Influence of the Postural Habits Program for the Prevention of Axial Defects in Adolescents, Huánuco-Peru

José de la Mata Bazán¹ & Lilia Lucy Campos Cornejo²

¹Universidad Nacional Hermilio Valdizán
²Decana de la Facultad de Psicología, UNHEVAL, HUÁNUCO- PERÚ.

Accepted 26th June 2018

Abstract

The objective of this study was to demonstrate the influence of the program of postural habits for the prevention of axial defects in high school students of Huánuco, "the type of research was experimental with almost experimental design, for which 144 students from four State Educational Institutions to which the Body Posture Questionnaire was applied before and after the application of the program, obtaining the following results: It has been shown that the program of postural habits has significantly influenced the prevention of axial defects in high school students in the city of Huánuco, in relation to knowledge related to proper body posture, postural habits and postural awareness. Finally, regarding the information related to the axial defects, the program of postural habits has also been effective.

Keywords: Postural Habits, Axial Defects

Introduction

In the last decades an important research work has been carried out among the possible risk factors, the bad postural habits during diverse activities and contexts like the one of the students during their classes in the educational institutions. However, in many of them, the need to design intervention and prevention strategies in which specialists from various professional branches are involved is emphasized, not only in medicine but also in pedagogy.

Noli, Ch⁽¹⁾ points out that the postural defect is the persistence of a muscular imbalance that alters the postural disposition, classifying itself in axial defects, described as those affecting the spine and the peripheral ones that affect the joints of the lower limbs, comprising hip, knee and foot. These defects today are the cause of consultations with the orthopedic surgeon or orthopedic surgeon, not only in medicine but also in pedagogy. A good posture encompasses much more than staying upright, understands, keeping all parts of the body in balance, when the body loses the balance of the axial skeleton its components tend to be out of their normal place or function with excessive efforts, but if the body keeps its balance, all its parts are kept in the proper position. A good posture requires a correct relationship between the different segments of the body in a freely adopted position, without additional muscle tension, with maximum efficiency and a minimum of effort.

Espinoza, Navarro, Valle, Berrios, Horta, Rodríguez, H.⁽⁴⁾ carried out a study on Prevalence of postural alterations in children of Arica-Chile, effects of a program of improvement of the posture and the objectives of this work were to calculate the Prevalence index of postural alterations in a sample of 120 students (10.4% of the total universe), 4 years of age from the city of Arica and determine the effect of a postural improvement program. The most frequent postural alterations correspond to: shoulder inclination (86%), winged scapula and descending scapula (82%), anterior shoulder projection (79%), flat foot (58%), hyperlordotic lumbar spine (51%) and inclination of head (50%), later, a program of muscular exercise and postural reeducation was applied to the experimental group, for a period of 8 months, at the end of the treatment, a post-test analysis was made to all the subjects of the study.

The results in the experimental group show a significant decrease in the initial prevalence rates, in all the alterations under study, the recovery differentials show significant differences between the study groups, with 31% for
shoulder inclination, followed by lumbar hyperlordosis, with 29% and head inclination with 20%, the lowest recoverability was observed in flat feet with 7% (p 0.05), the high percentage of postural alterations present in children of 4 years, from the city of Arica , could be the product of vicious attitudes that, in the future produce an inadequate structuring of the body, then the application of a muscular exercise program and postural reeducation, led by a multi professional health team would significantly reduce these alterations.

Luna L, (5) conducted the study on the prevalence of postural disorders of the spine in patients from 5 to 18 years of the National Hospital Luis N. Sáenz P.N.P. Lima, during the period 2006, in patients from 5 to 18 years old finding that 50.60% of the male sex as opposed to 49.40% of the female sex with posture disorder, postural alterations, postural evaluation, back pain, using the simetógrafo. The objective of this study was to describe the postural alterations of the spine, shoulders, knees, feet and pelvic girdle; the prevalence of dorsalgia; the knapsack transport habits and the number of hours spent in the sitting position for the day, 47 volunteer students were evaluated, 66% of the male and 34% of the female, with an average age of 13 ± 2 years, Analysis was carried out in the frontal planes in anterior and posterior vision and in the right and left sagittal plane, statically, positioned behind the simetógrafo, a questionnaire and a postural evaluation sheet were applied, as well as the type of scoliosis was analyzed. with the anterior flexion of the standing trunk and the weighing of the backpacks.

The results indicate the prevalence of back pain in the spinal region and the average stay in the sitting position of 5 ± 2 h/day, as well as the habit of driving backpacks with excessive weight. The postural alterations of greater evidence detected were the scoliosis and the unevenness of superior anterior iliac spine in 51% of the students, the knees varus and valgus in 34%, the shoulder protrusion in 36%, the anteriorization of the head in 24% and the varismo and valguismo of the feet in 32%. The study suggests the routine practice of postural evaluation in this age group and the adoption of a postural educational program, aiming to prevent the appearance and development of severe postural alterations or of difficult treatment in the adult phase to maintain good posture.

De la Mata, J. (6) conducted the study on "effects of an educational intervention program with the use of audiovisual media in the adequate postural knowledge of high school students of the educational institution" Juan Velasco Alvarado "in the town of Pillcomarca of the province of Huánuco, is a cross-sectional analytical study with 36 students of the third year of secondary school of the national school "Juan Velasco Alvarado", during the period 2011, two questionnaires on adherence to treatment and related factors were used, in the inferential analysis of the results the student's "t" test was used, after applying the educational intervention program with the use of audiovisual media to the students of the sample on the knowledge of the appropriate posture, it was determined that the average obtained in the pre-test is 5.89 and in the post-test 11.50; having a difference of 5.61 with a standard deviation in the pre-test is 1.77 and in the post-test of 1.25, demonstrating the significant influence of the program with a confidence level of 95%, in relation to the levels of knowledge about the posture adequate in the pretest 14% of students in the sample are located in a deficient level of knowledge, the highest percentage 70% are located in the lower level and only 16% show average level; while in the post test, the highest percentage of students 78%, are located in the average level, and 22% achieved a higher level of knowledge about proper body posture, it has been proven that the educational intervention program with the use of audiovisual media, positively influences the knowledge of the appropriate body posture in the students of the third year of high school of the educational institution "Juan Velasco Alvarado" in the town of Pillcomarca Huánuco region, finding significant differences between the results of the pre and post test.

**Hypothesis**

**H**: The application of the program of postural habits, significantly influences the prevention of axial defects in high school students of educational institutions of the city of Huánuco.

**Specific Hypothesis**

**H1**: The application of the program of postural habits, significantly influences the knowledge of the appropriate body posture in the secondary school students of the state educational institutions of the city of Huánuco.

**H2**: The application of the postural habits program significantly influences the practice of adequate postural habits of secondary school students in the state educational institutions of the city of Huánuco.

**H3**: The application of postural Habits program significantly influences the development of body awareness of secondary school students of state educational institutions of the city of Huánuco.

**H4**: The application of the Postural Habits program significantly influences the axial defects in secondary school students of the state educational institutions of the city of Huánuco.

**General Purpose**

- Determine the influence of the program of postural habits in the prevention of axial defects in high school students of educational institutions of the city of Huánuco.

**Specific Objectives**

- Demonstrate the influence of the program of postural habits in the knowledge of body posture in secondary school students of the state educational institutions of the city of Huánuco.

- Demonstrate the influence of the program of postural habits in the practice of adequate postural habits of secondary school students of the state educational institutions of the city of Huánuco.
• Demonstrate the influence of the program of postural habits in the body awareness of basic education students of the State Educational Institutions of the city of Huánuco.

• To demonstrate the influence of the program of postural habits in the identification of the axial defects in the students of basic education of the State Educational Institutions of the city of Huánuco.

Material and Methods

The research method is the explanatory one, the experimental design in its quasi-experimental variant, with pre-test and post-test and intact groups. The sample is comprised of 144 adolescents from the State Educational Institutions of the city of Huánuco. The sampling was for convenience because it was only worked with one section per Educational Institution, however by the criterion of randomness four Colleges have been raffled the sections for the present study (Vilchez, F., Portilla, CH, ³⁷).

The Body Posture Questionnaire was used as instruments to determine the knowledge, bodily habits, body awareness and bodily defects in the students of the sample, then the Observation Guide, to record the indicators of the program that was applied to the students.

Results

Table 1 presents the results of the means and variances of the pre and post test before and after the application of the program of postural habits for the prevention of axial defects in students of Secondary School of the city of Huánuco, as well as the values of “T” to establish the significant differences of both results according to the hypotheses.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Pres Test</th>
<th></th>
<th></th>
<th>Pos Test</th>
<th></th>
<th></th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Media</td>
<td>Variance</td>
<td>Media</td>
<td>Variance</td>
<td>Media</td>
<td>Variance</td>
<td></td>
</tr>
<tr>
<td>Prevention of axial defects</td>
<td>18.3</td>
<td>14.2</td>
<td>24.4</td>
<td>7.8</td>
<td>16.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge about postural habits</td>
<td>4.7</td>
<td>1.09</td>
<td>5.8</td>
<td>0.7</td>
<td>10.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postural habits</td>
<td>3.7</td>
<td>1.7</td>
<td>6.05</td>
<td>1.1</td>
<td>16.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postural awareness</td>
<td>5.1</td>
<td>1.8</td>
<td>6.3</td>
<td>0.7</td>
<td>8.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Axial defects</td>
<td>4.1</td>
<td>3.2</td>
<td>5.9</td>
<td>1.4</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

After analyzing and describing the results, we can point out that according to the general hypothesis, the null hypothesis has been rejected, demonstrating that the program has significantly influenced the prevention of axial defects in high school students of the city’s Educational Institutions of Huánuco. What we can contrast with the study made with students of the Third year of Secondary of the National School "Juan Velasco Alvarado" - Huánuco during the period 2011 where an Educational intervention Program was also applied with the use of audiovisual media, demonstrating the significant influence of the program with a confidence level of 95%.

From these results we can say that it is important that the educational work should be from different disciplinary interventions dealing with an integral formation in this case from the physical health, as Aguado points out, (⁸), that it is important to educate the students in the different daily positions that will be used throughout life, in order to monetize various situations of work, leisure and rest, avoiding fatigue and possible injuries. Likewise Méndez and Gómez-Conesa (⁹) in a study carried out with students of the second cycle of primary school, places our attention on the fact that motivating intervention programs that directly involve the students suppose a greater stimulus than the mere formal transmission of information.

On the other hand, prevention seeks "the identification of those factors that promote health and the implementation of different interventions, in order to keep people healthy" (Guiofantes S, (¹⁰) and it is precisely the level of health of people the maximum indicator of efficiency of any health system, which implies that the application of preventive programs not only informative but that promotes the change of attitudes to adopt appropriate postures will allow to control the incidence of axial defects in the future of the students.

Tortosa, (¹¹), points out that the incidence of postural alterations in the student population is increasing, due to environmental factors as well as hereditary and cultural influences, facts that involve complications at muscular, skeletal and joint levels, among others, such as hyperlordosis, kyphosis, kyphosis and spinal scoliosis; that lead the child or adolescent to mechanize attitudes of a compensatory type in relation to static and dynamic positions, which causes limitations in their motor skills and imbalances that increase day by day, and with adulthood they can become a nuisance that has repercussions in physical and psychological health.

That is why postural education should be taken into account in the training process because through preventive programs students should keep in mind not only in terms of proper habits but also avoid axial alterations that would affect their health later on.

In relation to the second specific hypothesis, it has been shown that the application of the program of postural habits has also significantly influenced the knowledge of the appropriate body posture in the students of the sample. So there are other similar studies as Agudelo, A. (¹²) in Medellín, in a study on Factors associated with body posture in university students found that more than 80% of students have knowledge of body posture, deviations from the column vertebral and on the consequences that it can bring...
to maintain a bad posture; and more than 50% consider that
the furniture of the university is not adequate to maintain a
good body posture which increases the risk of presenting
postural problems.

On the other hand, Gallo, L (13) in the study of bodily
practices in body education had the purpose of approaching
motor skills from body practices such as dancing, playing
and walking, as well as gesture and kinesesthetic sensations
in the horizon of Body Education. It is interesting to show
the Motricity as that experience that we ourselves make of
the body (leiblich) to establish a relationship with Education.
He points out that motor activity, in the horizon of Body
Education, enhances bodily practices not with the purpose
of prescribing institutionalized or normalized practices but
with the pretension of favoring experiences to dispose states
of affection, like that pathos that happens happening,
affecting, touching us and acting on us, which implies a view
of Education under the figure of the event, which does not
pretend to plan the sensible nor to standardize the experience.

In relation to the third hypothesis about the influence of the
Postural Habits program in the development of body
awareness of high school students of the State Educational
Institutions of the city of Huánuco, the influence has also
been significant, since it is known that the frequency of
postural defects in school age is increasing due to
sociocultural, emotional factors in general of their physical
and mental condition, which involve complications at the
muscular, skeletal and joint levels, which causes limitations
in their activities of daily life. with the passage of time and
when reaching adulthood they can have an impact on their
physical and psychological health.

Lorenzo, R (14) in Mexico conducted the study that aimed to
detect what is the frequency of postural defects and inform
the students of the possible repercussions in the future,
likewise to make known which is the correct posture and in
this way promote correct postural health at the upper
middle educational level of said school, being more frequent
in the shoulder and trunk. It was observed the presence of
alterations in shoulders with a 20% lower shoulders and
18% in the presence of a pulse, accompanied by
hyperphysis 12%. In the pelvic region, the anterior hip
inclination was present in 16% of the students, in lower
limbs the postural alterations were less frequent.

In this sense, the ideal posture of a person is one that does
not exaggerate or increase the lumbar, dorsal or cervical
curve; that is, when the physiological curves of the spine are
maintained and determined by the coordination of the
different body muscles to facilitate the mobility of the upper
and lower limbs, through proprioception and sense of
balance, an effective joint function, in relationship with the
flexibility of load joints and correct alignment achieves good
coordination, better body gestures and feeling of wellbeing.

Molano, (15)

Various experimental works have related the repetition and
maintenance of certain postures with certain degenerative
changes in the joint tissues responsible for stabilizing the
spine, with concern about the proliferation of sitting position
in today's society. Due to this circumstance, postural

education becomes a fundamental element for an adequate
development of schoolchildren (Rodríguez et al. (165)

The growing need of attention to the pathologies of the
musculoskeletal system consider fundamental the
prevention of disorders in the neuromuscular system based on
a correct postural training and in which not only medical
professionals participate but also pedagogy, orienting to
develop in the Students postural awareness what implies a
better quality of life in the future.

From these results we can point out that corporal education
is an important part of health and also of education, it is
important to know the functioning of one's own body, so that
from that, health and care habits can be practiced to favor
the Personal development and future problems in the
students. With the application of the program of proper
postural habits students have acquired knowledge of
postural hygiene, on the causes of bodily defects and in this
way has been oriented to develop body awareness that will
serve them for daily life either as adolescents or as adults
and at the same time they can generalize what they have
learned with the rest.

Likewise our contribution in the present study is the
program that should be considered as transversal contents
from the first stages of formal education not only as
knowledge but to correct the inadequate positions in the
different realizations and fields of the students that will
allow them to adopt postures correct and prevent axial
defects later.

Conclusions

According to the general hypothesis, it has been shown that
the program of postural habits has significantly influenced
the prevention of axial defects in high school students of the
city of Huánuco, since statistically the critical value of the t
of -1.653 is lower than the t of table 1.67, therefore the null
hypothesis is rejected, which means that the differences
between the results of the entrance test (pre-test) and the
exit or post-test are significant.

The influence of the program of postural habits on the
knowledge related to proper body posture, in relation to
Postural Habits, has been demonstrated in terms of the
promotion of postural awareness in students and
information related to axial defects.

According to the results obtained, we can point out that
being education an integral formation of the learners, it is
necessary to focus on the education of the body posture from
the early stages for the prevention of the axial defects, to be
a transversal subject and to be an interdisciplinary work for
the early detection of axial defects.

References

is in URL: http://sisbib.unmsm.edu.pe/bvrevistas/situa/1995
_n5/defectos_posturales.htm

2. Rodríguez and Casimiro. Physical education and school health:
program for the improvement of hamstring and spinal
extensibility in the sagittal plane. Doctoral thesis, University
of Granada, 2000

How to Cite this Article: José de la Mata Bazán & Lilia Lucy Campos Cornejo "Influence of the Postural Habits Program for the Prevention of Axial Defects in Adolescents, Huánuco-Peru" Weber Psychiatry & Psychology (ISSN: 2449-1616), Vol. 5 (1) 2018, Article ID wpp_234, 1004-1008


5. Luna, L. Prevalence of postural disorders of the spine in patients from 5 to 18 years of the National Hospital Luis N. Sáenz P.N.P. Lime. 2007

6. De la Mata, J. Effects of an educational intervention program with the use of audiovisual media on adequate postural knowledge of high school students of the “Juan Velasco Alvarado” educational institution in the town of Pillcomarca. Huánuco, 2012

7. Portilla, Ch., Vilchez, F. The practice of Research in Psychology. Arequipa; 2013


11. Tortosa, I. Postural correction, prevention of immobility and promotion of physical activity. Salamanca; 2008

12. Agudelo, A. Factors associated with body posture in university students. Medellin; 2013


