The most recurrent health problems were evaluated in old age, perceived health, use of medication (number) and average treatment, alcohol and drug consumption, and physical activity (exercise). The data were processed using standard statistical tests (Chi-Square). The findings and results of this study suggest that belonging to an indigenous ethnicity is related with differences in health. Specifically, the indigenous population showed more problems with cataracts and lungs and other health problems, in addition to presenting increased risk factors such as alcohol consumption. However, the results also indicate that the indigenous population engaged in more physical and sporting activities. In contrast, non-indigenous people reported more problems with high cholesterol, diabetes, osteoporosis and cancer, and had higher rates of smoking.

Keywords: Elderly, ethnicity, health; indigenous groups.

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1. Introduction

The aging process is constructed over a lifetime, and as such life pathways will determine how a person age. If life experiences have been positive, this may lead to good aging in functional, cognitive, psychological and social terms. Various biological approaches describe aging as "the accumulation of diverse deleterious changes occurring in cells and tissues with advancing age that are responsible for the increased risk of disease and death" (Tosato, Zamboni, Ferrini, & Cesari, 2007, p. 401). However, we may argue along the same lines in the social environment, in that a positive balance of life experiences, circumstances and pathways will mean that we reach old age with a reduced likelihood of psychosocial risk.

In this regard, health becomes a key factor in understanding the aging process. The term health refers to a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1983). This definition, which remains accepted today in scientific and political circles, entails incorporating the construct of overall wellbeing in order to understand health. In other words, good health is associated with a good life, with wellbeing and quality of life during the various life cycles and, particularly, during old age (Fernández-Mayoralas, Rojo-Pérez, Abellán, & Rodríguez-Rodríguez, 2003). In this respect, the empirical evidence confirms that good health at advanced ages is a determinant of successful aging (Cosco, Prina, Perales, Stephan, & Brayne, 2014) and particularly that enjoying high levels of cognitive, mental and physical functioning determines good aging (Kim & Park, 2017).

However, in addition to assessing health, there are contextual and cultural elements that play significant roles in understanding good aging processes. Specifically, we refer here to ethnicity – understood as "a term related to expressions of group identity and the feeling of belonging to a group" (Palenzuela & Olivi, 2011, p. 25). In the particular case of this study, we examine two ethnic issues: being of Mapuche or Aymara indigenous ethnicity and thus belonging to a specifically Andean cosmovision in the current situation of ethnic minority and, on the other hand, declaring oneself non-indigenous but Chilean, with a cosmovision that is also specific and more generalised. In international terms, the empirical evidence shows that belonging to ethnic minorities is associated with higher risk in old age. Specifically, that risk translates into worse health, more illnesses and even multiple comorbidities (Pace & Grenier, 2017).

1.1. Aging in Chile: an expanding process characterised by diversity

As stated, this study is limited to the specific cultural context of Chile and includes in its analysis two of the most populous indigenous ethnicities: the Mapuche and Aymara communities. Chile is one of the most aged countries in Latin America (United Nations, 2013). The population has gradually aged over recent decades, and current data indicates that 17.5% of the Chilean population is now aged over 60 years. Of this population, 9% are estimated to belong to an indigenous ethnicity, made up of 84% Mapuche, 7% Aymara, 4% Diaguita and the remaining 5% other peoples such as Atacama, Quechua, Qulla, Rapa Nui and Alacalufe (Ministry of Social Development, 2015). Though these data reflect a diverse older population, few studies address this differentiated analysis – distinguishing between indigenous and non-indigenous – in the understanding of the aging process. In general terms, the available evidence suggests the existence of potential situations of risk among the indigenous population, such as dependence in the

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areas of mental and communication skills (Mella, Alvear, Carrillo, & Caire, 2003), worse perception of quality of life related with health (Vargas, 2014), and increased prevalence of depressive symptoms, mainly among women (Gallardo-Peralta, Sánchez-Moreno, Barrón, & Astray, 2015).

This study was conducted with a sample of 800 older persons. We attempted to reflect the various ethnicities in our sample (Table 1) and even sought to over-represent the most significant indigenous communities in Chile. Another characteristic of the older population participating in this research was their residence in rural areas; attempts were made to include indigenous persons living in their native cultural contexts. In the north of Chile, the study was performed in the region of Arica and Parinacota, which has the highest concentration of Aymara people (26% of its population is indigenous). The rural zones contacted in the north are characterised by a large territorial spread that includes valleys and foothills and highlands. Many people live in communities with low population densities that are even at risk of depopulation, in addition to which the population is highly aged. In the south of Chile, the study was conducted in the region of La Araucanía. This region has the highest concentration of Mapuche people (31.7% of its population is indigenous) and the rural areas contacted are characterised by high levels of ethnic segregation. In other words, these are areas inhabited mainly and even exclusively by indigenous communities. There are diverse climates and geographical conditions, including coastal areas, valleys with agricultural crops, foothill areas and communities settled in the Andes.

Table 01. Participant characteristics

Variable	Categories	n (%)
Gender	Women	393 (49%)
	Men	407 (51%)
Age groups	60 – 69 years	341 (43%)
	70 – 79 years	311 (39%)
	80 + years	148 (18%)
Marital status	Married or cohabiting	434 (54%)
	Single	124 (15%)
	Widowed	190 (24%)
	Divorced, separated	52 (7%)
Education	Primary school incomplete	433 (54%)
	Primary school	245 (31%)
	High school or vocational education	108 (13%)
	Higher education	14 (2%)
Residence	North (region of Arica and Parinacota)	311 (39%)
	South (region of The Araucanía)	489 (61%)
Ethnicity	Indigenous: Aymara	201 (25%)
	Indigenous: Mapuche	368 (46%)
	Non-indigenous	231 (29%)

2. Problem Statement

As previously noted, there are few studies that examine the implications of ethnic diversity in the aging process. This research is intended to offer a contribution in terms of identifying possible differences in health between indigenous and non-indigenous older persons. The starting point is the premise that there

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is a duality regarding health in indigenous communities: on one hand, their more adverse life pathways have resulted in greater predisposition to suffer illnesses or health problems in old age, but on the other, indigenous cultural practices act as protective mechanisms against ill-health. This is especially true of their healthy habits, such as a more balanced diet and a more active, less sedentary lifestyle.

3. Research Questions

The research hypotheses of this study were as follows:

1. There are significant differences between indigenous and non-indigenous older persons in terms of subjective health.

2. There are significant differences between indigenous and non-indigenous older persons in terms of chronic illnesses.

3. There are significant differences between indigenous and non-indigenous older persons in terms of lifestyle.

4. Purpose of the Study

The purpose of the study was to analyse differences in health (subjective and objective) between indigenous and non-indigenous older persons in Chile. Specifically, self-assessments of physical health were evaluated as the subjective aspect, while the objective aspects evaluated were related with the most commonly occurring health problems, medical treatment for those problems, consumption of medication, frequency of alcohol consumption, frequency of smoking, and frequency of physical activity.

5. Research Methods

The study was quantitative, with a transversal design. A questionnaire was applied via personal interview, having first obtained the informed consent of participants. Spanish was the main language used for the scales. Qualified social work and psychology professionals administered the questionnaire between August and November 2017. The Ethics Committee of Tarapacá University and the National Council for Science and Technology of Chile approved and monitored the ethical aspects of the study. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

5.1. Instruments

Main health problems. *The Health Problems Questionnaire* (Herrera, Barros, & Fernández, 2007) was used. This is an instrument specifically designed to measure the most commonly occurring illnesses among the population of older adults in Chile, within the framework of the National Survey on Quality of Life in Old Age (Encuesta Nacional de Calidad de Vida en la Vejez). It comprises an inventory/checklist made up of 13 pathologies: high blood pressure or hypertension, arthritis/osteoarthritis, high cholesterol, diabetes or high sugar levels, cataracts, osteoporosis, heart attack or heart problems, chronic lung disease, stomach ulcer, asthma, hip or femoral fracture, cancer, stroke or vascular illness, and Parkinson's disease.

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Some questions taken from the health dimension of the Aging in Spain Longitudinal Study (Estudio Longitudinal Envejecer en España, ELES) were asked: subjective assessment of health, number of medications taken daily, frequency of alcohol consumption, frequency of smoking, and frequency of physical exercise.

6. Findings

The hypotheses proposed in this study were contrasted with the $\chi 2$ test. Hypothesis 1 ("there are significant differences between indigenous and non-indigenous older persons in terms of subjective health") was confirmed, as the results show that non-indigenous persons have a worse subjective perception of their health (15%) than indigenous persons (10%) ($\chi 2$=9.146; p=.05). In other words, the results show that subjective health is worse among non-indigenous persons.

Table 02. Chi-square analysis with respect to subjective health according to ethnicity

Variable		**Indigenous % (n)**	**Non-Indigenous % (n)**	X^2	**gl**	**p**
Subjective health	Very bad / bad	10%(56)	15%(35)	9.146	4	=.05
	Regular	53%(303)	48%(110)			
	Very good / good	37%(210)	37%(86)			

Hypothesis 2 ("there are significant differences between indigenous and non-indigenous older persons in terms of chronic illnesses") was also contrasted using the $\chi 2$ test. The results were analysed for each health problem. They show that non-indigenous persons have more problems with high cholesterol (25% non-indigenous v/s 16% indigenous), diabetes (26% non-indigenous v/s 19% indigenous), osteoporosis (7% non-indigenous v/s 2% indigenous) and a higher prevalence of cancer (3% non-indigenous v/s 1% indigenous). In contrast, indigenous older persons have more problems with cataracts (14% indigenous v/s 7% non-indigenous) and other health problems (12% indigenous v/s 4% non-indigenous). Included among these other problems are pain from spinal issues, knees, hearing, hernias and so on.Please replace this text with context of your paper.

Table 03. Chi-square analysis with respect to subjective health and the most frequent diseases in old age according to ethnicity

Variables		**Non-Indigenous %(n)**	**Indigenous %(n)**	X^2	**gl**	**p**
High blood pressure or hypertension	Yes	52%(120)	50%(284)	.272	1	.60
	No	48%(111)	50%(285)			
High cholesterol	Yes	25%(141)	16%(36)	8.064	1	<.01
	No	75%(428)	84%(195)			
Arthritis, osteoarthritis, rheumatism	Yes	22% (51)	22%(124)	.008	1	.93
	No	78%(180)	78%(445)			
Diabetes, high sugar	Yes	26%(59)	19%(106)	4.795	1	<.05
	No	74%(172)	81%(463)			

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Osteoporosis	Yes	7%(16)	2%(10)	13.961	1	<.001
	No	93%(215)	98%(559)			
Heart problems, heart attack	Yes	5%(11)	5%(26)	.014	1	.90
	No	95%(220)	95%(543)			
Cataracts	Yes	7%(17)	14%(78)	6.329	1	<.01
	No	93%(214)	86%(491)			
Chronic lung disease (chronic bronchitis, asthma, etc.)	Yes	3%(8)	7%(37)	2.859	1	.09
	No	97%(223)	93%(532)			
Stomach or duodenal ulcer, peptic ulcer	Yes	3%(6)	5%(27)	1.916	1	.16
	No	97%(225)	95%(542)			
Hip or femoral fracture	Yes	3%(6)	3%(17)	.090	1	.76
	No	97%(225)	97%(552)			
Cancer or malignant tumour	Yes	3%(6)	1%(5)	3.579	1	=.05
	No	97%(225)	99%(564)			
Another health problem	Yes	4%(10)	12%(69)	11.224	1	<.001
	No	96%(221)	88%(500)			
Receiving on-going medical treatment for this disease	Yes	60%(139)	65%(370)	1.672	1	.19
	No	40%(92)	35%(199)			

Finally, hypothesis 3 ("there are significant differences between indigenous and non-indigenous older persons in terms of lifestyle") was also contrasted using the $\chi 2$ test. The results in this respect show that non-indigenous persons smoke more (35% non-indigenous v/s 24% indigenous). However, indigenous persons consume more alcohol (24% indigenous v/s 15% non-indigenous) and engage in more physical activity (36% indigenous v/s 7% non-indigenous).

Table 04. Chi-square analysis with respect to lifestyle and ethnicity

Variable		**Indigenous %(n)**	**Non-Indigenous %(n)**	X^2	**gl**	**p**
Number of medications taken per day				3.572	3	.31
	0	31%(72)	35%(201)			
	1-2	33%(77)	34%(196)			
	3-5	27%(63)	21%(121)			
	6 and more	9%(19)	10%(51)			
Frequency with which you consume alcohol	Never	57%(323)	76%(175)	28.421	4	<.001
	1 or 2 times a month	24%(138)	15%(34)			
	3 or 4 times a month	15%(86)	6%(13)			
	Several times a week	4%(22)	3%(9)			
Do you currently smoke?	Do not smoke and have never smoked regularly	73%(416)	51%(118)	57.608	3	<.001
	Do not smoke currently, but have smoked before	24%(136)	35%(81)			
	Yes	3%(17)	14%(31)			

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Do you do physical exercise? (gymnastics, sports, etc.)	No	46%(259)	76%(175)	77.973	4	<.001
	Infrequently	12%(68)	12%(27)			
	Once a week	6%(36)	5%(12)			
	Several times a week	36%(206)	7%(17)			

7. Conclusion

As suggested above, life pathways impact on the aging process. Among the indigenous communities studied, there are various protective cultural factors that have an influence in terms of improving subjective and objective health. As we have seen, Mapuche and Aymara indigenous older persons have a better subjective perception of their health, have fewer health problems and maintain healthy habits such as smoking less frequently and regularly doing physical exercise.

In this study, we propose that indigenous cultural resources in Chile act as protective mechanisms for physical health in old age. Specifically, we should take into account that the rural residential context may be having a positive impact in terms of the maintenance of certain indigenous practices that promote physical health, such as healthy and natural diet and engaging in regular physical exercise. As we proposed, diet is healthy and natural in rural areas in the north and south of Chile since indigenous communities are responsible for their own agriculture (family economy) and also for tasks relating to the care of animals. The geographical differences between the north (desert and highlands) and south (rainforests) determine diversity as regards type of diet. As such, the Aymara community bases its diet around quinoa, chuño (freeze-dried potato), beans, sweetcorn and various kinds of legumes, alongside proteins such as camelid meat (alpaca and llama). Meanwhile, the Mapuche community has a diet involving the consumption of various vegetables including in particular potatoes, sweetcorn, pine nuts (fruit from the Norfolk Island pine tree), squash, various legumes and yuyo (seaweed), together with high levels of consumption of milk and its derivatives (butter and cheeses) and meat from game birds and cattle. The essence of this traditional indigenous food is far removed from an industrial diet; it is also low in sugar, which explains the low incidence of diabetes and cholesterol. However, alcohol consumption is linked to cultural traditions that are exacerbated by religious ceremonies, making it a practice that is difficult to eradicate.

Another cultural aspect that explains the results obtained is the maintenance of an active lifestyle, which emerges from carrying out domestic activities involving considerable physical activity and is supplemented by a higher frequency of sporting activities among indigenous older persons. The aforementioned domestic activities of indigenous communities include shepherding of animals (Aymara) and sheep shearing (Mapuche). It would appear that the cosmovision among these communities involves an expectation that even when older, persons should remain physically active.

These findings invite further examination of the impact of indigenous cultural practices, life pathways and historical processes in the promotion of successful aging. As affirmed by Pace and Grenier (2017) “in the case pf indigenous people, successful aging takes place at the intersection of individual, social, and cultural contexts across the life course, and against particular historical, economic, and political backdrops” (p. 205). But it is also necessary to open up a space for understanding from the perspective of the indigenous cosmovision of the elements that impact on aging successfully and maintaining wellbeing; in other words, to recover the particular nature of their discourse.

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