Prevalence of non-specific Low back pain on physiotherapy students

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Abstract

Introduction: The prevalence and incidence of LBP is unchangable almost every year worldwide, being described as a pain that causes instability and inability to work, disrupts the quality of life and the reason for more frequent medical visits.

The purpose of this study:The purpose of this study is to indetify and study the prevalence of nonspecific Low Back Pain among the Physical Therapy students of the Faculty of Technical Medical Science in the University of Medicine Tirana .

Methodology : This is a Cross-sectional study. This study included 80 students (73 females and 7 males) of the Physical Therapy on their Science Master Degree , first year (n=42) and second year (n=38). Students filled a questionnaire and to be participants on this study they must furfill some criteria defined by the study.

Results :By the end of the study was discovered that the prevalence of nonspecific Low Back Pain among students was 73% . The mean value of pain intensity according to Visual Analogue Scale was 3.77. Where 36% of the subjects exprerienced a mild pain, 55% e moderated pain and 9% a severe pain. Disability according to the Oswestry Disability Index was 19% (minimal disability)

Conclusions

In conclusion according to this study Physical Therapy students in Albania have a high prevalence of Low Back Pain among them. Low Back Pain can be an ocupational risk and may cause disability on this student group. Risk factors and the causes of Low Back Pain remain to be studied.

Keywords: Low Back Pain , Students , Physical Therapy , Prevalence , Pain intensity, Disability

Introduction

In literature Low Back Pain is described as a pain, muscle tension or stiffness below the rib arch and above the inferior gluteal area, accompanied or not by thigh pain (1).

Low Back Pain presents three subtypes based on the time of onset, their duration and the characteristics of the symptoms:

- Chronic Low Back Pain, is defined as pain that persists for more than 7-12 weeks.

-Low Acute Back Pain, is defined as pain that persists for a period of less than 7 weeks.

-Low Back Pain Subacute, pain with a time extension from 6 weeks to 3 months. (2)

Nonspecific LBP is defined as pain which does not come from organic pathologies such as tumors, infections, traumas, spondylolisthesis, rheumatic spine diseases and which has a definite cause, its diagnosis is achieved by exclusionary diagnoses. 90% of patients with Low Back Pain are from non-specific causes. (3)

Epidemiology

The probability that an individual will experience at least one episode of Low Back Pain during his lifetime is 6: 1, and even the data show that it is impossible for any individual to avoid such an episode during his lifetime. (4) The point prevalence of non-specific LBP is estimated to be 25%, the annual 50% and the vital prevalence 85%. These data are not limited to developing countries and do not depend on gender, age or other characteristics of the individual but vary on the basis of occupation commitment. The incidence of LBP peaks in adulthood with symptoms that tend to increase over time (5). Symptoms appear in adolescence reaching a peak around the age of 35-55 years. (6) The incidence of individuals who first show symptoms of LBP varies from 6.3-15.4%. (7)

Etiology

Having an extensive clinic and often none well-defined causes the etiology of Low Back Pain often remains unclear and difficult to determine. Attempts to answer questions on the etiology of the disease have been numerous, citing biomechanical, sociocultural, psychological, and epidemiological anatomical studies, but it is not yet possible to provide a proper scientific answer.

Low Back Pain is caused by a number of factors which may be of external, internal origin, depending on the individual characteristics of the patient, social life as well as factors in the form of autoimmune diseases or other forms that accompany the patient.

Factors of a physical nature are in the minority, traumas caused by falls, fractures often from osteoporosis in old age are factors that are immediately identifiable. Also the presence of vertebral infections or tumors are extremely rare as causes for Low Back Pain.

Weight lifting, occupation and working conditions, dynamic and static posture of the individual, weight lifting and repetitive physical work, lifestyle and psychological factors are all risk factors for Low Back Pain, but not only dynamic and physical conditions affect the appearance of Low Back Pain. (8)

Factors such as smoking, body weight, social conditions and the level of monthly income, insurance at work also affect the occurrence of Low Back Pain but also the length of time in which it persists (9).

Causes and factors also refer to the nature of Low Back Pain. Because Low Back Pain is classified as specific and non-specific, factors often determine the nature of the pain and its persistence. Specific factors are responsible for less than 20% of the development of Low Back Pain with a probability that the pain is from a specific cause with only 0.2% this and for the reason that the causes classified as red-flags are easily determined by the relevant specialists doing and their possible inhibition. (10)

Specific causes such as compression fractures account for 4% of cases with Low Back Pain, tumors or metastases 0.7%, ankylosing spondylitis 0.3% and 0.01% infections. (11)

PART 2, STUDY

Purpose

The purpose of this study is to study and determine the prevalence of non-specific LBP among physiotherapy students at the Faculty of Medical Technical Sciences, University of Medicine Tirana. Also study the characteristics of LBP and how it affects the daily and academic life of students.

Objectives of the study

-General objectives:

The objective of the study is to determine the prevalence level of LBP and evaluate its characteristics.

-*Specific objectives:*
1. Determine the degree of pain from LBP to students
2. To study the level of disability caused by LBP in students

Type of study
The study is of the Transversal type, prevalence

Methodology

The study included 80 students (73 females and 7 males) of the Master of Science in Physiotherapy, first year (n = 42) and second (n = 38) at the Faculty of Medical Technical Sciences of the Medical University of Tirana. Students completed a questionnaire and to participate in the study they had to meet certain criteria set by the study.

Criteria

Inclusive criteria	Exclusive criteria
•Age 20-23 years	• Trauma to the lumbar area
• Physiotherapy students	• Spinal deformities
• Both genders	• Recent inflammatory or infectious episodes
• BMI ≤ 35	• Tumors
	• Without LBP

Survey instrument

Data from students on their general reality and LBP characteristics were obtained through a questionnaire. The questionnaire consists of 20 modules. It was translated into Albanian and modified to suit the purpose of the study. The questionnaire is a modified combination between the VAS pain scale questionnaire and the Oswestry Disability Index questionnaire.

Data analysis

From the data collection 58 students met the conditions to participate in the study, of them (n = 27) were in the first year of master studies and (n = 31) in the second year.

22 out of 80 students were expelled because they did not meet the criteria set by the study.

The group of students (n = 58) who met the criteria for participation in the study had an average age of 21.7 years and an average body weight of 60 kg.

Each module of the questionnaire was analized to gather the data needed to come to a conclusion.

• Module 5

Module 5 seeks to identify how much time subjects spend during the day on exercise, sleep, study, sitting, walking, and work.

From the data obtained it is noticed that:

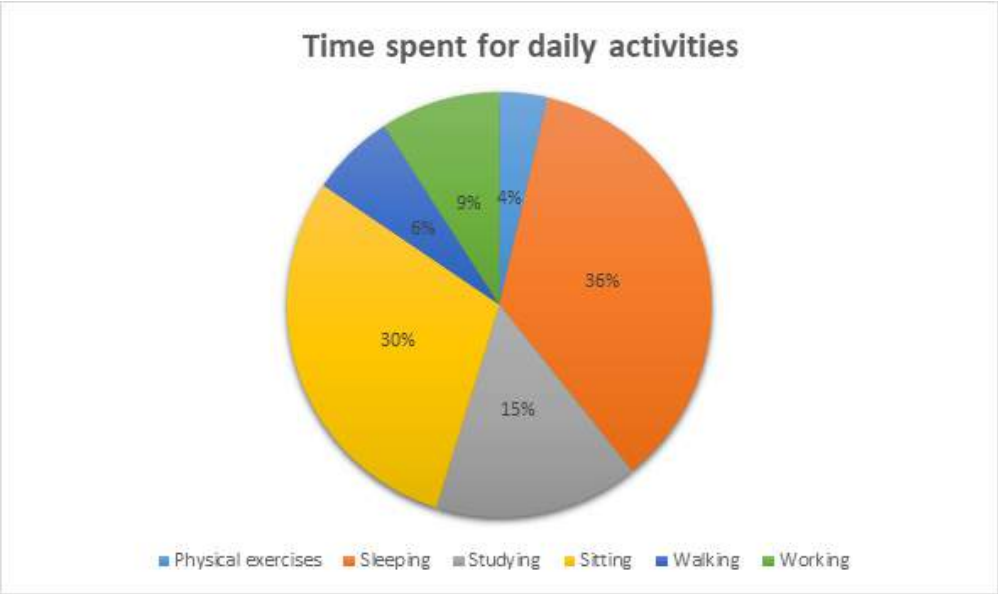
-Subjects spend an average of 0.8 hours on physical activity during the day

- Subjects spend an average of 7.8 hours of sleep during the day

- On average, subjects spend 3.4 hours per day studying

- Subjects spend an average of 6.5 hours sitting during the day

-The walk costs the subjects 1.4 hours during the day



• Module 6

This module seeks to identify the time when subjects experienced an episode of LBP for the first time during their academic career. Starting from the first year of the Bachelor to the second year of the Master of Science.

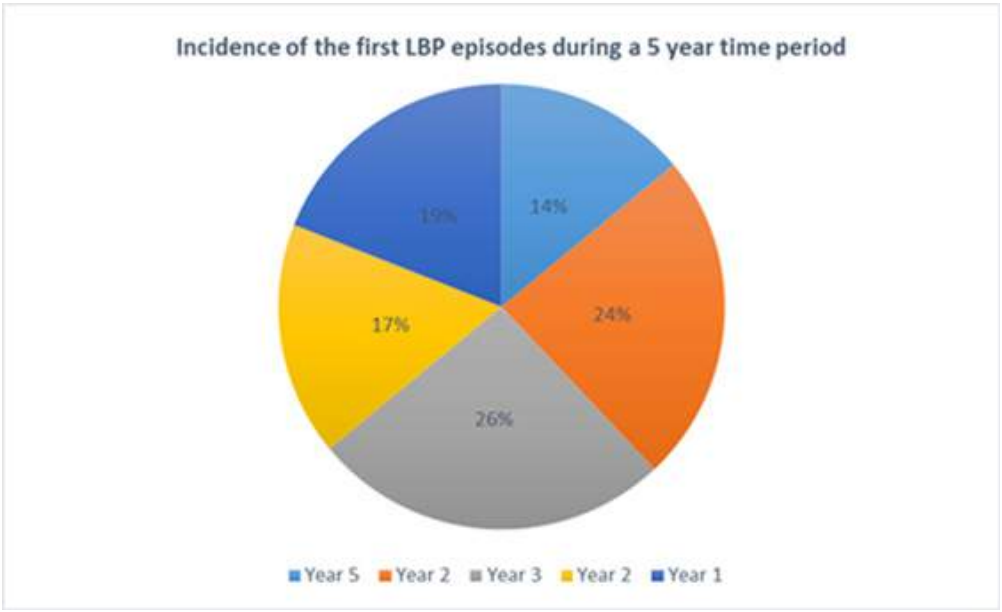
From the data it is noticed that:

- 14% of subjects (n = 8) have experienced LBP for the first time in the fifth year of their academic career.

- 24% of subjects (n = 14) have experienced LBP for the first time in the fourth

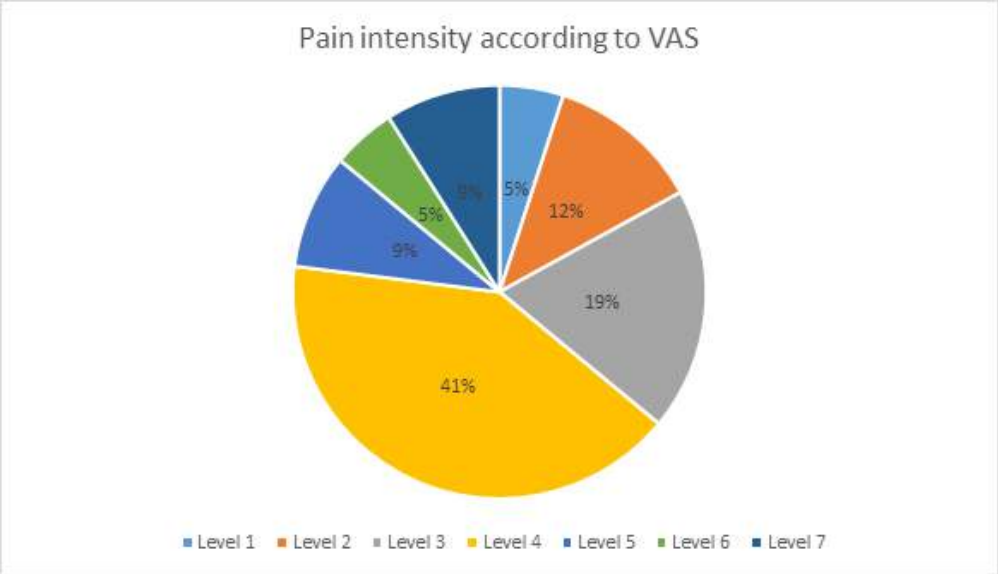
year of their academic career.

- 26% of subjects (n = 15) have experienced LBP for the first time during the third academic year.
- 17% of subjects (n = 10) have experienced LBP for the first time during the second academic year,
- 19% of subjects (n = 11) have experienced LBP for the first time during the first academic year.



• Module 7 contains the visual scale for pain level (VAS) and seeks to identify mean pain level.

The intensity of pain according to VAS will be calculated in the following way:
0 - no pain, 1-3 - mild pain, 4-6 - moderate pain, 7-10 - severe pain
The data shows that:
- 5% of subjects (n = 3) have a level 1 pain
- 12% of subjects (n = 7) have a level 2 pain
- 19% of subjects (n = 11) have a level 3 pain
-41% of subjects (n = 24) have a level 4 pain
- 9% of subjects (n = 5) have a level 5 pain
- 5% of subjects (n = 3) have a level 6 pain
- 9% of subjects (n = 5) have a level 7 pain
- Pain at level 0, 8, 9, 10 was reported by 0 subjects



• Modules 8 and 10

Module 8 seeks to identify the frequency of manifestations of LBP episodes. Where:

-"Never" and "Very rarely" refer to a frequency of 0 and low respectively,

-"Sometimes" refers to a moderate frequency

-"Often" and "Constant" refer to a high frequency

Module 10 seeks to determine if LBP has been manifested during the last 7 days at the time of completing the form

The data show that:

Module 8:

-6% of subjects (n = 4) reported that the pain was manifested "Very rarely"

-78% of subjects (n = 45) reported that the pain was manifested "Sometimes"

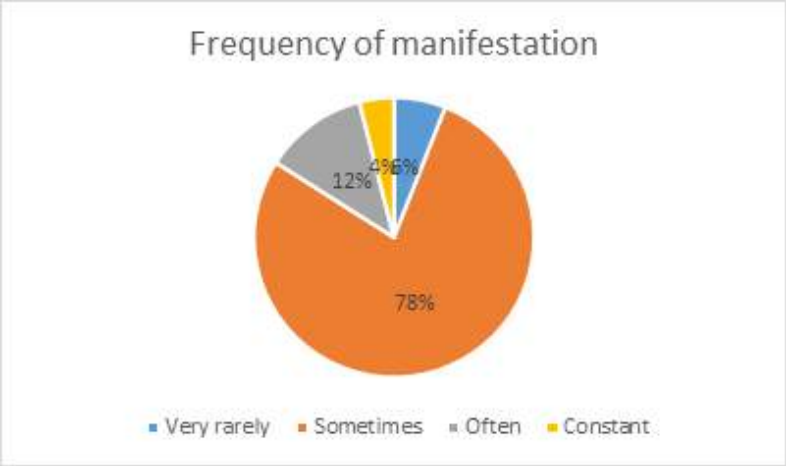
-12% of subjects (n = 7) reported that the pain was manifested "Often"

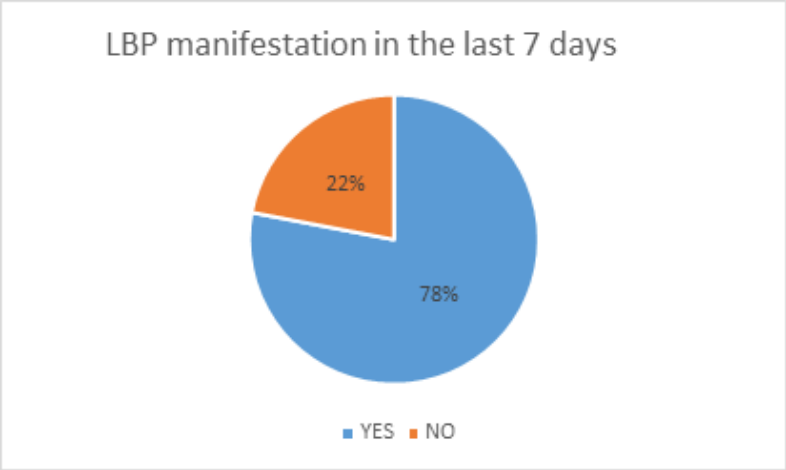
-4% of subjects (n = 2) reported that the pain was manifested "Constant"

Module 10:

- 22% of subjects (n = 13) reported that they had not experienced LBP during the last 7 days

-78% of subjects (n = 45) reported having experienced LBP during the last 7 days





• Modules 12 - 19 are part of the Oswestry Disability Identification Index for Disability

The 8 modules seek to identify how LBP affects stress, sitting posture, personal care and hygiene, standing posture, weight lifting, walking, work and study.

Each module contains a response rated from 0 to 5:

- 0 = LBP does not affect activity
- 5 = LBP has a major disabling impact on activity

0%-20%	Minimal disability
21%-40%	Moderate disability
41%-60%	Severe disability
61%- 80%	Disabled subject
81%-100%	Subject disabled in bed

The data show that:

- 60% of subjects (n = 35) report a minimal disparity with 0% -20% of points
- 40% of subjects (n = 23) report a moderate imbalance with 21% -40% of points

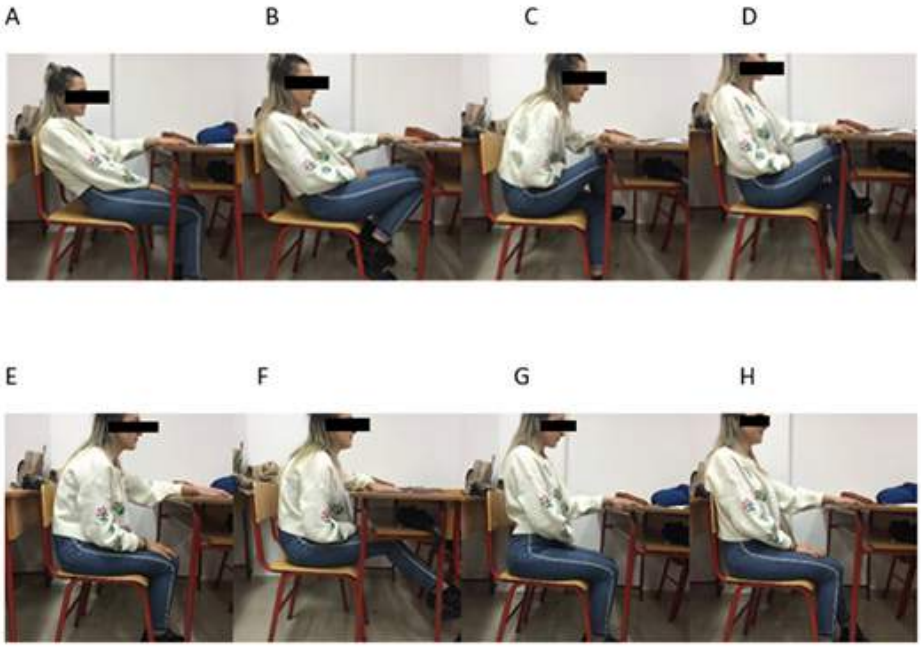
The average value of group instability is calculated = 19% (minimum disability).

- Module 20 in the questionnaire contains an illustration on the sitting position in the classroom. The illustration consists of 8 different positions:

1. Position A: Back with chair support and flatened lumbar lordosis with feet resting on the ground
2. Position B: Back rested in chair and flatened lumbar lordosis with flexed knees supported in chair
3. Position C: Back with kyphosis augmentation and crossed legs
4. Position D: Back supported in chair with crossed legs
5. Position E: Addition of the kyphosis with feet resting on the floor
6. Position F: Addition of the kyphosis with legs supported in another chair
7. Position G: Addition of lordosis with feet supported on the floor
8. Position H: Back rested in chair with legs supported on the floor.

From the data obtained it results that:

- 5% of subjects (n = 3) sit in position A, the average pain level according to VAS for this group is 2.6
- 9% of subjects (n = 5) sit in position B, the average pain level according to VAS for this group is 4.2
- 45% of subjects (n = 26) sit in position C, the average pain level according to VAS for this group is 3.3
- 16% of subjects (n = 10) sit in position D, the average pain level for this group according to VAS is 4.1
- 5% of subjects (n = 3) sit in position E, the average pain level for this group according to VAS is 3.3
- 10% of subjects (n = 6) sit in position F, the average pain level for this group according to VAS is 4.1
- 5% of subjects (n = 3) sit in position G, the average pain level for this group according to VAS is 4
- 5% of subjects (n = 3) sit in position H, the average pain level for this group according to VAS is 5.3



Results

At the end of the analysis of data obtained from students through questionnaires it results that the prevalence of non-specific LBP is 73%.

- The average level of pain according to the VAS scale is 3.77, 36% of subjects have a mild intensity of pain, 55% moderate intensity and 9% high intensity

- Disability according to the Oswestry index results in average values of 19% (minimum disability) where 60% of subjects (n = 35) report a minimal disability with 0% -20% of points. 40% of subjects (n = 23) report a moderate disability by 21% -40% of the points.

- It is noticed that 78% of the subjects have moderate episodes of recurrence of LBP where also 78% of them report that they had had episodes of LBP during the last 7 days. Subjects spend 66% of their day sedentary (lying down or sitting) and only 4% on physical activity.

Disscusion

The prevalence of LBP in physiotherapy students from my study turns out to be 73%.

From other studies with similar themes it is noticed that the prevalence of LBP is similar to that of my study.

Also the intensity of pain and the level of disability are seen to be in approximate values.

In the study conducted by Agnieszka Kędra et al., (12) with 1311 students of physical education and physiotherapy it resulted that the prevalence of LBP among these students was 70.1% where for pain data reported that 38.1% of students had a slight pain , 44.2% moderate and 17.7% severe.

-In my study these data are similar where 36% of subjects have a mild pain intensity, 55% moderate intensity and 9% high intensity.

Aminta S Casas et al., (13) in the study conducted with 516 students of the Industrial University of Colombia found that the prevalence of LBP among students was 79.8% and with an average pain value of 2.84, close to my study with a value of 3.77 .

Amelot, Aymeric MD et al., (14) in the study conducted at the University and Hospital Center La Pitiè -Salpètrière in France with 1243 students concluded that the prevalence of LBP among students was 72.1% with a minimum degree of disability of 18.89%,

-My study results in a degree of disability of 19% according to ODI.

Aleksandra Kolwicz-Gańko et al., (15) included 4 universities in the study with a total of 1321 students, the study did not determine the prevalence but determined that 43.4% of students had a pain of moderate intensity and 20% of high intensity, also between students saw a high degree of disability due to LBP where 60% of students have difficulty sitting and 50% have difficulty standing.

Isidora Vujcic et al., (16) in the study conducted at the Faculty of Medicine in Belgrade included 459 students and concluded that the prevalence of LBP was 75.8%. LBP affected the daily lives of students where 14.6% report that LBP affects sleep and 12% on walking.

Camille Tavares et al., (17) in the study conducted with 629 medical students in Brazil concluded that the prevalence of LBP is 81.7%, the mean value of pain intensity was 4 and 20.5% of students report that LBP interferes with social activities 33.1% LBP interferes with physical activity and 29.2% LBP interferes with school activity.

M Mierzejewski et al., (18) in the study conducted in Edmonton, Canada involving 462 physiotherapists found that the prevalence between them was 49.2% and 55.4% of physiotherapists reported minimal disability. The study also concluded that the population of physiotherapists had a higher prevalence than the general population of Canada by 27%

Leah Jane Nyland et al., (19) in her study included 250 physiotherapy students in Australia and found that the prevalence of LBP was 69%.

Nupur Aggarwal et al., (20) studied the prevalence of LBP among medical university colleges in Delhi, India including 160 students in his study and

concluded that the prevalence among them for LBP was 47.5%

Mustafa Ahmed et al., (21) included 232 students of private medical colleges in Malaysia. LBP prevalence was reported to be 65.1%

Asdrubal Falavigna et al., (22) compared the prevalence n of LBP among medical students with those of physiotherapy. 416 students were included in the study and the prevalence of LBP in physiotherapy students was 77.9% and according to the study physiotherapy students have a higher prevalence than those of medicine.

Grace O. Vincent-Onabajo et al., (23) in a study conducted at three Nigerian universities with 290 undergraduate physiotherapy students concluded that the prevalence of LBP was 45.5%

Beatriz Minghelli et al., (24) included in her study 752 adolescent subjects and students in Portugal. The study concluded that the prevalence of LBP among this group was 62.1%.

Peter A. Leggat et al., (25) in his study in Queensland, Australia included 145 occupational therapy students. The data show that the prevalence of LBP among this group of students was 64.6%. LBP is reported to affect the activities of daily living by 38.8% of students

Fahad Abdullah et al., (26) studied the prevalence of LBP among 1163 health science students. The findings of the study show that the prevalence of LBP is 56.6% and 90.3% of students reported minimal disability. According to my study minimal disability is reported by 60% of students.

Tim Mitchella et al., (27) included in his study to determine the prevalence of LBP 897 nursing students and nurses at work in Australia and found that the prevalence of LBP was 79%. 60% of students report reduced activity due to LBP.

P. A. Leggat et al., (28) in his study studied the prevalence of musculoskeletal problems and LBP among 261 medical students in Australia. The prevalence of LBP was reported to be 51.6%.

Sheikh Sabuj (29) studied the prevalence of LBP in the same population as my study with 80 LBP students and found that the prevalence of LBP was 93.75%.

Jerry Y Du et al., (30) studied the prevalence n of neck and back pain in 210 medical students. The prevalence rate of LBP was 47% and according to VAS the average pain level is 2.6

Salmina Magdalena Burger (31) in her study conducted in Australia with 208 physiotherapy students reported that the prevalence of LBP was 40%.

Conclusion

In conclusion, the study concludes that Low Back Pain has a high prevalence among physiotherapy students in Albania. This group of students is at risk for

occupational problems and disability due to Low Back Pain. The causes and risk factors of LBP in these students remain to be studied.

Recommendations

Based on the collected data and the conclusions that the study drew, we can recommend that:

- Students should strive to have a more physically active life and avoid extended sedentary hours.
- Be careful with every episode of Low Back Pain they experience and do not allow the pain to aggravate.
- Physiotherapy students apply LBP rehabilitation techniques on themselves.
- During prolonged sitting, apply relaxing exercises for the back at short intervals.

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