

PERCEPTION OF THE BODY IMAGE OF THE CHILEAN POPULATION IN A PANDEMIC SITUATION

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Correspondence: Roberto Lagos-Hernández, [roberto.lagos@uautonoma.cl](mailto:roberto.lagos@uautonoma.cl)

Lavalle-Mellado, P.<sup>1FBC</sup>; Gedda-Muñoz, R.<sup>2ACD</sup>; Lagos-Hernández, R.<sup>3ACF</sup>

<sup>1</sup> Lavalle-Mellado, P. Autonomous University of Chile, Chile,  
[lavalle.mellado@gmail.com](mailto:lavalle.mellado@gmail.com)

<sup>2</sup> Gedda-Muñoz, R. Autonomous University of Chile, Chile,  
[relmu.gedda@uautonoma.cl](mailto:relmu.gedda@uautonoma.cl)

<sup>3</sup> Lagos-Hernández, R. Autonomous University of Chile, Chile,  
[roberto.lagos@uautonoma.cl](mailto:roberto.lagos@uautonoma.cl)

Responsibilities:

<sup>A</sup>Research design. <sup>B</sup>Data collector. <sup>C</sup>Paper writer. <sup>D</sup>Statistical processing. <sup>E</sup>Financial support. <sup>F</sup>Original idea and coordinator of the whole research.



ABSTRACT

The objective of this research was to associate and correlate the time of confinement and physical activity (PA) with body image (BI) of Chilean population in pandemic. The study was quantitative descriptive, correlational and 1,038 people participated, of which 426 were men, 609 women and 3 people did not express gender. A self-administered survey was used to collect general data and the Body Shape Questionnaire (BSQ) was used to study the levels of concern about HF. It was found that the level of confinement and time of confinement did not correlate with the level of the BSQ scale. The level of confinement does correlate with the sum of the BSQ scale, with low statistical strength. The days of the week and PA time do correlate ( $p < 0.01$ ) with the level and sum of the BSQ scale. It is concluded that there is a correlation between the weekly PA time and the BSQ level; those who were more concerned about their BI have low levels of PA and those who have a higher level of PA do not have high levels of concern about their HF.



## KEY WORDS

pandemic, body image, confinement, covid-19, quarantine.



## INTRODUCTION

The present research emerges in a context of global complexity that, as never before, has produced a forced halt to many social activities, which has led to the international implementation of quarantines, confinements and cessation of mobility as a strategy to deal with this pandemic situation which, despite its impact, has not managed to control the spread of this pathological situation<sup>1</sup>. Events began in China, towards the end of December 2019, with a violent spread of what was called Covid-19<sup>2</sup>, a highly contagious virus that affects respiratory structures and has a high degree of health impact. Transmission of this virus occurs through person-to-person contact and has a significant impact on mortality and morbidity<sup>3</sup>. Due to its rapid advance, health authorities implemented control measures<sup>4</sup>, and in order to reduce its spread, massive quarantines were initiated in all continents, a situation that affected a large part of the population<sup>5</sup>, including the Chilean population<sup>6</sup>. Chilean population<sup>6</sup>. Researchers are currently continuing studies for the development and application of mass vaccines<sup>7</sup> and the emergency use of several of them<sup>8</sup> has been authorised, with favourable results<sup>9</sup>. This whole situation has generated relevant psychological repercussions in people<sup>10</sup>, and it is predicted that in the long term, other manifestations will emerge that are currently not foreseeable<sup>11</sup>, however, during the development of the present study, it has already become evident that the massive confinement of people results in the manifestation of insomnia and other alterations<sup>12</sup>, with changes in mood, anxiety, nervousness, sadness and depression<sup>13 14</sup>, and it has been observed that one of these conditions also includes alterations in body image (BI)<sup>15</sup>, a broad mental representation of body shape, form and size that is additionally influenced by environmental, historical, cultural, social, individual and biological factors that vary over time<sup>16</sup> and which, as has been observed, has also shown particular sensitivity during the pandemic<sup>17</sup>. The CI of a person in confinement is altered as a result of changes in daily life routines<sup>18</sup>, these impacts are associated with a reduction in freely available activities, leading to increased concerns about weight and body shape and also negatively affecting diet, exercise, sleep patterns<sup>19</sup> and quality of life<sup>20</sup>, as time spent in confinement without the possibility of outdoor activities, This last situation also affects adolescents in particular, as this type of behaviour is linked to physical

inactivity, a situation that is considered a risk factor because it is related to strokes, diabetes and cancer<sup>21</sup>. Research also shows that a significant percentage of women have experienced changes in eating behaviour, with an increase in risks related to eating disorders<sup>17</sup>.

Taking into consideration the background information presented, the present study aims to associate and correlate time spent in confinement and physical activity with HF in the Chilean population as a result of Covid-19.



## MATERIALS Y METHODS

Research using a descriptive, correlational, quantitative method. A self-administered survey with two dimensions was applied: General complementary data and the Body Shape Questionnaire (BSQ)<sup>22 23</sup>. This study obtained a high level of test reliability (0.967) measured by Cronbach's alpha. The survey was carried out between 7 and 24 October 2020 through Googleforms<sup>©</sup> and was socialised through social networks allowing the application of snowball methodology. The total participation was 1,038 participants who authorised the use of the data for this enquiry.

The data obtained were systematised using Microsoft Excel<sup>©</sup> and analysed using the IBM SPSS 25.0<sup>©</sup> statistical package, both for descriptive statistics and correlational and association statistics. The Kolmogorov-Smirnov normality test, Spearman's correlation test, Mann-Whitney U test for mean difference and Pearson's Chi-square test for the association of the study variables were performed.

The present work was authorised by a postgraduate committee and considered the deontological precepts of the Helsinki declaration <sup>24</sup>.



## RESULTS

The instrument was applied to 1,038 people from the Chilean population, 426 men, 609 women and 3 people who did not express gender. Considering age, the data were subjected to Kolmogorov-Smirnov test, obtaining a value of  $p < .001$ , therefore the data showed non-normal distribution. There was participation from all regions of the country, with the largest number of respondents coming from urban areas with a total of 911 (87.8%), while 122 people (11.8%) responded from rural areas, and 5 (0.5%) of them omitted to answer.

In terms of age range, the standard deviation was 11.64, the ages of the participants ranged from 12 to 79 years old, mean 32.01. The sample was characterised as follows: children 4 (0.4%), young people 516 (49%), and young people 516 (49%). %, young people 516 (49.7%), adults 484 (46.6%), older adults 28 (2.7%) and 6 who did not state their age (0.6%)<sup>25</sup>. Regarding the occupation of the participants, they identify themselves as: employee, self-employed, professional technician/micro-entrepreneur/entrepreneur 533 persons (51.3%), student 277 persons (26.7%); work and study 124 persons (11.9%) and housewife 30 persons (2.9%). Regarding their body weight since the beginning of the confinement, 658 (63.4 %) persons indicate that they have gained weight, while 375 persons indicate that they have not gained weight (36.1 %).

**Table 1. Level and length of time in confinement.**

Variable Confinement	Response category in relation to level of confinement	Percentage
Level of confinement (n=1038)	None, I have always carried on with my normal life	1,0
	I go on with my daily life (work, meetings, shopping), but I take precautionary measures.	27,7
	I go out to work taking into account the recommended protective measures and limit other outings.	27,3
	Quite isolated, I only go out for food and limit contact with other people.	43,1
	Total isolation, no one goes out and home deliveries are made.	0,7
	No answer	0,3
Level of confinement categorised (n=1035)	Minor confinement	56,1
	Strict confinement	43,9
Confinement time (n=1038)	15 days	7,6
	1-2 months	3,8
	3-4 months	10,0
	5-6 months	34,2
	7-8 months	40,9
	No answer	3,5
Categorised confinement time (n=1002)	Up to four months	22,2
	More than four months	77,8

Source: Own elaboration with data from the research. Time measured in days, weeks or months depending on the case.

In relation to confinement, of the 1038 people, 43.1% reported that their level of isolation was total, limiting their outings exclusively for the purpose of buying food. On the other hand, 27.3% had to continue working normally. It can be inferred that 56.1% of the population was in minor confinement. In terms of the length of time spent in confinement, 40.9% reported having spent between 7 and 8 months without going out of their homes. It is also noted that 77.8% were confined for more than four months. Of the total population surveyed, 70.7% of them were physically active before

confinement; however, a drop was observed during the period of confinement to only 64.7%. In relation to those who did not practice physical activity before confinement, 28.5% were in this condition, however this data has varied minimally with 6.6%.

**Table 2. Time and frequency of physical activity according to what was done during the period of confinement.**

Variable Physical activity	Response category	Percentage
Weekly physical activity days (n=1038)	No physical activity	23,3
	1-2 days	31,6
	3-4 days	30,5
	5 or more days	12,9
	No response	1,6
Weekly physical activity days– cate- gorised (n=1021)	Less than 2 days	55,8
	More than 2 days	44,2
Daily physical activity time (n=1038)	0 hours	3,6
	15-30 minutes	20,0
	30 min-1 hour	36,6
	1-2 hours	19,9
	2-3 hours	3,1
	3 or more hours	1,7
	No physical activity	13,6
	No response	1,4
Daily physical activity time - cate- gorised (n=1023)	One hour or less	74,9
	More than one hour	25,1

Source: Own elaboration with data from the research. Frequency of physical activity measured in hours and days per week as appropriate.

Regarding physical activity, of the 1,038 respondents, 23.3% of them do not engage in physical activity, but it was observed that 44.2% of them do more than 2 days of physical activity per week.

On the other hand, regarding the time of daily physical activity, it was found that 36.6% of the respondents were physically active for at least 30 minutes to 1 hour, but only 4.8% were physically active for between 2 and 3 hours a day.

**Table 3. Classification by BSQ categories.**

	No concerns	Slight concern	Moderate concern	Extreme concern	Total
Body Shape Questionnaire Rating- (BSQ) (n=1038)	50,0	28,5	13,6	7,9	100
	Min.	Max	Mean	Median	SD
Score (summative) Total BSQ (n=1038)	34,0	199	85,7	80,5	33,9

Source: Own elaboration with data from the research.

Regarding the classification of the BSQ, 7.9% of the total respondents were extremely worried about their CI, 13.6% were moderately worried, 28.5% were slightly worried, and 50.0% were not worried at all. As for the BSQ scores, the minimum score was 34, the maximum 199 with a mean of 85.7, a median of 80.5 and a standard deviation of 33.9 points.

With the results of the BSQ, distribution tests were carried out, showing a non-normal distribution, therefore non-parametric tests were carried out. The variables of level of confinement and time of confinement do not correlate with the level of the BSQ Scale, however the level of confinement does correlate with a p value  $< 0.05$ , with the sum of the BSQ scale, although the r value indicates low statistical strength. On the other hand, the days of the week and the time spent in physical activity do show a statistically significant correlation (p-value  $< 0.01$ ) with both the level of the BSQ Scale and the sum of the BSQ.

The mean difference test shows that the level of confinement demonstrates a statistically significant mean difference with a p-value  $< 0.05$ , between the group of people in moderate and strict confinement, in terms of their total score on the BSQ. For its part, the time of confinement does not allow us to find statistically significant differences in means. With regard to the days per week and daily time spent in physical activity, it is evident that the groups of physically active people have statistically significant mean differences (p value  $< 0.01$ ) with respect to those who are less physically active, according to their scores on the BSQ.

For tests of association, Pearson's Chi-square was used: Confinement time - physical activity - BSQS. The association of the study variables shows that there is no statistically significant association between the level and time of confinement and the BSQ scale. On the other hand, days per week and daily time of physical activity do show an association (p-value  $< 0.05$ ) with respect to the BSQ Scale, although the Cramer's V statistic is close to 100, indicating a mild association.

## DISCUSSION

It was established that those who have been more strictly confined had higher scores on the BSQ, which is indicative of greater concern about their HF26 and that due to the complex conditions experienced in recent months, these aspects may be linked to

exposure to a longer period of stress and uncertainty about the pandemic, which may reduce their concerns about self-care, healthy eating, sleep habits and physical activity<sup>27</sup>. Stress and anxiety caused by the Covid-19 pandemic pose a serious threat to the psychological well-being of populations worldwide and may also extend to HF outcomes, as noted in Swami, Horne, & Furnham's<sup>28</sup> study of adults aged 18-73 years in the UK, who sought to see the association between Covid-19-related stress and anxiety and whether they are specifically associated with HF outcomes, suggesting that the pandemic may shape HF outcomes in conditions of physical and social detachment. Compulsory confinement has affected lifestyles and daily activity, a situation that may condition health, whether through the work people do, the characteristics of their nutrition, their social life, among other activities. Eating disorders in times of pandemic are the most frequent, due to psychological implications such as anxiety, depression, stress and lack of sleep<sup>29</sup>, these emotional changes are associated with a greater energy intake and the situation of uncertainty and increased physical inactivity<sup>30</sup> and modification of habits; when the individual adapts to the reality of the body, there is an interest in returning to healthy habits and resuming a physically active life<sup>31</sup>.

Regarding physical activity during confinement, the results show that people who are less physically active have a higher score on the BSQ, which represents a greater concern for their HF, it is likely that prolonged stay at home may lead to an increase in sedentary behaviours, therefore, lower energy expenditure and avoidance activities<sup>32</sup> which may be associated with mortality and severity risks in patients with Covid-19<sup>33</sup>. The participants in this study have suffered an alteration in their daily routine and as a consequence, psychological and behavioural alterations have been triggered, noting that experiencing a period of strict and prolonged confinement generates negative impacts and would produce problems with respect to the perception of HF<sup>34</sup>. Other studies show that when individuals already do some exercise, body dissatisfaction is an external motivator for commitment and adherence to this type of practice<sup>35</sup>. It is finally deduced that isolation affects HF and could favour sedentary behaviour, reduce regular physical activity and thus increase the risk of developing diseases or worsen previous pathologies, mainly in children and older adults<sup>36</sup>.



## CONCLUSIONS

In terms of the conclusions of this study, it can be noted that CI is a complex variable to study due to the multiple implications related to its perception. The evidence reflects a set of associations related to health, therefore its study is revealing and necessary. The background of this study shows that in terms of concern about HF, 2 out of 10 people report moderate to extreme concern, a condition that could be accentuated by the pandemic situation. There is a correlation between weekly physical activity time and BSQ level: those who are more concerned about their HF have low levels of physical activity, while those who have a higher level of physical activity do not have high levels of concern about their HF. As for the association between days per week of physical activity and its relationship with BSQ level, there is a slight association.

It can also be affirmed that this study coincides with other studies regarding the high levels of physical inactivity in Chile, a situation that has been accentuated as a result of the pandemic and which is also reflected in the fact that most of the participants in the study reported having gained weight. It can also be established that extensive confinement has had an impact on concern about HF, which means that excessive confinement has a negative impact on the perception of HF. This situation, which has been related to an increase in sedentary behaviours, associated with the uncertainty of the pandemic, could lead to a greater risk of morbidity, particularly in people affected by Covid-19, a pathology that has had a major impact on the Chilean population and continues to be a threat to health from a psychological and physical perspective. Contributing negatively in increasing unfavourable habits that trigger an exaggerated preoccupation with the image of one's own body.

From the point of view of the scientific contribution of this research, it is considered necessary and novel to associate body image with the recent phenomenon of confinement as a result of the Covid-19 pandemic, and at the same time, the relevance of incorporating the time variable on this confinement, highlights the importance of identifying whether the longer the time of confinement the CI is altered, with all the effects that have been thoroughly studied and that affect human health, particularly in a country like Chile, with world records of obesity and sedentary lifestyles. In addition, it is considered important to leave evidence of how the adaptation of the population to forced situations influences it. Prolonged confinement has generated effects that should be studied in the medium and long term, as scientific evidence has

shown that issues related to body weight and dietary alterations have a negative impact on people's quality of life, and therefore, showing how CI permeates human behaviour in a pandemic situation makes it clear that regardless of conditions of social isolation, its effects should be monitored in the long term, and for this purpose, historical records of the facts should be kept. It is also important to promote the socialisation of experiences that favour the practice of physical exercise in these conditions of isolation.



## LIMITATIONS AND FUTURE PATHS

The lack of in-depth study of variables related to gender, age stratification and region of origin, aspects that will be addressed in another research project in the near future, are considered as limitations. It is suggested that both teachers and specialists in physical activity should visualise not only aspects linked to people's organic capacities when resuming physical activity or training programmes in the post-pandemic period, but also study the psychological aspects that may eventually affect people's performance, including those related to their CI. The authors declare that this work did not receive funding and declare that they have no conflicts of interest in the research presented.



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