

ORIGINAL

Anthropometric measurements of male and female workers in bipedestation in the Venezuelan industrial direct labor force

Mediciones antropométricas de trabajadores y trabajadoras en bipedestación de mano de obra directa industrial venezolana

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ABSTRACT

Introduction: in the Venezuelan labor context, there is scarce information associated with anthropometric measurements, due to the existing gaps in the field of ergonomics in Latin America and the Caribbean, of which there are few professionals trained in ergonomics. In this sense, it has affected the proper achievement of anthropometric studies that allow an adequate follow-up in the population in general and more specifically in the labor world. General objective: to measure and determine the anthropometric variables in standing position of Venezuelan workers in order to obtain more results in the field of occupational health.

Methods: a quantitative, descriptive, cross-sectional, epidemiological and field study was carried out in a Venezuelan population of industrial direct labor workers in standing. The sample consisted of 185 workers (M:131, W:54) in the main industrial areas of the state of Aragua-Venezuela. The measuring instruments used in the investigation were: anthropometric tables for standing measurements, flexible tape measure for perimeter measurements and a wall height meter with a scale for weight measurements. The minitab-17 statistical package was used for the analysis and statistical study.

Results: the study group consisted of 185 workers with an age range between 20-59 years; 131 men (70,8 %) and 54 women (29,2 %). The people evaluated had an average age of 43 years, their height x: 170,08 m, they are workers with 10 to 15 years of work experience, with wear and tear and possible pre-existing diseases, likewise, the female workers have an age x: 40,33 years and their height x: 156,27 cm, as well as the male worker have an average work experience between 10 and 15 years and possible pre-existing diseases.

Conclusion: the study provides an approximation of anthropometric measurements in standing position of Venezuelan industrial direct labor workers (MODIV), which will allow the adaptation of workstations.

Keywords: Measurements; Anthropometry; Standing Position; Worker; Workforce.

RESUMEN

Introducción: en el contexto laboral venezolano, existe escasa información asociada con las mediciones antropométricas, debido a las brechas existentes en el campo de la ergonomía en Latinoamérica, y el Caribe, del cual se tienen pocos profesionales formados en ergonomía Por tal sentido, ha afectado la debida consecución de estudios antropométricos que permitan un adecuado seguimiento en la población en general y más específicamente en el mundo laboral.

Objetivo: medir y determinar las variables antropométricas en bipedestación de los trabajadores venezolanos que permitan obtener más resultados en el campo de la salud laboral.

Métodos: se hizo un estudio cuantitativo, descriptivo, transversal, epidemiológico y de campo en una población venezolana de trabajadores de mano de obra directa industrial en bipedestación. La muestra fue

de 185 trabajadores (H:131, M:54) en las principales zonas industriales del estado Aragua-Venezuela. Los instrumentos de medicación usados en la investigación fueron: Tablas antropométricas para las mediciones en bipedestación, cinta métrica flexible para las mediciones de los perímetros y el tallmetro de pared con báscula para el peso. Para el análisis y estudio estadístico se usó el paquete estadístico minitab-17.

Resultados: el grupo de estudio estuvo conformado por 185 trabajadores con rango etario entre 20-59 años; 131 hombres (70,8 %) y 54 mujeres (29,2 %) Las personas evaluadas tenían una edad promedio de 43 años, su altura x :170, 08 m, son trabajadores que en tienen de 10 a 15 años de experiencia en el trabajo, con desgaste y posibles enfermedades preexistentes, de igual forma, las trabajadoras tienen una edad x: 40,33 años y su altura x:156,27 cm, al igual que el trabajador tienen experiencia laboral promedio entre 10 y 15 años posibles enfermedades preexistentes.

Conclusiones: el estudio aporta una aproximación de mediciones antropométricas en bipedestación de los trabajadores de mano de obra directa industrial venezolana (MODIV), que permitirá adecuar los puestos de trabajo.

Palabras claves: Mediciones; Antropometría; Posición de Pie; Trabajador; Mano de Obra.

INTRODUCTION

Anthropometry plays a fundamental role in public health since it supports anthropometric measurements in the general population. Likewise, anthropometry allows to recognize an adequate nutritional evaluation, to make clinical decisions in individuals and populations with the objective of carrying out nutritional policies in Public Health.⁽¹⁾ On the other hand, it allows the design and manufacture of articles and furniture adapted to the needs of the population.

In the specific case of occupational health, it takes into consideration anthropometric data for the design of the workplace and personal protective equipment, which are vital to ensure health, occupational safety and productivity in the work environment.⁽²⁾ That is, these measures are required for the design of workplaces to achieve greater harmony between the worker and his or her workplace. However, there are few studies in Latin America pars, particularly in Venezuela, related to anthropometric measurements.⁽³⁾

From the ontological assumptions, this situation can be explained by the existing gaps in the field of ergonomics in Latin America and the Caribbean. In that sense, in the countries of the region there are few professionals trained in ergonomics. The predominance of studies has been focused on physical ergonomics to provide answers mainly to musculoskeletal occupational diseases. Research has lagged in academic environments and has had no impact on the industrial sectors, adopting theoretical models of this discipline developed in other countries without knowing if they are applicable in the Latin American region.⁽³⁾

In the specific case of Venezuela, there are no specific training programs in ergonomics, only Master and Specialty training programs in Occupational Health that have incorporated subjects that address ergonomics.⁽⁴⁾ In this sense, it has affected the proper achievement of anthropometric studies that allow adequate monitoring in the general population and, more specifically, in the world of work.

Of the studies that currently existed within the Venezuelan labour context in the last 10 years, we can name the following: Sample Design (Methodological Proposal) of the Venezuelan Labor Population for Ergonomic Applications,⁽⁵⁾ Pilot studies to generate a methodology to validate and collect anthropometric data for ergonomic purposes,⁽⁶⁾ Prediction of Anthropometric Dimensions and Aerobic Capacity in Venezuelan Industrial Direct Labor Workers ⁽⁷⁾ and finally Prediction of Anthropometric Dimensions in Standing and Physical Fitness in Venezuelan Industrial Direct Labor Workers (MODIV).⁽²⁾

These studies are the ones that currently have been done in the country and constitute an epistemic basis in the development of a line of research that aims to advance ergonomics in Venezuela in the world of work.

Taking into account the previous assumption, the objective of the present research is to measure and determine the anthropometric variables in the standing position of Venezuelan workers, which will allow obtaining more results in the field of occupational health in order to make an approach that will allow expanding the ergonomic studies in the Venezuelan labour world.

METHODS

A quantitative, descriptive, cross-sectional, epidemiological and field study was carried out in a Venezuelan population of industrial direct labor workers in bipedestation. The accessible or sampled population is made up of the finite portion of the target population that has been accessed or constitutes the accessible population. In this case, the most accessible and homogeneous population is located in the Central Region of Venezuela, according to the gene frequency and percentage of admixture.⁽⁸⁾

Taking into account the previous assumption, the availability of time and resources of the researchers was

taken into account.⁽⁹⁾ In this sense, the industrial companies of the Aragua state, located in the Central Region of Venezuela, were investigated as a population base for the due survey and application of the population sample. The sample was of 185 workers (H:131, M:54) in the main industrial zones of the state of Aragua-Venezuela, taking as reference the work Prediction of Anthropometric Dimensions in Bipedestation and Physical Aptitude in Venezuelan Industrial Direct Labor Workers.⁽¹⁰⁾

The sampling of this research was of a simple random probabilistic type and stratified by age and sex⁽¹⁰⁾; likewise, the samples were taken in the occupational medical services of the industrial companies in the state of Aragua, following the guidelines for health examinations, as ordered in the Partial Regulation of the LOPCYMAT, Article 27.⁽¹¹⁾

The inclusion and exclusion criteria referred to industrial direct labour workers were taken into account. The informed consent of the participant or collaborator was taken as a reference to the letter of the Ministry of Health, General Hospital "Dr. Manuel Gea González", together with the Declaration of Helsinki of the World Medical Association - Ethical Principles for Medical Research Involving Human Subjects. Once the informed consent document had been read, the subjects who agreed to participate voluntarily allowed themselves to be measured and collaborated in the research on anthropometric measurements in Venezuelan workers.^(12,13)

The medication instruments used in the research were Anthropometric tables, designed by Morgan, Cook, Chapanis, and Lunk⁽¹⁴⁾, which are based on two wooden sheets approximately 2 meters high by 80 cm wide, which are joined by an axis each sheet is laminated with a gridded sheet, where each square measures 0,5 cm. It is used for measurements of the person in a seated, standing or standing position. Flexible tape measure for perimeter measurements and wall height meter with scale for weight. Brand: Cardinal, Model; Detecto 339. Max: 175 K. Min: 2 K.

Within this research, reference is made to the methodology used to validate the procedures of the anthropometric measurements that allowed measuring the qualities of reliability (R), repeatability (r), and reproducibility, which are responsible for monitoring the measurement errors of the anthropometric tables, used in the study of Prediction of Anthropometric Dimensions in Bipedestation and Physical Aptitude in Venezuelan Industrial Direct Labor Workers⁽²⁾ and Comparative pilot study of anthropometric measurements in bipedestation between Anthropometric Tables and a Harpenden Anthropometer.⁽¹⁵⁾

The methodology to carry out the anthropometric measurements was previously indicated according to the guidelines of the International Standards for Anthropometric Assessment manual.⁽¹⁶⁾ likewise, the measurements were taken from the right side of the body for all distances except for the height, which was taken from the middle axis or reference point (vertex). On the other hand, the standing anthropometric variables taken in the study are referenced according to Anthropometric variables in standing in a population of male and female workers in Latin America: a systematic search.⁽¹⁷⁾

RESULTS

Table 1. Categorization of the anthropometric variables in standing position in Venezuelan workers

Variables (cm)	Men n=131 Age: 43,78± 11,86				Women n= 54 Age: 40,33 ± 11,26			
	Media	P ₅	P ₅₀	P ₉₅	Media	P ₅	P ₅₀	P ₉₅
Height-height	170,08	159	170	182	156,27	147,125	156	167
Height at Orbital (Eye)	152,5	144,7	158	171	141,33	133	143,75	153,25
Height at the Acromiale (shoulder)	142,45	132,5	142	153,2	130	121,75	129,25	140,5
Elbow height	107,77	99,8	107	116	99,76	91,9	98,25	108,125
Iliac spine height	95,82	87	97	106	90,46	83	91	97
Wrist height	81,73	75	81	90	75,64	69,75	75,75	82,62
Height at the Dactylion	65,05	59	65	73	59,90	54,375	60	67
Arm length	75,20	56	76	84	66,3	49,575	67	75,25
Forearm-hand length	47,23	43,18	47	52	43,23	37	43	50,25
Fist length	73,21	61,2	74	81,2	67,25	54,625	68	75,87
Head circumference	56,52	53,5	57	60	54,91	51,75	55	57,875
Weight-mass Kg	78,48	55,6	76,2	106,96	68	48,1	66,4	98,125

Source: statistical package minitab 17; P₅, P₅₀; P₉₅: Percentiles: 5,50 ,95

The study group consisted of 185 workers with an average age between 20-59 years; 131 men (70,8 %) and 54 women (29,2 %). Once the protocols for the measurements of the workers were taken according to the guidelines of the International Standards for Anthropometric Assessment manual⁽¹⁶⁾, the data were analyzed using the Minitab-17 statistical package, as shown in table 1.

Within the group of measurements made, we can take some of the most relevant ones by age groups that tell us how it evolves in Venezuelan workers, starting with the youngest age group (20-29 years), tables 2 - 3 and (50-59 years), since the latter is the one with the most significant number of the population studied, which are shown in tables 4 and 5.

Table 2. Descriptive measures of the variables, by ethereal group and sex. Men: n=14

Age: 20-29 years old: average: 22,77± 4,04

Variable (cm)	Media	Std. Dev.	Max	Min	P ₅	P ₅₀	P ₉₅
Height-height	174,77	6,05	184	162	162	177	184
Orbital height (eye)	161,95	5,64	169	150	150	162,4	169
Height at the Acromiale (Shoulder)	145,38	5,96	158	134	134	146	158
Elbow height	110,35	4,44	120	104	104	111	120
Iliac spine height	101,50	4,43	107	93	93	104	107
Dactylion height	66,7	3,004	73	63	63	67	73
Length of arms	76,85	5,32	84	66	66	79	84
Wrist height	83,50	4,37	91	73,5	73,5	84	91
Fist length	73,54	4,65	81	66	66	73,5	81
Forearm-hand length	49	3,44	59	45	45	48	59
Head circumference	56,15	1,54	58	54	54	56,5	58
Weight-mass. Kg.	70,48	15,28	108,40	42,60	42,6	69,4	108,4

Minitab-1 calculations

Table 3. Descriptive measures of the variables, by ethereal group and sex. Women n=10

Age: 20-29 years: average: 22,8±3,94

Variable (cm)	Media	Std. Dev.	Max	Min	P ₅	P ₅₀	P ₉₅
Height-height	160	5,91	167	149	149	162	167
Orbital height (eye)	147,10	5,62	154	137,5	137,5	147,5	154
Height at the Acromiale (Shoulder)	132,10	5,25	140	123,5	123,5	132	140
Elbow height	101,25	4,47	108	92	92	101,5	108
Iliac spine height	93,35	3,28	97,00	86,5	86,5	94,5	97,0
Height at the Dactylion	61,40	3,78	68	55	55	60,5	68

Minitab-17 calculations

Table 3. Descriptive measures of the variables, by ethereal group and sex. Females n=10

Variable (cm)	Media	Std. Dev.	Max	Min	P ₅	P ₅₀	P ₉₅
Arm length	69,5	4,31	79	63	63	69,5	79
Wrist height	77,2	3,039	82	72	72	77,5	82
Cuff length	66,95	3,28	71	61,5	61,5	67	71
Forearm-hand length	43,85	1,886	46	40	40	44	46
Head circumference	55,4	1,838	60	53	53	55	60
Weight-mass Kg	60,76	16,19	100	39,4	39,4	57,5	100

Minitab-17 calculations

Table 4. Descriptive measures of the variables, by age group and sex. men n=46

Age: 50- 59 years : average: 56,67 ± 6,402							
Variable (cm)	Media	Std. Dev.	Max.	Min.	P ₅	P ₅₀	P ₉₅
Height-height	166,46	6,96	180	150	155,02	165	180
Orbital height (eye)	155,24	6,86	169	142	145,22	153,75	167,82
Height at the Acromiale (Shoulder)	139,87	6,47	154	128,5	130,05	139	152,65
Elbow height	105,36	5,36	117	90,6	97,7	105	115,65
Iliac spine height	94,85	5,24	105	86	87	94,25	104
Dactylion height	63,152	3,85	75,5	57	57,7	62	73,3
Length of arms	75,82	6,74	92,5	56	62,45	75	90,6
Wrist height	79,73	4,61	96	73	74,35	79	91,3
Fist length	73,96	3,99	80,5	63	65,17	74,5	79,72
Forearm-hand length	46,55	2,68	56	41	42	46	51,65
Head circumference	56,35	1,66	60	53	53,35	56,5	59,65
Weight-mass Kg	78,06	14,19	121	54	56,41	76,65	98,12
Minitab-17 calculations							

Table 5. Descriptive measures of the variables, by age group and sex. women n=12

Age: 50- 59 years: average: 56,83 ± 4,45							
Variable (cm)	Media	Std. Dev.	Máx.	Min.	P ₅	P ₅₀	P ₉₅
Height-height	154,42	5,13	164,5	147,5	147,5	154,25	164,5
Height at Orbital (Eye)	143,21	5,12	152,	135,5	135,5	142,75	152
Height at the Acromiale (shoulder)	129	4,17	136	122	122	128,75	136
Elbow height	98,17	3,57	105	92,5	92,5	97	105
Iliac spine height	89,92	3,59	94	83	83	91	94
Dactylion height	58,7	2,856	63,5	54,5	58	54,5	63,5
Fist length	67,42	4,02	75	61,5	61,5	67,25	75
Forearm-hand length	42,35	3,47	50	36,5	36,5	42	50
Head circumference	55	1,55	57	53	53	55,25	57
Weight-mass Kg	65,28	13,73	92	48,8	48,8	61,5	92
Minitab-17 calculations							

DISCUSSION

The average Venezuelan worker is 43 years old, 170,08 m tall, and has an average of 10 to 15 years of work experience, with wear and tear and possible pre-existing diseases. Similarly, there is a study between the years 1975-2010 of workers over 50 years of age who represent 34,5 %⁽¹⁸⁾ of the labour mass in Venezuela, which represent essential figures within occupational health since it is the worker that we have, but which must be made all the improvements of the jobs taking into account the wear and possible pre-existing diseases that allow better health care and collective welfare of workers.

On the other hand, when the sample was taken, it was observed that 13 % belonged to the stratum (20-29 years old). In this sense, this is the youngest stratum in the industrial world and the one that we can hope for in terms of replacement generations since they are simply in smaller proportion and represent a concern in the labour context.

Taking into account the previous assumption, part of having a low percentage is due to the contraction of the labour market, a product of the economic crisis that the country is going through, among other things, the preferably male migration (15-29 a) and the transfers or remittances to households that may have influenced in the case of women in direct industrial labour ENCOVI (2019-2020).^(2,19)

The case the average female worker has an age of 40,33 years and a height of 156,27 cm; just like the male workers, they have an average work experience between 10 and 15 years, with wear and tear and possible pre-existing diseases. Likewise, this average age should be taken into account, which allows the adequacy of the jobs, as well as the physical conditions of the Venezuelan female worker and the care and attention within her job.

It is essential to point out the existence of gender gaps between male and female workers, the latter being those of lower proportion in relation to male and female workers; within the explanations, we can refer to the sexual division of labour (DST), which allowed identifying how the different tasks or trades within a productive process are assigned to men and women. ⁽²⁰⁾ However, despite the gender gaps, it should be noted that the female labour force has had, in recent decades, significant growth and participation due to, among other things, the economic situation of the country.⁽¹⁸⁾

On the other hand, although it is not the objective of the study, it was observed that the height of the age groups decreased as age advanced. In this sense, it can be said that among the micro-adaptive processes that create variation in human populations is secular change, which is defined as the somatic and physiological modifications that are the result of environmental variations, this secular evolution being affected by the environmental conditions of a population. The decrease in height presented by these age groups is due to age-related wear and tear and other physiological changes. From the assumptions of public health, epidemiological surveillance should be increased to mitigate and control the health of workers to improve productivity in their work environment.⁽²¹⁾

CONCLUSIONS

The study provides an approximation of anthropometric measurements in the standing position of Venezuelan industrial direct labour workers (MODIV), which will allow to expand the ergonomic studies in the Venezuelan labour world and to be able to adapt the workstations, tools and work equipment as established in art. 60 of the Organic Law of Prevention, Conditions and Working Environment LOPCYMAT,⁽²²⁾ considering, among other things, the psychological, cognitive, cultural and anthropometric characteristics of Venezuelan workers and the increase of productivity and health at work.

REFERENCES

1. Vázquez E. Importancia de la antropometría en el diagnóstico nutricional. Proyecto Nodrizo. 2021. Recuperado: <https://proyectonodrizo.org/la-antropometria-en-el-diagnostico-nutricional>
2. Hernández Albrecht P. Principales brechas de la Ergonomía en América Latina: a quince años del siglo XXI. *Rev. Cienc. Salud.* 14;2016
3. Escalona, E. La ergonomía retos y perspectivas en el siglo XXI en Venezuela. Ponencia presentada en las Jornadas del 13vo Aniversario de la Asociación Venezolana de Salud Ocupacional SOVESO. Maracay 14 de octubre de 2022. Aragua, Venezuela
4. Burgos F, Escalona E. Diseño Muestral (Propuesta Metodológica) de la Población Laboral Venezolana, para Aplicaciones Ergonómicas. Ponencia presentada en el VIII Simposio Internacional de Ingeniería Industrial Nuevas Tendencias 2015, Departamento de Ingeniería Industrial de la Universidad del Bio-Bio 5,6,7 de agosto 2015. Concepción, Chile. Recuperado de: <http://www.riuc.bc.uc.edu.ve/bitstream/123456789/3393/4/potenciadp.pdf>
5. Burgos F, Escalona, E. Prueba piloto: validación de instrumentos y procedimientos para recopilar data antropométrica con fines ergonómicos. *Ingeniería y Sociedad UC.* 12(1);2017
6. Burgos F. Predicción de dimensiones antropométricas y capacidad aeróbica en trabajadores de mano de obra directa industrial venezolana, aplicables al diseño ergonómico. (Tesis doctoral no publicada para optar al título de Doctor en Ingeniería). Universidad de Carabobo. Valencia, Venezuela. 2017
7. Labrador A. Predicción de Dimensiones Antropométricas en Bipedestación y Aptitud Física en Trabajadores de Mano de Obra Directa Industrial Venezolana. (Tesis doctoral no publicada para optar al título de Doctor en salud pública). En el programa de Doctorado en Salud Pública Postgrado, Universidad de Carabobo. Maracay Venezuela. 2023
8. Rodríguez-Laralde A, Castro D, González M, Morales J. Frecuencia génica & porcentaje de mezcla en diferentes áreas geográficas de Venezuela, de acuerdo a los Grupos Rh Y ABO. *Interciencia,* 26(1);2001:8-12.
9. Ary D, Jacobs L, Razavieh A. Introduction to Research in Education. Second edition. Library of Congress Cataloging in Publication Data. Holt, Rinehart and Winston. New York, USA. 1979
10. Carmona A. Aspectos antropométricos de la población laboral española, aplicados al diseño industrial.

Instituto Nacional de Seguridad e Higiene en el Trabajo. Madrid, España. 2003

11. Reglamento parcial de la Ley Orgánica de Prevención, Condiciones y Medio Ambiente de Trabajo. LOPCYMAT. Gaceta N° 38.596 del 3 de enero 2007

12. Declaración de Helsinki de la Asociación Médica Mundial. Principios éticos para las investigaciones médicas en seres humanos. 2013

13. World Medical Association. World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. JAMA 2013;310:2191-4

14. Morgan CT, Cook JSIII, Chapanis A, Lunk MW (Ed) Human Engineering guide to equipment design. McGraw-Hill Book Company. 1963

15. Labrador Parra A, Escalona E, Gollo O. Comparative pilot study of anthropometric measurements in standing position between the grid template and the anthropometer Harpenden. Interdisciplinary Rehabilitation / Rehabilitación Interdisciplinaria. 2023; 3:48.

16. Normas Internacionales para la Valoración Antropométrica. Sociedad Internacional para el Avance de la Cineantropometría. 2001.

17. Labrador A, Escalona E. Variables antropométricas en bipedestación en una población de trabajadores y trabajadoras en Latinoamérica: una búsqueda sistemática. Revista Ingeniería y Sociedad-UC. 2019;14(2).

18. Roa A. Situación del adulto mayor en la fuerza de trabajo: Venezuela 1975-2010. Revista Latinoamericana de Población. 2011;11(6):59-86.

19. Encovi. Encuesta nacional sobre condiciones de vida 2019-2020. 2020. Recuperado de: <https://www.proyectoencovi.com>

20. Acevedo D. El trabajo y la salud Laboral de las Mujeres en Venezuela. Visión de género. Valencia. Venezuela: 2da. Edición, FUNDACELAC. Universidad de Carabobo. 2015

21. Fernández R, Prado C. Cambio secular en crecimiento y ciclo reproductor femenino en la población madrileña en las últimas seis décadas. Antropo. 2005;9:77-88.

22. Ley Orgánica de Prevención, Condiciones y Medio Ambiente de Trabajo. (2005, 26 de Julio) Gaceta Oficial N° 38.236.

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