

Prevalence and Management of Nonspecific Low Back Pain in Physiotherapy Students

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ABSTRACT

Introduction: Low back pain is a significant health problem in all developed countries and is one of the most common cases that appear near health facilities to seek treatment. 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 indentify 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. Also this study aim's to study the characteristics of Low Back Pain and how does it affect the every day lives of students.

Methodology: 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 fulfill 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 experienced 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.

Defnicion

Low Back Pain is a serious problem in all the develop countries and is one of the most dispalyed problem at health service. Low Back Pain is not considered an illness but a syndrome. It is considered a syndrome because one of the factores how causes Low Back Pain is lumbar overload (lumbar stress condition). This one is displayed

at human body with chronic pain.

The incidence of Low Back Pain every year is in the same values. This pathology is manifested at patient with disability, unable patient to work and low quality of life. All this symptoms are the causes to lead the patient at the doctor. But not just pain and disability characterized Low Back Pain.

Low Back Pain some times is manifested with low acute pain which are not so disturbing for the patient. This pain starts not always

after a heavy activity, this can be start after a moderate activity. In these cases, the symptoms disapired after a few days. At the same patient Low Back Pain is manifested with great symptoms like: muscular spasms (which are produce after the body movement), burning pain and paresthesia in all the leg (thigh, along tibia and foot). At the leg the patient also feels muscular weakness and problems with sensitivity and walking [1].

Acording to Global Burder of Disease Study (GBD) the Low Back Pain is one of 10 disease which manifested at the patient with heavy symptoms. Low Back Pain is more often that HIV, roadaccidents, tuberculosis, pulmonar cancer and chronic obstructive pulmonary disease.[2] In the literature Low Back Pain is accompanied with pain, muscular tension in back and sometimes in last ribs and with paresthesia in leg [3].

Low Back Pain has 3 subtypes based on the time of pain, duration of pain and pain characteristics:

- Chronic Low Back Pain is a pain which last more than 7-12 weaks
- Acute Low Back Pain is a pain which last less than 7 weaks
- Subacute Low Back Pain is a pain which last between 6 weaks until 3 months [4]

Non-specific Low Back Pain defined like a pain wich is not caused by tumors, infectiones, trauma, spondilolisthesis dhe reumatic spinal disease. 90% of patients with Low Back Pain are with non-specific causes [5].

Low Back Pain management and treatment

Low Back Pain has some different group of patients. The studies have shown that we have 4 groups of patients with Low Back Pain [107].

- The fist group is considered like the most common about patients wih Low Back Pain. This group of patients doesn't have a specific biginner of pain. In this group patients do not have their daily life activity limited.
- The second group is consisting from patient with limit daily life activitiescause of pain. The patient in this group starts taking care from health stuctures.
- The third group is consisting from patient with neurological difficity (sensor and motor problems depending to dermatome).
- The fourth group is consisting from patient with progressive spinal cord injury. The patient in this group needs surgical intervention or pysical therapy.

90% of this patient how suffers from Low Back Pain aren't limited on their daily life activity.

75% of these patients are return on their work for 4 weaks.

Purpose

The purpose of this study is to analise and to determine the prevalence of non-specific Low Back Pain between students of physiotherapy in Faculty of Technical Medical Sciences, Medical University, Tirana. This study has in his purposes also; "How does Low Back Pain affect the student's life?".

Objectives

General objectives: The objective in this study is to determine the prevalence of Low Back Pain and to appreciate its characteristics.

Specific objectives:

- To determine the pain level from students with Low Back Pain
- To study the disability at students with Low Back Pain

Type of study

The study is transversal, prevalence.

Methodology

In this study are including 80 students (73 female and 7 male) from Physiotherapy Scientific Master, first degree are 42 students and second degree are 38 students in Faculty of Technical Medical Sciences, Medical University, Tirana. The students have fill a questionnaire. To be part of the study the students have to complete some crriteres.

The criteres are:

Table 1: Including and Exclusionary criteres.

Including criteres	Exclusionary criteres
Age 20-23 years old	Lumbar trauma
Physiotherapeutic students	Lumbar deformations
Both sex	Inflamatori episodes
BMI < 35	Tumors
	Non-Low Back Pain

Obtain information

In the questionnaire the students have to write their generalities and the symptoms of Low Back Pain. This questionnaire has 20 parts. This questionnaire is translated in Albanian language. The questionnaire is combined between VAS level pain questionnaire and the Oswestry disability questionnaire.

The questionnaire interpretation

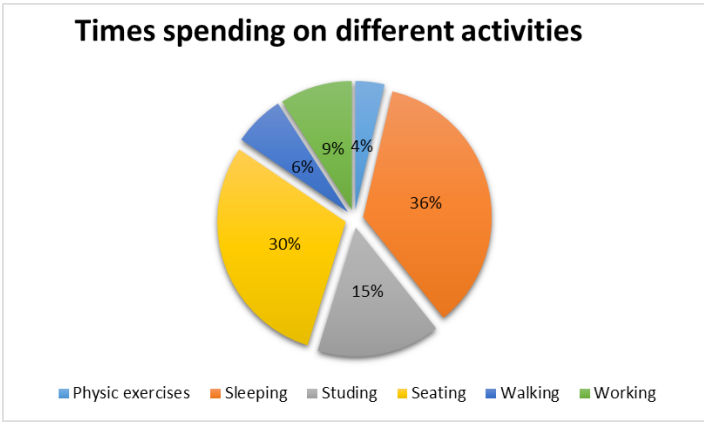
After we collect all the information, resulted 58 students how has complited the questionnaire criteres. 27 students from first degree and 31 students from second degree. 22 students have been exluded from the study because they didn't complete the criteres.

The fist students' group has 58 participants. The average age of participants is 21.7 years old and an average body weight is 60 kg.

- The questionnaire requires to identify how much time does students spend for exercises, sleep, learn, seat, walking and work.

From the information we notice:

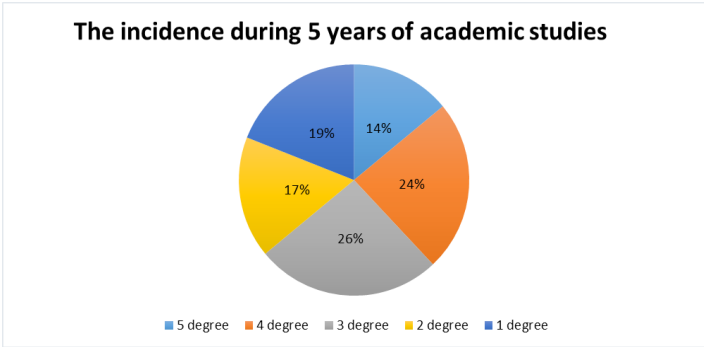
- The subjects spend on average 0.8 hours/day doing exercises
- The subjects spend on average 7.8 hours sleeping
- The subjects spend on average 3.4 hours/day learning/reading
- The subjects spend on average 6.5 hours/day staying sitting
- The subjects spend on average 1.4 hours/day walking
- The subjects spend on average 2 hours/day at work



Graphic 1: In this diagram is illustrated how much time does students spend for exercises, sleep, lear, seat, walk and work.
 • The questionnaire requires to identify the time when the students has overlived one-time Low Back Pain during their studies.

Starting from the first year to second. We notice:

- 14% of subjects (8 students) has feel Low Back Pain for the first time in the fifth degree
- 24% of subjects (14 students) has feel Low Back Pain for the first time in the fourth degree
- 26% of subjects (15 students) has feel Low Back Pain for the first time in the third degree
- 17% of subjects (10 students) has feel Low Back Pain for the first time in the second degree
- 19% of subjects (8 students) has feel Low Back Pain for the first time in the first degree



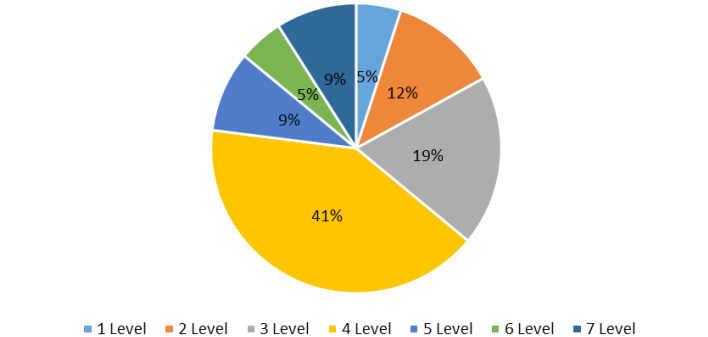
Graphic 2: In this diagram is illustrated the incidence of repeteted Low Back Pain during the studentes studies.

- The questionnaire has analised the pain level (VAS) and require to identify the level pain at students.

The VAS level pain has been calculated in this way:
 0 → No pain
 1-3 → Middle pain
 4-6 → Moderate paind
 7-10 → High pain
 After we analised the information, we notice:

- 5% of subjects (3 students) has pain at level 1
 - 12% of subjects (7 students) has pain at level 2
 - 19% of subjects (11 students) has pain at level 3
 - 41% of subjects (24 students) has pain at level 4
 - 9% of subjects (5 students) has pain at level 5
 - 5% of subjects (3 students) has pain at level 6
 - 9% of subjects (5 students) has pain at level 7
 - 0,8,9 dhe 10 level pain has 0 students reported
- The average pain level was 3.77
 Moda: Pain level 4

Pain intensity according VAS level pain



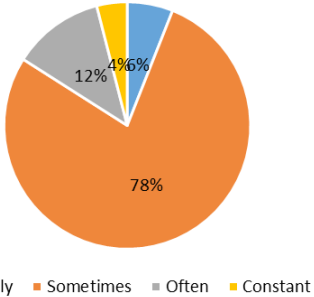
Graphic 3: In this diagram is illustrated pain level according VAS level pain.

- The questionnaire has analised the frequecy of pain repetition. We have some options:
 Never/Rarely are refered to 0 pain level
 Sometimes is refered to moderate pain level
 Often/Constant are refered to high pain level

From the analised information we notice:

- 6% of subjects (4 students) has reported that they have felt rarely pain
- 78% of subjects (45 students) has reported that they have felt sometimes pain
- 12% of subjects (7 students) has reported that they have felt often pain
- 4% of subjects (2 students) has reported that they have felt constant pain

Pain Frequency

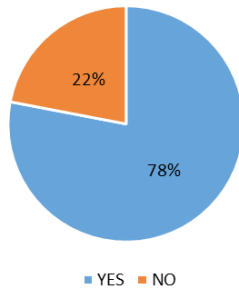


Graphic 4: In this diagram is illustrated students pain frequency.
 • The questionnaire has analised the students if they have felt pain the last 7 days (at the moment that they were filling the questionnaire).

From the analysed information, we notice:

- 22% of subjects (13 students) has reported that they haven't feel Low Back Pain along last 7 days
- 78% of subjects (45 students) has reported that they have feel Low Back Pain along last 7 days

Pain along 7 last days



Graphic 5: In this diagram is illustrated the pain presence along 7 last days.

- The questionnaire has analysed the student's disability with Oswestry questionnaire. With this questionnaire we can identify the impact of stress, seating posture, selfcare, personal hygiene, staying on feet, taking weights, walking, working and studing on Low Back Pain.

In this part we have evaluated the students with grades 0-5:

0 → Low Back Pain has any influence on the student's daily life activity

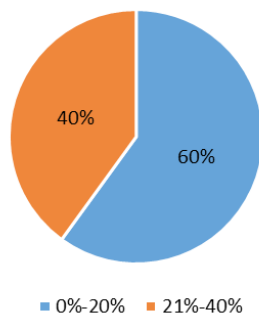
5 → Low Back Pain has a high disability on the student's daily life activity

The evaluation of disability will be rated from 0-40 points. After we analysed the information we pronounce them on the percentage like below:

- 60% of subjects (35 students) has reported minimal disability with 0%-20% of points
- 40% of subjects (23 students) has reported moderate disability with 21%-40% of points

The overage disability is calculated 19% (minimal disability)

Low Back Pain Disability



Graphic 6: In this diagram is illustrated the Incidence of Daily Life Activity disabilities at students' life.

Table 2: Incidence of Daily Life Activity disabilities at students' life.

Students' disability expressed in %	Types of disability	Students' incidence
0% -20%	Minimal Disability	60% of students
21% - 40%	Moderate disability	40% of students
41% - 60%	High Disability	0 students
61% - 80%	Individualise subject	0 students
81% -100%	Individualise subject on bed	0 students

- The questionnaire contains an informaton about sitting posture. The ilustration has contain 8 pozitiones.

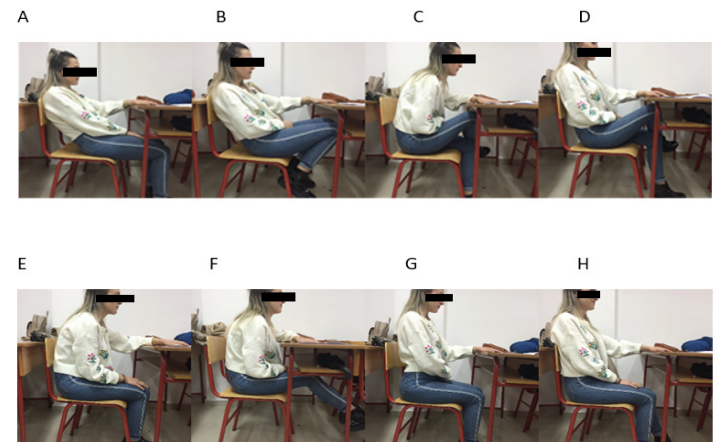


Figure 1: Students sitting posture.

A position: The back is supported on the chair and the student has hypolordosis with hic foot on the floor

B position: The back is supported on the chair with genu artitulation on flexion

C position: The back has hyperlordosis and the student is with cross legs

D position: The back is supported on the chair and the student is with cross legs

E position: The back has hyperlordosis and the legs are on the floor

F position: The student has hyperlordosis and the student is with legs on the other chair

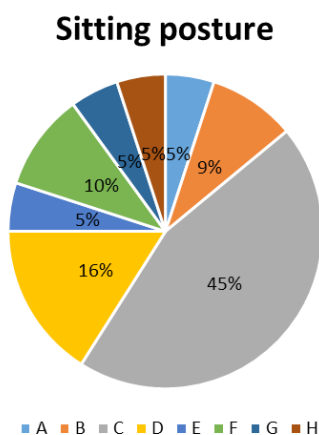
G position: The student has lumbar hyperlordosis and his/her legs are on the floor

H position: The students beck is supported on the chair and his/her legs are on the floor

From the information we analysed, we notice:

- 5% of subjects (3 students) are seating on A position, the overage pain (VAS) is 2.6
- 9% of subjects (5 students) are seating on B position, the overage pain (VAS) is 4.2
- 45% of subjects (26 students) are seating on C position, the overage pain (VAS) is 3.3
- 16% of subjects (10 students) are seating on D position, the overage pain (VAS) is 4.1
- 5% of subjects (3 students) are seating on E position, the overage pain (VAS) is 3.3
- 10% of subjects (6 students) are seating on F position, the overage pain (VAS) is 4.1

- 5% of subjects (3 students) are seating on G pozition, the overage pain (VAS) is 4
- 5% of subjects (3 students) are seating on H pozition, the overage pain (VAS) is 5.3



Graphic 7: In this diagram is ilustrates students sitting posture.

Results

In the end of this study, we analise all the information about students' questionnaires.

- We notice that non-specific Low Back Pain is 73%
- The overage of back pain according to VAS questionnaire is 3.77. 36% of subjects has Low Back Pain, 55% has moderate pain and 9% has high pain
- The disability according the Oswetry questionnaire has 19% minimal disability, 60% (35 subjects) has minimal disabilities with 0%-20% of points, 40% (23 subjects) has moderate disability with 21%-40% of points
- We notice 78% of subjects has moderate repeted pain of Low Back Pain along last 7 days. The subjects spend 66% of the day without activity and just 4% do activities (exercises)

Discussions

The prevalence of Low Back Pain on physiotherapist students is 73%. By other similar studies we have notice the same prevalence with our study. Also, the pain intensity and the value of disability are on the same values.

Jerry Y Du et al., has study the prevalence of Low Back Pain and cervical pain on 210 medical students. The prevalence was 47% and the pain overage (VAS) was 2.6 [173]. At the studie relised by Agnieszka Kędra et al., with 1311 physical education students and physiotherapeutic students, the prevalence of Low Back Pain was 70.1%. 38.1% of students has low pain. 44.2% has moderate pain and 17.7% has high pain [174]. In my study these results are similar. 36% of students has low pain, 55% moderate pain and 9% high pain.

Aminta S Casas et al., in her study with 516 students from Industrial University, Colombia has a prevalence 79.8% and an overage pain

2.84, similar with my studie (3.77) [175].

Amelot, Aymeric MD et al., in his study, relised on University and Hospitality Center at La Pitiw-Salpêtrière, France with 1243 students. In the end notice that the prevalence of Low Back Pain is 72.1%, with a minimal disability 18.89% [176]. My result was 19% with a minimal disability.

Aleksandra Kolwicz-Gańko et al., has include 4 universities in her studie with 1321 studentes. This study has not determined a prevalence, but has notice that 43.4% of students has a minimal intensity pain and 20% has high intensity pain. Also between students she notice a high disability caused by Low Back Pain. 60% of students has difficulty on seating and 50% staying on foot [177].

Isidora Vujcic et al., in her study on Medical Faculty, Beograd has involved 459 students. In the end the prevalence of Low Back Pain was 75.8%. Low Back Pain has her affect on daily life activity. 14.6% of students told that they had problems with sleep and 12% with walking [178].

Camille Tavares et al., in her study has taken 629 students from Medical University, Brasil. She notices tha the prevalence of Low Back Pain was 81.7%. The overage of pain intensity was 4 and 20.5% of students has reported that Low Back Pain has affected their social activity. 33.1% of students has reported that Low Back Pain has affected their physic activity and 29.2% their academic activity [179].

M Mierzejewski et al, in his study relised on Edmonton, Canada has involved 462 physiotherapists. The prevalence in this study was 49.2% and 55.4% of physiotherapists has reported minimal disability. Also, the study has shown that the physiotherapists have a high prevalence compare with the general population on Canada with 27% [180].

Leah Jane Nyland et al., in her study has involve 250 students of physiotherapy in Australia. The results of this study were with a prevalence 69% [181].

Nupur Aggarwal et al., has study the prevalence between the colleagues at Medical University, Dehli India. They have taken at their study 160 students and they notice 47.5% of prevalence between them about Low Back Pain [182].

Mustafa Ahmed et al., has study 232 students of Private Medical Colleges, Malaysia. The prevalence was 65.1% [183].

Asdrubal Falavigna et al., has compare the prevalence of Low Back Pain between medical students and physiotherapeutic students. He has taken in his study 416 students. The prevalence at physiotherapeutic students was 77.9%. This prevalence was higher than the prevalence of medical students [184].

Grace O. Vincent-Onabajo et al., has make a study with 3

universities at Nigeria with 290 students. The students were all physiotherapist. The prevalence was 45.5% [185].

Beatriz Minghelli et al., has involve in her study 752 teenagers and students on portogalia. The prevalence of this study about Low Back Pain was 62.1% [186].

Peter A. Leggat et al., in his study in Australia involved 145 students of occupational therapy. The prevalence of this grupp was 64.6%. Low Back Pain has affected the daily life activity of students with 38.8% [187].

Fahad Abdullah et al., has taken in his study 1163 students. The prevalence was 56.6% and 90.3% of students has minimal disability [188]. About my study I notice minimal disability on 60% of students.

Tim Mitchella et al., has involved in his study 897 student nurses and the nurses who works to identify the prevalence. The prevalence was 79%. 60% of students has reported low activity caused by Low Back Pain [189].

P. A. Leggat et al., in his study has analised neuromuscular prevalence and Low Back Pain prevalence. 261 medical students in Australia are taken for the study. The prevalence was 51.6% [190].

Sheikh Sabuj has studied the prevalence of Low Back Pain in a group with 80 students and the result was 93.7% [191].

Salmina Magdalena Burger in her study relised on Australia with 208 physiotherapeutic students has reported a prevalence on 40% [192].

Conlusions

This study in the end concludes that Low Back Pain has a high prevalence between physical therapists in Albania. This group of students has a high risk for occupational problems and disabilities. The causes of Low Back Pain on this student have remain to be studied.

Recommendation

Starting from the results and from the conclusiones we can recommande:

- Students should try to have a high physical activity and to reduce non-productive (passive) hours
- Students should have a good posture on the sitting during their reading/learning
- Students should take care after every Low Back Pain stop the aggravation of the situation
- The pshysiotherapeutic students shpuld apply physical therapeutic procedures on their self

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