

Life Is Short,So Heels Should Be:Incidence Of Sciatic Pain Among Girls, Wearing High Heels

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Abstract

High-heeled shoes are high up in modern girl’s era and are used in different occasions as well as with more informal and formal clothing. Some kinematic changes occur with high heels on daily basis. Due to lordotic effects of high heels on the lumbar spine area, physiotherapist recommends not to use high heels on daily basis. Wearing High heels has great effects on body posture, spine, pelvic tilt, core body muscles, knee joint, ankle joint and metatarsals heads.As the high heels having lots of impact on the body, in addition to that there is lack of work on sciatic pain associated with high heels. This problem caused leg pain in females. So the major objective of our study is to determine the prevalence of sciatic pain in girls who wears high heels. Cross sectional study was conducted on 200 GCUF girls, following inclusive criteria of study.RMQ modified questionnaire was used using random sampling Technique, .duration, frequency, type of heel and height of heel and sciatica symptom were included in questionnaire. Statistical analysis was done using SPSS-23. Frequency distribution of all questions was determined and correlation of selected variables with intensity of pain

and SLR was evaluated. There was significant (p=.000) negative correlation (-.326) of SLR with intensity of pain. It was concluded that duration, frequency, type and height of heels has positive correlation with pain pattern of sciatica. While straight leg raise show negative correlation with the symptoms, subject have presented wearing high heels. So it was concluded that high heels contribute to increase in subject symptoms of getting sciatica as there will increment in each variable.

Introduction:

The novel purpose of the shoe was to keep the foot safe and comfortable while walking, so in early

days, the main focus of shoe was on the functional aspects of the shoe. But now, high heels more like fashion, increase height, or conform to the modern trend .in a survey 37% and 78% women of America and England wore high heels in daily routine respectively .

However; the negative side effects of wearing high heels include an increased risk of falling. Increased risk of foot, tibia, and fibula fracture .increased peak loads on the patella and changes in the distribution of foot pressure(Baaklini et al., 2017).Can high heels be a part of disaster in life? Some known kinematic changes occur with high heels walking on daily basis. Individuals who are facing low back pain are informed by physio therapist not to use high heels because of the lordosis occurrence that have effect on the lumbar vertebrae . Wearing High heeled shoes has great effects on body posture, spine, pelvic tilt, core body muscles, knee joint, ankle joint and metatarsals heads.In order to be able to adapt to surface irregularity, to tolerate the weight of the body and to resist ground reaction forces, the foot includes three foot arches (both inner and outer longitudinal and transverse arch). They serve as dampers to share out the load on the foot to three regions: the sixty percent of the load on calcaneus , the eight percent of the load on midfoot) , the forefoot, chiefly the fifth and the first head of metatarsal bear thirty two percent pressure. The shoe support foot should be worn to enhance its function, rather than interfering with passing information from movement required during walking. Shoe can often change the ultimate configuration of the foot.(Iunes, VV, CBA, FA, & HS, 2008a)

58% of high-heel shoe wearers complain of low back pain and 55% feel inconvenienced by heel heights between 6 and 9 cm, which might result from increased lumbar curve.However, contrary to this understanding, Russell et al, reported that high-heeled shoes did not influence lumbar lordosis in a stationary standing posture. Despite these results, the influence of heel heights on lumbar lordosis and thoracic kyphosis remains controversially discussed especially during gait. Hence 59% of women wore shoes for one to eight hours in a day. Some women wore them for more than ten hours constantly per day (Han, D. (2015). Some statistics of wearing high heeled shoes in women according to spine institute of health was that 28% women never wore heels and 72% wore. University of Texas science center at Tyler (hazards of high heels , 2007) reported the statistic of occasional wearing high heels which includes that 77% women wore them for special occasion , 50% wore them on parties , 33% wore them while dancing and 31% wore them to work. High heels cause postural disarrangement in the body.(*"How High Heels Affect Your Body," n.d.*)Girls are fascinated towards heels because of some reasons like; heels make them appear more feminine. Because it exaggerates the body curves hence the women personality. Heels are office dress policy in some places. Professionally it is a part of dressing (i.e.) air hostess, doctors, teachers usually wear them .in some countries they are culturally ingrained, women wear them just for representing their culture. Some women wear high heels to increase their height and by wearing them they symbolize power. High heels are introducing catastrophe in the whole body alignment. Physiotherapists often use postural assessment as part of a patient's musculoskeletal assessment. therapists often tell people who have low back pain not to wear high heels because heels produces a lordosis on the lumbar region. By wearing high heels stenosis can occur in which structural dysfunctions obstruct room in foramina, the compression of sciatic nerve can stenosis in foramina a lower back can grounds shooting pain, in addition to numbness, tingling sensation weakness, spasm, cramping and pain that radiates to buttock and down to the leg sciatica. (Laser spine institute) .

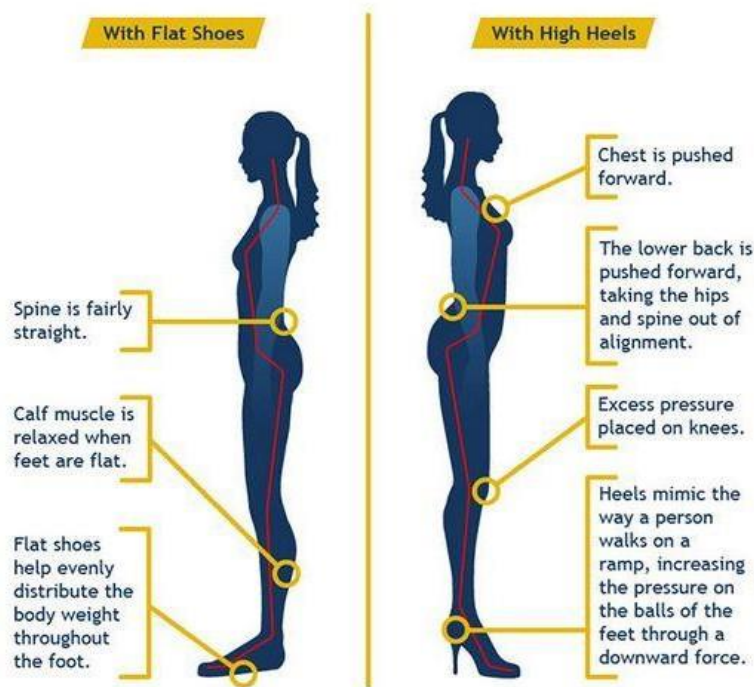


Fig 1.1

(*"The real reasons women wear heels," n.d.*)

It is nasty habit to wear high heeled shoes. Straightening of the lumbar spine, shifting of the head back and increased pressure on the feet are the result of usage of heel. They may even cause spasm related to neuropathy. Any woman who has experienced standing, walking, dancing, or leaning on high heels at night can feel the pulsating, tightening, numb pain caused by heels.

(*"The real reasons women wear heels," n.d.*) The lower portion of the body tilts forward to recompense for the balance and the upper part of the body leans backwards. This will destroy the spine normal S-shaped curve wearing high heels will lead to lumbar flattening, head and thoracic posterior (posterior) shift. This mal alignment of the spine causes it to turn, resulting in overuse of muscles and back pain. High heeled shoes are more popular than flat-heeled shoes and are often used with formal dresses for women. The aim of one research was to evaluate , effect of heel height on lumbar movement and risk of low back disorder in women.(Iqbal, De, Mishra, Maulik, & Chandra, 2012)

Now a days, fashion is on its peak, wearing high heels is believed to be an integral part of fashion. Women wear high heels to increase their attractiveness toward others .however some known kinematic changes occur at the lower appendicular while walking on sheel .As Lee and his

colleagues explained, flexion of knee was larger from the initial in touch with ground while the position in the high-heel walk compared to the low-heel walk, but lesser in the toe off and swinging phase of foot. This results in side effects, one of which is sprained ankles in sagittal plane. (lee *et al*, 2001).Opila *et al* suggested thatThe knee flexion was the initial compensation for the, but as time goes on the thigh muscle fatigue and other compensation could also arises. (caspo *et al*, 2010).Han, D also supported that. Sometimes wearing heels can cause paravertebral muscles abnormalities, in exchange for flat shoes will be very painful. It over-stretches the triceps surae and may cause planar fasciitis, heel pain and leg pain.(Han,D 2015). Hence, all the previous study on high heel shoes showed that it had negative effects on the body from top to bottom. In other opinion.. In other words, high-heeled shoes and back pain go together; it will put your back in an abnormal posture and the malalignment. This will worsen the problem of back pain. It May increase disc herniation, or aggravate piriformis syndrome, causing or aggravating sciatica, nerve root compression in neural foramen. Regular use of shoed will lead to mentioned anomalies.Zollner also worked and stated that. Habitual high heel wearers can impair muscle efficiency, cause muscle fatigue, and increase the risk of stressful injuries. However, returning back to flat shoes can be very painful. It over-stretches and lengthen the triceps surae and may initiates planar fasciitis, most leg pain(zollner *et al*, 2015). In One new recent study author has experimented that habitual high heels contribute to the fiscale strain in the muscles of lower leg portion and muscle fiber activation was also more in high heel wearer (Cronin *et al*, 2012). Musculoskeletal outcomes had been related to the high heels in a systematic review of study which included the osteoarthritis and hallux valgus(.Barnish, M. S., &Barnish, J. (2016). however contrary to this understanding franklin *et al* ,reported that cause of low backache was abnormal spinal curves , and pain in leg , due to increased weight having on the toes . it was find that no changes occur in electromyography , of quadriceps while standing on heels . Decrease in anterior pelvic tilt, sacral basal angle and lumbar lordosis in lumbo-pelvic region when patients with increased heel height were compared with zero heel height in musculoskeletal analysis was found . (Franklin *et al*, 1995)

OBJECTIVES

- Our aim of conducting this research is to find out the prevalence of sciatic pain in girls who wears high heels.
- To find out the correlation of sciatic pain with high heels
- To make people aware of consequence of wearing high heels.
- To determine the prevalence of sciatic pain in girls who wears high heels.

MATERIAL AND METHODOLGY

For the proposed study, exploratory measures were conducted using data collected from young female participants. The materials and methods used in this study are explained below. Our study was conducted in government college university of Faisalabad which consisted of more than 50 departments and different kind of program i.e. regular program, weekend programs and distance learning with student strength of 20,000 in regular programs. Our study involved the girls of regular program who are 10,000 approximately. This cross-sectional study used the data from university girls from government college university Faisalabad within our study duration. It was involved subject age less than thirty which accomplished study on weight , height , presence of low back ache ,high heels variables and symptoms of sciatica. The subjects had no history of spine, hip, or knee injury or disease. No female participants reported about any musculoskeletal and neuromuscular dysfunctions that resist the range of lower appendicular , could make the high heel wearing painful.. every participant provide consent on risk and benefits of study ,agreeing to take part in the research study. Table 1 shows a list of characteristic of the participants in inclusive criteria.

Demographic data to be considered

Variable	Limits
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Age(yrs)	19-30
Weight(kg)	40-70
Height(ft)	4.5-5.5

Table 1

Study design

cross sectional study was used in order to check for the sciatica prevalence among girls whose frequency of wearing high heels per week and for years was considered in questionnaire.

Setting

university girls' students were targeted for our study in government universities of Faisalabad. within defined duration

Duration of study

study time was accomplished within 6 month form approval of study and data collection to thesis writing following the protocol provided by the university website.

Sample size

With the help of 5% sample of population and expert opinion our cross sectional study including 200 girls of regular program of GCUF who will fulfill our inclusive criteria mentioned below. All departments' girls meeting criteria, were included in our study .first 200 girls who used high heels in their routine provide us with data.

Sampling technique:

Simple random sampling will be incorporated for data collection. We have a complete list of sample units or participants (sample base), and we randomly chose a personal study to evaluate the prevalence of sciatica with complicated, probabilistic sampling of high-heeled shoes worn by the subject because of the representativeness of the sample is crucial. Use a random number table. Heterogeneity is found in our sample and this heterogeneity must also be reflected in the sample.

Sample tool

Ronald modified questionnaire can be used as a reliable tool in the evaluation of the functional level of females with lumbar pain and past lumbar herniation Significant correlations between the RMQ and the other two questionnaires were found. $RQ = 0.89$, $p < 0.001$, RMQ-PF (SF-36); $r = -0.88$ $p < 0.001$. Chronbach Alpha shows a value of 0.94 (0-1 level). The difference between the scores of the three questionnaires is within 95% of the agreement. The average RMQ score is 10% higher than RS and PF (SF-36). (Albert, Jensen, Dahl, & Rasmussen, 2003).

This RMQ questionnaire is easy and fast to fill . it is reliable and valid to evaluate the quality of life and functional status . it is recommended and internationally used both in clinical practice and for research purposes.

Statistical tool

we are going to check for prevalence of sciatic pain in high heels wearers so it's a frequency distribution of our target subjects and statistical analysis will be performed by using **SPSS-23**. It is a cross sectional study which is used to measure the prevalence of specific diseases or a risk factor in a population at a particular time. It is also used to find a frequency distribution of any disease.

Sample selection

Sampling is about selecting a subset of a population from a statistical population to estimate the characteristics of the entire population. Girls population in all regular programme in GCUF is 10000 approximately. And 5% of the population is 500. So sample size of our study will be 200 due to the lack of time.

Inclusive criteria

It includes those girls, who are students of government university Faisalabad and fulfilling that requirements.

- under age of 20-30 years,
- With height of 5.5 feet or less.
- Wore heels from 2.5-4 inches.

Exclusive criteria

Exclusion criteria are

- Past or present musculoskeletal condition, lower extremity, dysfunctions, and apparent weakness in the muscle.
- Male,
- Female above 30.
- Congenital deformity
- Acquired deformity
- Any traumatic injury

Data collection procedure

Method of Data collection through questionnaire was used. Questionnaire related to selected topic was developed by modifying the RMQ. Its validity was $r = 0.89$ (Albert et al., 2003). Our tools for data collection consisting of some options of questions in four likert scale and some in 2 likert scale. Once the questionnaire formed, questionnaires were delivered to the potential respondents in the classes located in government college university Faisalabad. In order to minimize the sample selection bias, the researcher distributed the questionnaires to the potential respondents with random sampling technique. Questionnaire tool developed, considering the basic variables i.e.

- Sciatic pain
- Aggravating factor
- Relieving factor
- Length of heels
- Duration of heels in a day
- Frequency of heels

Each respondent was asked to tick the concern option as well as filling out a questionnaire rate their pain. The study took place from September to January 2018. Ethical approval was obtained.

STATISTICAL ANALYSIS

RONALD modified questionnaire with some modification was used for collecting data and getting information from target subjects. its validity was 0.89 . it included 24 questions with demographics including (age, height , weight and mental stress)Study included 200 sample subjects with inclusive and exclusive criteria. All the subjects consent was under taken before collecting data. Subjects were provided with guideline and instructions about questionnaire all confusions and terminologies were cleared before filling. ALL subjects included in this study fill the questionnaire GCUF. Girls were chosen from different departments meeting the criteria on random sampling technique. SPSS-23 was used for statistical analysis purposes. so data was entered in SPSS by using different coding to the questions .

Analysis was performed for frequency distribution and to find the correlation among different variables so frequency distribution along with percentage of each question was analyzed. table and graphic presentation had been used to interpret the result and findings to reach the final conclusion. to reach the final conclusion, variables like pain on lateral and posterior side, painful back , numbness on lateral side of leg, physical activity and timing of pain correlation was find with SLR and . Variable like height, weight, stress, frequency of wearing of high heels, inches of high heels and in day duration of wearing of high heels correlation with intensity of pain

Demographics

In demographics we asked about age, height, weight and mental stress of subjects. There was 200 sample size of our study; we filled our questionnaire from 200 students of random sampling in GCUF.

- 1) What is your age?

Table 2.1 classification of age

Age	Frequency	Percent
18-24	143	71.5
25-30	57	28.5
Total	200	100.0

Table 2.1 shows there was 200 sample size in which age related question was asked by subjects , there were 2 group of ages one was 18-24 and second was 25-30 with frequencies of 143 and 57 respectively .

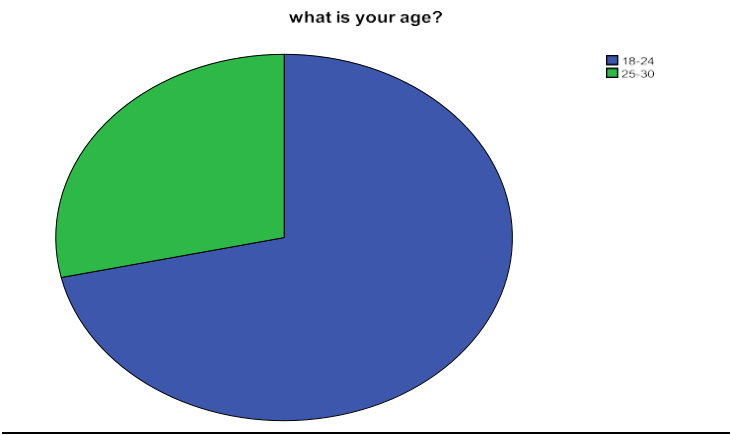


Figure 2.1

2) What is your height?

Table 2.2 classification of height

Height	Frequency	Percent
4.5-5	54	27.0
5.1-5.5	146	73.0
Total	200	100.0

Table 2.2 shows there was 200 sample size , age related question was asked by subjects , there were 2 groups of height one was 4.5-5 feet and second was 5.1-5.5 feet with frequency of 54 and 146 respectively .

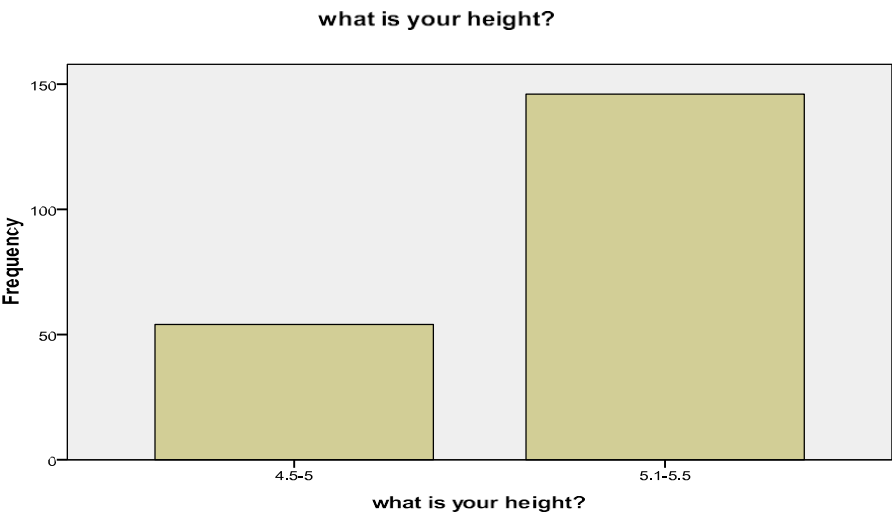


Fig 2.2

3) How much is your weight?

Table 2.3 classification of weight

Weight	Frequency	Percent
40-49	89	44.5
50-59	86	43.0
60-70	24	12.0
>70	1	.5
Total	200	100.0

Table2.3 shows there was 200 sample size , weight related question was asked by subjects , there were 4 groups of weight one was 40-49 kg ,second was 50-59 kg , third was 60-70 kg and fourth was above 70 with frequencies of 89,86,24,1 respectively .

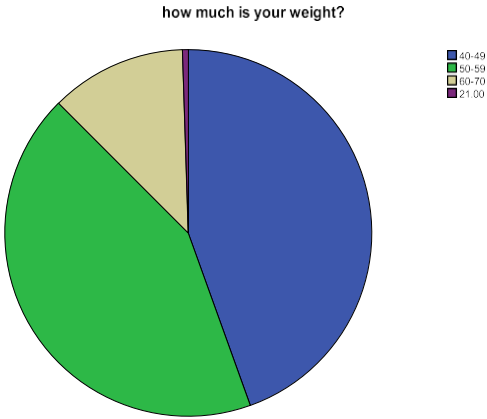


Figure 2.3

4) Mental stress

Table 2.4 classification of metal stress

Mental stress	Frequency	Percent
No	175	87.5
Yes	25	12.5
Total	200	100.0

Table 2.4 shows there was 200 sample size, asked about mental stress of subjects , in question YES and NO option was present with frequencies of 25 and 175 respectively .

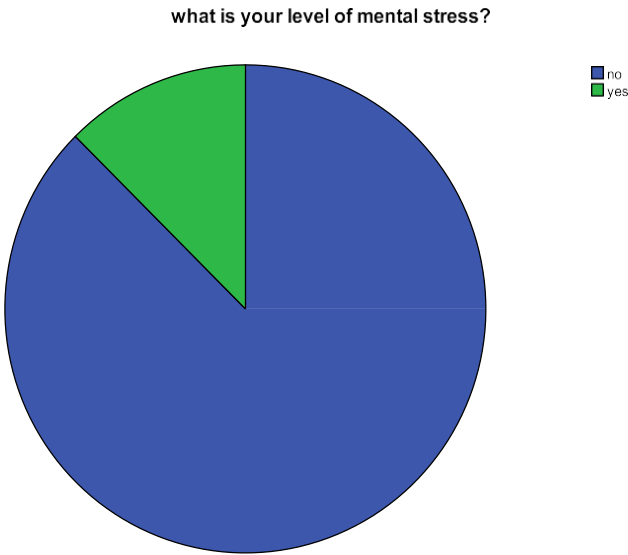


Fig 2.4

(B)

Frequency variables

Q#1) for how many years you are wearing high heels?

Table 3.1
Year’s classification

Years	Frequency	Percent	Mean	Std. Deviation
2year	47	23.5		
4year	74	37.0		
6year	56	28.0	2.2750	.95073
above 6	23	11.5		
Total	200	100.0		

table 3.1 shows there was 200 sample size , question was asked in questionnaire about how many years you wear high heels , showed mean 2.2750 and standard deviation 0.95073.4 options were present in question that was 2 year , 4 year, 6 year and above 6 with frequencies of 47, 74,56,23 respectively .



Fig 3.1

Q#2What is your frequency of wearing high heel?

Table 3.2

Classification of frequency of wearing heels

Frequency	Frequency	Percent	Mean	Std. Deviation
Never	5	2.5		
3 days	120	60.0		
5 days	60	30.0	2.4250	.66829
7 days	15	7.5		
Total	200	100.0		

Table 3.2 shows there was 200 sample size, question was asked about frequency of wearing high heels. With mean 2.4250 and standard deviation 0.66829. There were 4 options that was never , 3 days, 5 days , 7 days with frequency of 5,120,60,15 respectively .

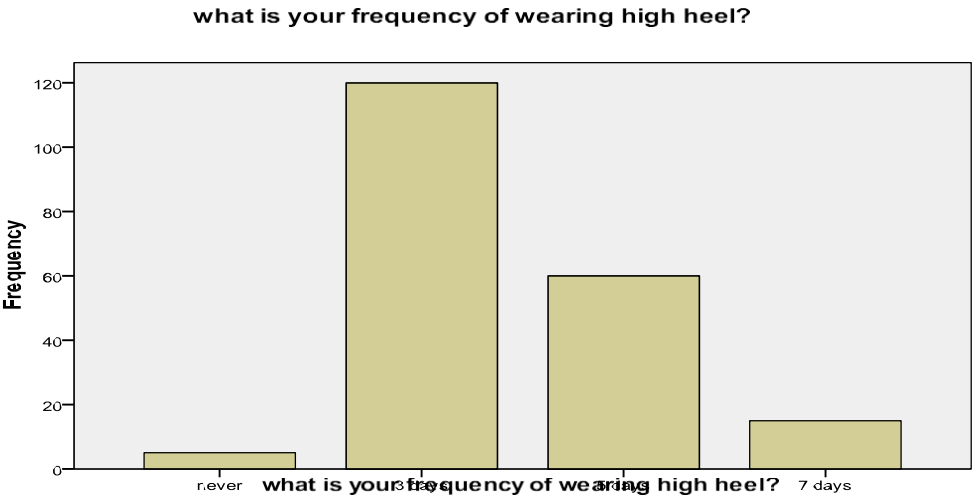


Fig 3.2
Q#3) usually you wear which type of heel?
Table 3.3

Type of heels classifications

Type of heel	Frequency	Percent	Mean	Std. Deviation
Stiletto	29	14.5		
Pump	44	22.0		
Blok	13	6.5	3.0600	1.17186
Wedge	114	57.0		
Total	200	100.0		

Table 3.3 shows there was 200 sample sizes. Question was asked about type of heel. Mean was 3.0600 and standard deviation was 1.17186. There were 4 options for respondents like stiletto, pump, block and wedge with frequency of 29, 44, and 13,114 respectively.

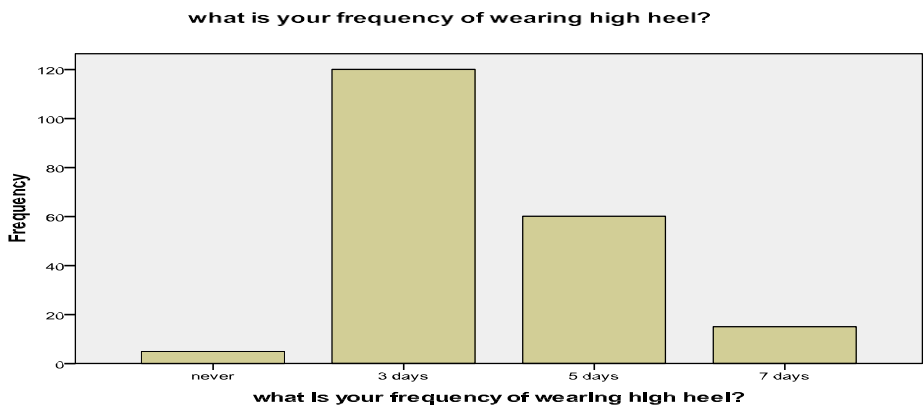


Fig 3.3

Q#4) How many inches of your high heels?

Table 3.4

Height of heels classification

Height of heel	Frequency	Percent	Mean	Std. Deviation
2-3	121	60.5		
3-4	56	28.0		
4-5	21	10.5	1.5200	.72264
above 5	2	1.0		
Total	200	100.0		

Table 3.4 shows there was 200 sample size with mean 1.5200 and standard deviation 0.72264 .question was asked about height of heel , there were 4 options that were 2-3 inches , 3-4 inches , 4-5 inches and above5 inches with frequency 121, 56,21,2 respectively .

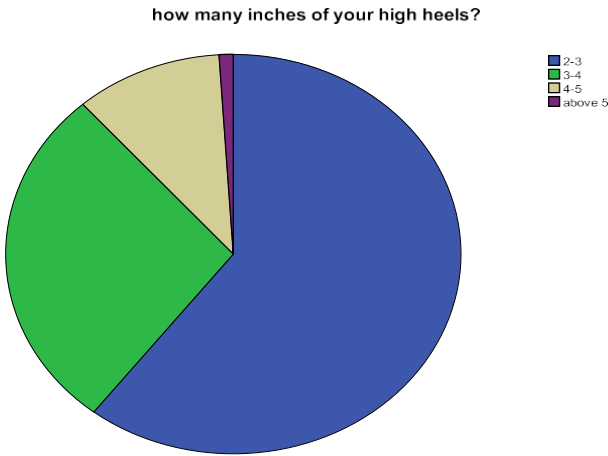


Figure 3.4

Q#5) How long you wear high heels in a day?

Table 3.5

Hourr classifications of wearing high heels in a day

Hours	Frequency	Percent	Mean	Std. Deviation
4hour	140	70.0		
6hour	49	24.5		
8hour	7	3.5	1.3750	.65308
above 8hour	4	2.0		
Total	200	100.0		

Table 3.5 shows there was 200 sample size with mean 1.3750 and standard deviation 0.65308. Question was asked about how long you wear high heels. There was 4 options for respondents that were 4 hours, 6 hours, 8 hours and above 8 hours with frequency of 140, 49, 7, 4 respectively .



Chart 3.5

Q#6) Pain is felt on lateral and posterior side of leg?

Table 3.6

Symptoms of typical sciatic pain classification

Pain	Frequency	Percent	Mean	Std. Deviation
No	83	41.5		
Yes	117	58.5	1.5850	.49396
Total	200	100.0		

Table3.6 shows 200 sample size with mean value 1.5850 and standard deviation 0.49396. question was asked about pain pattern respondents gave answer , YES and NO with frequency of 117 and 83 respectively .

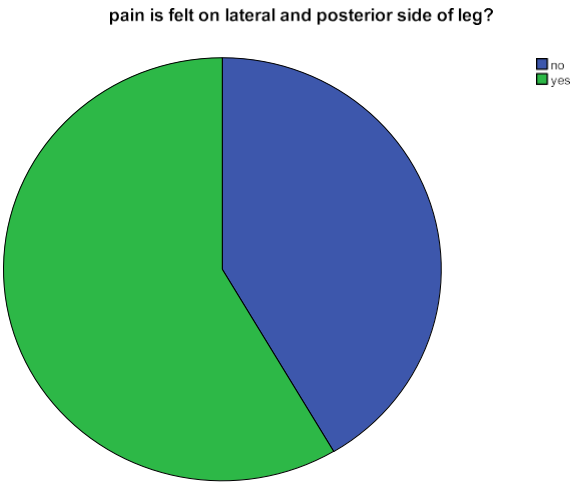


Figure 3.5

Q#7)I can stand for short period of time?

Table 3.7				
Classification of standing with pain				
Can stand	Frequency	Percent	Mean	Std. Deviation
No	88	44.0		
Yes	112	56.0	1.5600	.49763
Total	200			

Table 3.7 shows there was 200 sample size with mean 1.5600 and standard deviation 0.49763. Question was asked about how long you stand. Option was YES and NO with frequency of 112 and 88 respectively.



Figure 3.7

Q#8) My back is painful?

Table 3.8 Backache classifications				
Backache	Frequency	Percent	Mean	Std. Deviation
Never	29	14.5	2.1350	.70659
Sometimes	124	62.0		
Seldom	38	19.0		
all the time	9	4.5		
Total	200	100.0		

Table 3.8 shows there was 200 sample size with mean 2.1350 and standard deviation 0.70659. Question was asked about back pain. There was 4 options for respondents Never, Sometimes, Seldom , All the time with frequencies 29, 124,38,9 respectively.

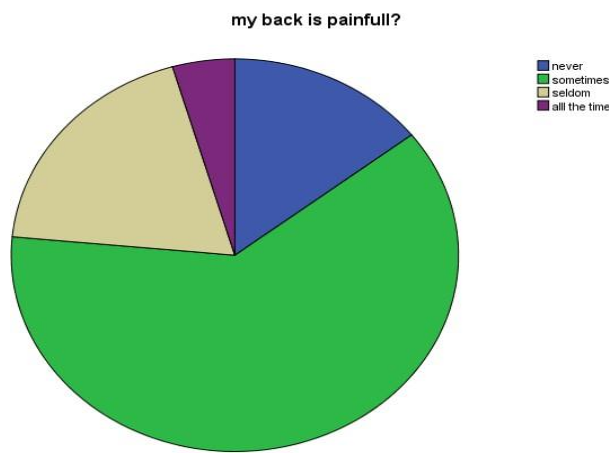


Figure 3.8

Q#9) Stair climbing increases my pain?

Table3.9
Classification of pain increases with stair climbing

Pain	Frequency	Percent	Mean	Std. Deviation
No	78	39.0		
Yes	122	61	1.6150	.49801
Total	200	100.0		

Table 3.9 shows there was 200 sample size with mean 1.6150 and standard deviation 0.49801.question was asked about stair climbing increasing pain. YES and NO option were present with frequency of 122 and 78 respectively.

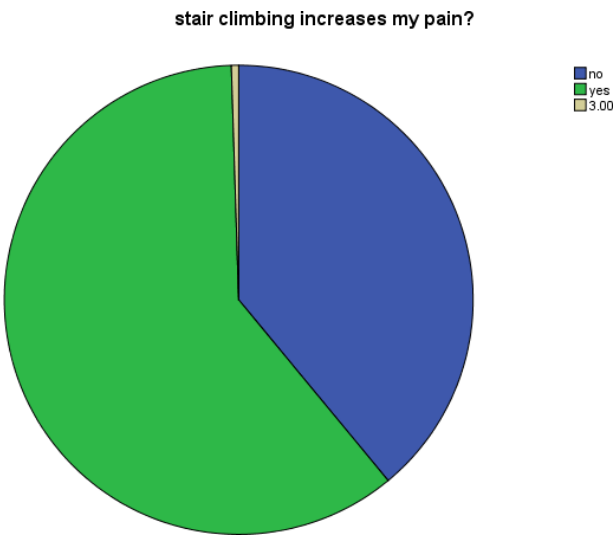


Fig 3.9

Q#10)I sleep throughout night?

Table 3.10				
Classification of sleep in night				
Sleep	Frequency	Percent	Mean	Std. Deviation
No	97	48.5		.
Yes	103	51.5	1.5150	.50103
Total	200	100.0		

Table 3.10 shows there was 200 sample size with mean 1.5150 and standard deviation 0.50103.question was asked about sleep of subjects with pain . YES and NO option were there with frequency of 103 and 97 respectively.

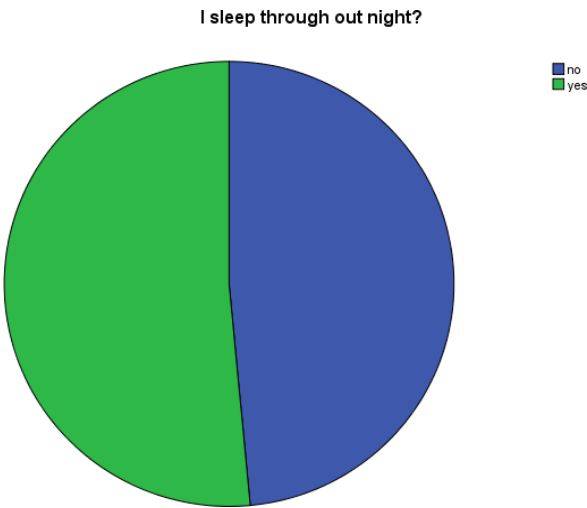


Figure3.10

Q#11)I can sit on chair as long as I like?

Table 3.11
Classification of sitting time

Pain in sitting	Frequency	Percent	Mean	Std. Deviation
No	93	46.5		
Yes	107	53.5	1.5350	.50003
Total	200	100.0		

Table 3.11 shows there was 200 sample size with mean 1.5350 and standard deviation 0.50003. question was asked about sitting on chair with option YES and NO , frequencies were 107 and 93 respectively .

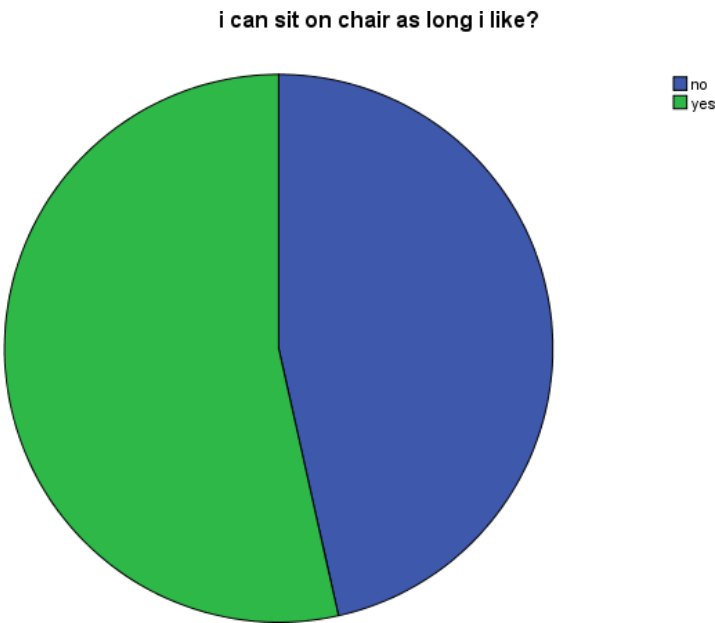


Figure3.11

Q#12) Numbness is present on lateral side of leg?

Table 3.12
Classification of numbness

Numbness	Frequency	Percent	Mean	Std. Deviation
No	100	50	1.6000	1.53354
Yes	100	50	50	99.5
Total	200	100.0	100.0	

Table 1.16 shows there was 200 sample sizes with mean 1.6000 and standard deviation 1.53354. Asked about symptoms of sciatica with yes or no option, with frequencies of 100 each

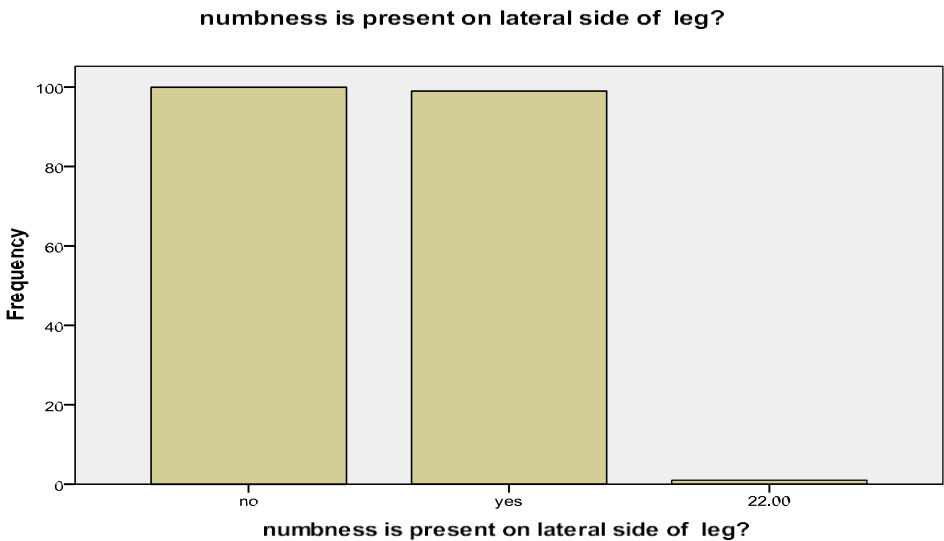


Figure 3.12

Q#13) Dull pain in my buttocks?

Table 3.13
Classification of dull pain buttock

Buttock pain	Frequency	Percent	Mean	Std. Deviation
No	106	53.0		
Yes	94	47.0	1.4700	.50035
Total	200	100.0		

Table 3.13 shows there was 200 sample size with mean 1.4700 and standard deviation 0.50035. question was asked about buttock pain with option YES and NO , frequencies distribution of these options were 94 and 106 respectively .

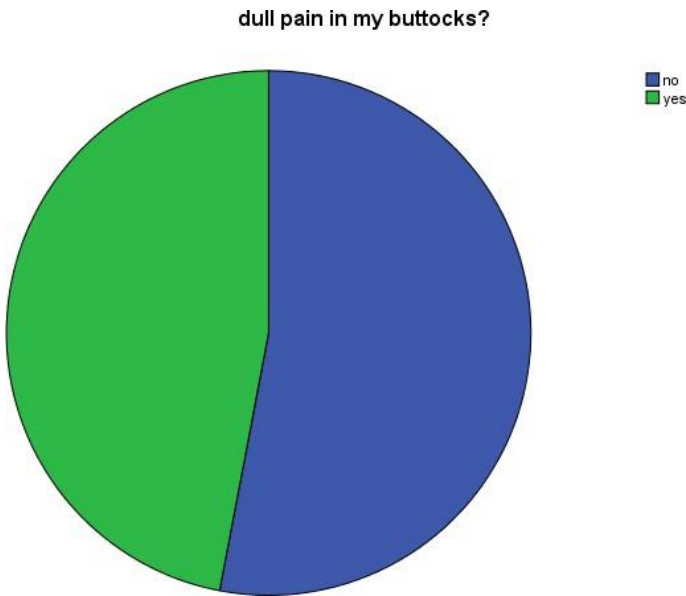


Figure3.13

Q#14) I feel fatigue in my legs?

Table 3.14
Classification of fatigue in legs

Leg fatigue	Frequency	Percent	Mean	Std. Deviation
one leg	31	15.5		
two leg	121	60.5		
Never	48	24.0	2.0850	.62428
Total	200	100.0		

Table 3.14 shows there was 200 sample size with mean 2.0850 and standard deviation 0.62428.question was asked about fatigue in legs with options one leg, two legs nad never . frequency distribution of these option were 31,121,48 respectively .

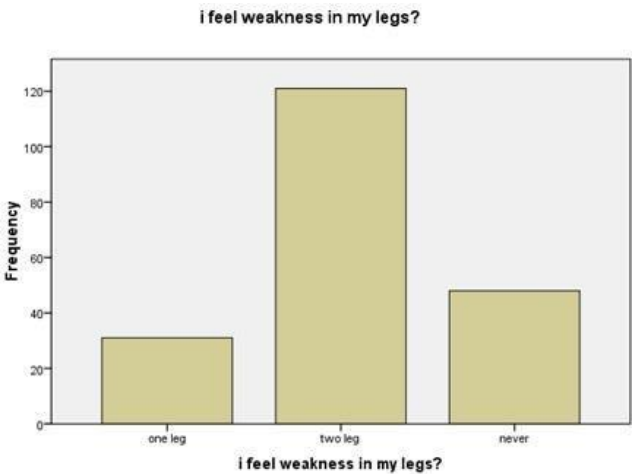


Fig 3.14

Q#15) in the past on average pain was bad?

Table 3.15

Past pain classification

Pain in the past	Frequency	Percent	Mean	Std. Deviation
No	150	75.0		.
Yes	50	25.0	1.2500	.43410
Total	200	100.0		

Table 3.15 shows there was 200 sample size **mean** 1.2500 and standard deviation 0.43410.question was asked about pain worse in past with option YES and NO .frequency distribution were 50 and 150 respectively .

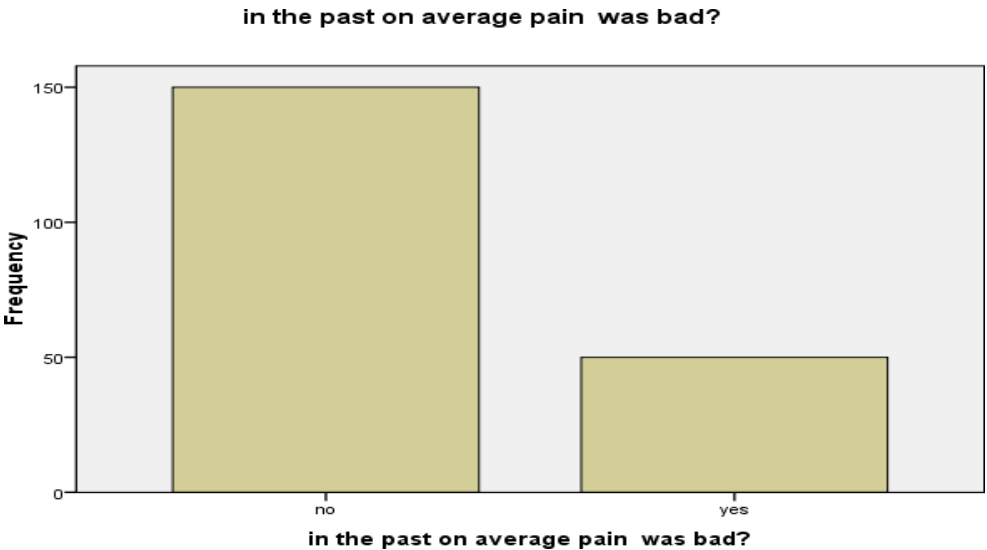


Fig 3.15

Q#16) Physical activities make my pain worse?

Table 3.16

Options for physical activity with pain

Pain with physical activities	Frequency	Percent	Mean	Std. Deviation
No	80	40.0		
Yes	120	60.0	1.6000	.49113
Total	200	100.0		

Table 3.16 table shows there was 200 sample size with mean 1.6000 and standard deviation 0.49113.question was asked about physical activity make pain worsen with YES and NO option .frequency about these option were 120 and 80 respectively .



Fig 3.16

Q#17) I am more irritable and bad tempered with pain?

Table 3.17

Options for bad tempered with pain

Irritable with pain	Frequency	Percent	Mean	Std. Deviation
No	80	40.0		
Yes	120	60.0	1.6000	.49113
Total	200	100.0		

Table 3.17 shows there was 200 sample size with mean 1.6000 and standard deviation 0.4911question was asked about irritabile with apin with YES and NO option . frequency of respondents were 120 and 80 respectively .

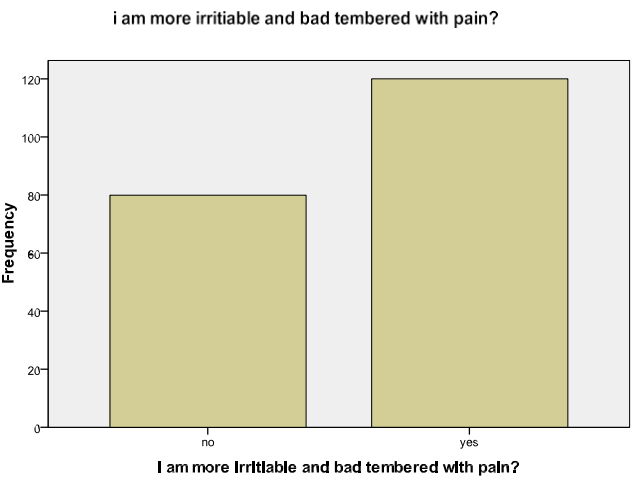


Fig 3.17

Q 18) I have to hold something to get out off chair?

Table 3.18

Hold something	Frequency	Percent	Mean	Std. deviation
No	132	66.0		
Yes	68	34.0	1.3400	.47490
Total	200	100.0		

Table 3.18 shows there was 200 sample sizes with mean 1.3400 and standard deviation 0.47490. Question is asked about hold something to get off the chair. With option YES and NO.frequency of respondents were 68 and 132 respectively.

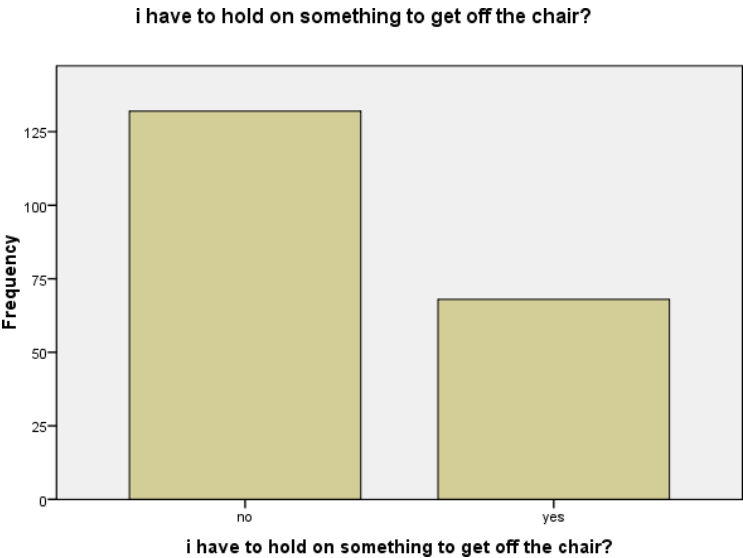


Fig 3.18

Q #19.I stays longer on bed with pain?

Table 3.19

Stay longer on bed	Frequency	Percent	Mean	Std. deviation
No	141	70.5		
Yes	57	28.5	1.3050	.48285
Total	200	100.0		

Table 3.19 shows there was 200 sample size with mean 1.3050 and standard deviation 0.48285. question was asked about stayed on bed with pain with option YES and NO. Frequency of respondents was 57 and 141 respectively.



Fig 3.19

Q# 20) My pain is aggravated by?

Table 3.20
Classification of pain aggravation

Pain is aggravated	frequency	Percent	Mean	Std. deviation
Standing	56	28.0		
Sitting	25	12.5		
stair climbing	62	31.0	2.6000	1.1734
Running	57	28.5		
Total	200	100.0		

Table 3.20 showed there was 200 hundred sample size with standard deviation 1.17341 and mean 2.6000 and showing the response of question about pain was aggravates by standing, sitting, stair climbing and running with frequencies were 56,25,62,57 respectively .

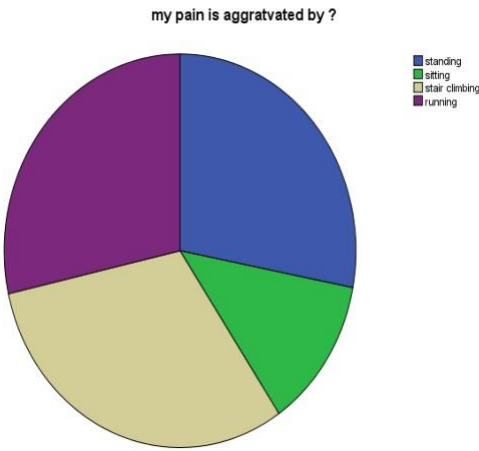


Fig 3.20

Q# 21) my pain is relieved by?

Table 3.21
Classification of pain relieved

Pain is relived	Frequency	Percent	Mean	Std. deviation
Rest	98	49.0		
wearing flat shoes	52	26.0		
Painkiller	14	7.0	1.9400	1.1326
Sleep	36	18.0		
Total	200	100.0		

Table3.21 shows the total sample size was 200 with mean1.9400 and standard deviation1.13261 of relieving of pain. It revealed that values of relieving of pain for rest, wearing flat shoes, pain killer and sleep for frequency were 98, 52, 14 and 36 and for percent are 49.0, 26.0, 7.0 and 18 respectively.

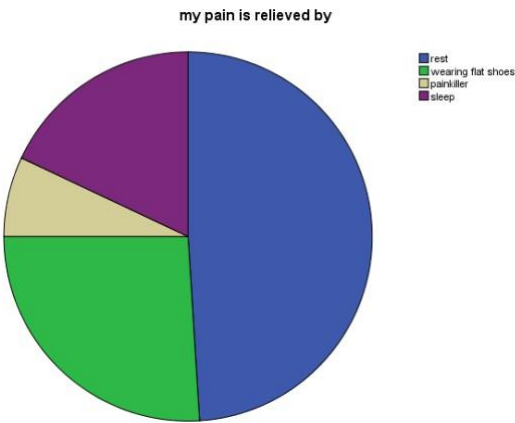


Fig 3.21

Q# 22) Timing of pain is?

Table 3.22
Classification of timing of pain

Timing of pain	Frequency	Percent	Mean	Std. deviation
Morning	10	5.0		
Evening	33	16.5		
all the time	14	7.0	3.4500	.93910
not specific	143	71.5		
Total	200	100.0		

Table3.22 shows the total sample size was 200 with mean3.4500 and standard deviation.93910 of timing of pain. It revealed that values of timing of pain for morning, evening, all the time and not specific for frequency are10, 33, 14and 143 and for percent are 5, 16.5, 7.0 and 71.5 respectively.



Fig 3.22

Q # 23) Intensity of pain is?

Table 3.23
Classification of intensity of pain

Intensity of pain	Frequency	Percent	Mean	Std. deviation
0-4	124	62.0		
5-8	76	38.0	1.3800	.48660
Total	200	100.0		

Table3.23 shows the total sample size was 200 with mean1.3800 and standard deviation .48660 of intensity of pain. It revealed that values of intensity of pain from 0-4 and 5-8for frequency were 124and76 and for percent are 62 and 38 respectively.

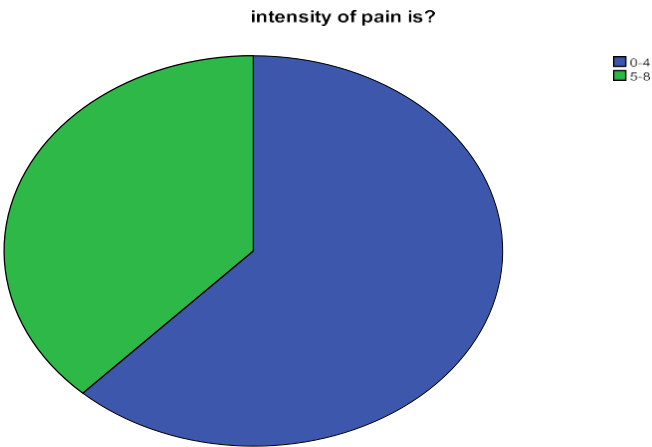


Fig 3.23

Q#24) SLR

Table 3.24
Classification of SLR

SLR	Frequency	Percent	Mean	Std. deviation
0-30	1	.5		
31-60	75	37.5		
61-90	124	62.0	2.6150	.49801
Total	200	100.0		

Table 3.24 shows the total sample size 200with mean 2.6150 and standard deviation .49801 of SLR value .It revealed that SLR values from 0-30, 31-60and 61-90 for frequency were 1,75and 124 and for percent were .5, 37.5 and 62.0 respectively.

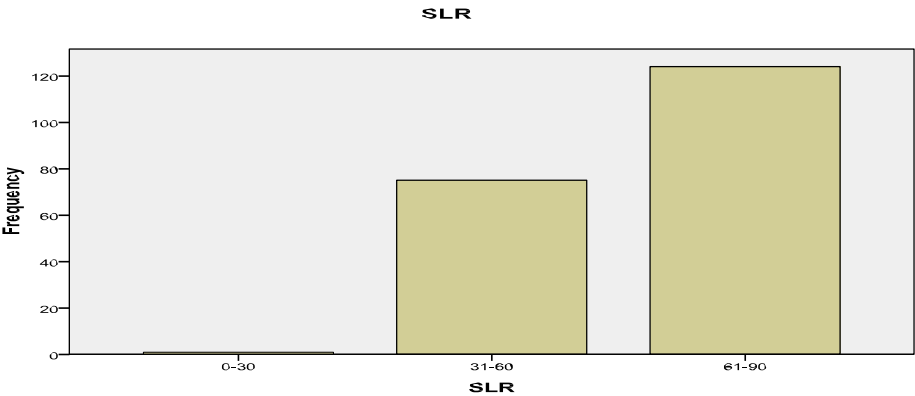


Fig 3.24

C

1) Correlation analysis of variables with pain intensity

Table 4.1

Correlations of height of subjects with intensity of pain

		Pain Intensity	Height?
Pain Intensity?	Pearson Correlation	1	.058
	Sig. (2-tailed)		.411
Height?	Pearson Correlation	.058	1
	Sig. (2-tailed)	.411	

Table 4.1 shows that there is insignificant and low positive correlation of intensity of pain with height of heels. It was concluded that when the intensity of pain increased the height of heels increased. The result of p value (.411, $p < 0.01$ levels) showed that , there was insignificant relationship . Result showed intensity of pain increases with high height.

Table 4.2

Correlations of weight with intensity of pain

		Weight	Pain Intensity
Weight	Pearson Correlation	1	.078
	Sig. (2-tailed)		.274
Pain intensity	Pearson Correlation	.078	1
	Sig. (2-tailed)	.274	

In table 4.2 it was revealed that there was insignificant and low positive correlation (.078) of intensity of pain with the weight of body. It was concluded that as the intensity of pain increased, weight of body increased. The result of p- value (.274 $p < 0.01$ level) showed that there was

insignificant low positive correlation. That in some girls’ intensity of pain increased as weight of body of female increases.

Table 4.3

Correlations of mental stress with intensity of pain

		Pain Intensity	Mental stress
Pain intensity	Pearson Correlation	1	-.047
	Sig. (2-tailed)		.511
Mental stress	Pearson Correlation	-.047	1
	Sig. (2-tailed)	.511	

In table 4.3 it is showed that there was insignificant negative correlation of intensity of pain with mental stress. It was concluded that as the intensity of pain increased mental stressed decreased. intensity of pain effected by mental stress , result of p-value .(.511, $p < 0.01$ levels) showed that value is insignificant for mental stress

Table 4.4

Correlations of wearing heel years with intensity of pain

		Years	Pain Intensity
Years	Pearson Correlation	1	.001
	Sig. (2-tailed)		.988
Pain intensity	Pearson Correlation	.001	1
	Sig. (2-tailed)	.988	

It revealed from the table4.4 that there is a insignificant and low positive relationship of intensity of pain with years of wearing high heels (.001). It concluded that when the intensity of pain increase, the years of wearing high heels did not have any great effect. The result of “P-value (.988, $P < 0.01$ levels)” showed the there is an insignificant

Table 4.5

Correlation of frequency of wearing high heels with intensity of pain

		frequency	Pain Intensity
Frequency	Pearson Correlation	1	.011
	Sig. (2-tailed)		.879
Pain intensity	Pearson Correlation	.011	1
	Sig. (2-tailed)	.879	

Table 4.5 shows that there was a insignificant and low positive relationship of intensity of pain with frequency of wearing high heels (.011). It was concluded that when intensity of pain increased frequency of high heels has minor effect on pain. The result of “P-value (.879, $P < 0.01$ levels)” showed the there was a insignificant correlation

Table 4.6

Correlations of inches of height of heels with intensity of pain

		Heel height	Pain Intensity
inches of high heels	Pearson Correlation	1	.107
	Sig. (2-tailed)		.132
Pain Intensity	Pearson Correlation	.107	1
	Sig. (2-tailed)	.132	

Table 4.6 showed that insignificant low positive correlation was present between intensity of pain and heel height. there was effect of heel height on intensity of pain. (.1). it was concluded that p-value (.132, $p < 0.01$) showed insignificant positive low correlation. when intensity of pain increased the heel inches increased.

Table 4.7

Correlation of pain intensity with heels wearing duration in a day

		Pain Intensity	Duration in a day
Pain Intensity	Pearson Correlation	1	.024
	Sig. (2-tailed)		.739
Duration in a day	Pearson Correlation	.024	1
	Sig. (2-tailed)	.739	

Table 4.7 revealed that there was insignificant ($p = .739$) low positive correlation (.024) of intensity of pain with the length of heel wearing in a day. result showed that intensity of pain increased with

longer wearing of high heels in a day. P-value(.739 , $p<.01$ levels)showed insignificant correlation .

2) Correlation of variables with SLR

Table 4.8

Correlation of sciatica symptoms with SLR

		Pain along leg	SLR
Pain along leg	Pearson Correlation	1	-.122
	Sig. (2-tailed)		.086
SLR	Pearson Correlation	-.122	1
	Sig. (2-tailed)	.086	

Table4.8 revealed that there was insignificant ($p=.086$) negative correlation (-1.22) of SLR with pain on lateral and posterior side of leg. Result showed that SLR value increases with decrease in pain on lateral and posterior side of leg. So it was concluded that there was insignificant negative correlation (.086, $p<0.01$ levels

Table4.9

Correlations of backache with SLR

		SLR	Backache
SLR	Pearson Correlation	1	-.037
	Sig. (2-tailed)		.601
Backache	Pearson Correlation	-.037	1
	Sig. (2-tailed)	.601	

Table 4.9 showed that there was negative insignificant ($p=.601$) negative correlation ($-.037$) of SLR with backache. It was concluded that value of SLR increased with decreased in backache. Results showed that p -value ($.601$, $p < 0.01$ levels) was insignificant and value of SLR increases with decrease in backache.

Table 4.10

Correlation of numbness in legs with SLR

		SLR	Numbness in leg
SLR	Pearson Correlation	1	-.117
	Sig. (2-tailed)		.099
Numbness in leg	Pearson Correlation	-.117	1
	Sig. (2-tailed)	.099	

It revealed from the table 4.10. That there was insignificant and negative relationship of SLR with numbness on lateral side of leg ($-.117$). It was concluded that when value SLR increased numbness on lateral side of leg decreased. The result of “ P -value ($.099$, $P < 0.01$ levels)” showed that there was an insignificant and negative relationships of SLR with numbness on lateral side of leg

Table 4.11

Correlation of pain with physical activity with SLR

		SLR	Pain with Physical activities
SLR	Pearson Correlation	1	-.078
	Sig. (2-tailed)		.272
Pain with Physical activities	Pearson Correlation	-.078	1
	Sig. (2-tailed)	.272	

Table 4.11 revealed that there was an insignificant and negative correlation of value of SLR with the physical activities (-0.78). It was concluded that when the value of SLR increased, the physical activity decreased. The result of “P-value (.272, $P < 0.01$)” showed the there is an insignificant correlation and value of SLR and physical activity were going voice of each other.

Table 4.12

Correlation of timing of pain with SLR

		SLR	Timing of pain
SLR	Pearson Correlation	1	-.004
	Sig. (2-tailed)		.958
Timing of pain	Pearson Correlation	-.004	1
	Sig. (2-tailed)	.958	

Table 4.12 showed that there was insignificant ($p=.958$) negative correlation ($-.004$) of SLR with backache. Result showed value of SLR increased with decreased in timing of pain. It was concluded that p value (.958, $p<.01$ levels) was insignificant.

Table 4.13

Correlations of intensity of pain with SLR

		Intensity of pain?	SLR
intensity of pain	Pearson Correlation	1	-.326**
	Sig. (2-tailed)		.000
SLR	Pearson Correlation	-.326**	1
	Sig. (2-tailed)	.000	

Table 4.13 revealed that there was significant ($p=.000$) negative correlation ($-.326$) of SLR with intensity of pain. Result showed value of SLR increases with decrease in intensity of pain. It was concluded that p-value (.000, $p<0.01$ -levels) was significant for correlation between SLR and intensity of pain .

DISCUSSION:

The use of high heels shoes causes anomalous posture and problem in the lower limb and pain in legs. High heels induces increased lumbar curve, pelvic problems neck ache and knees misalignment. Center of gravity also changes. Temporary changes cause misalignment in the body. past study indicated that changes in the body caused by high heels could be permanent. (Bae et al., 2015)

This research has been conducted to check the prevalence of sciatica among high heels wearer. In our questionnaire we have asked about length of heels, type of heels, frequency and duration of wearing heels .we have given multiple options to them. And after analysis, we found there was correlation of height of heels with aggravated symptoms of pain. As a results of past researches indicated that high heels impact on the body posture and put load on all low extremity joints and vertebrae of lumbar region in this way compensation by muscular activity also increased (Park, Kim, Chung, & Hwang, 2016b). Injury to the body muscles increases as the inches of high heels, but high heels are used and prepared in various types due to the modern fashion. There have been lots of researches done, which have examine impacts of high heels on body. Effects of heels of different height were analyzed on the muscles of low back, and the results of research studies confirmed the fatigue of deep muscles of lumbar region, when the heels height was six centimeter than four centimeter.(Han, 2015).

variables i.e. pain on lateral and posterior side, painful back , numbness on lateral side of leg, physical activity and timing of pain showed negative correlation (-1.22, -0.37, -1.17, -0.78, -0.04) and the result of p-value(.086, .601, .099, .272, .958)is insignificant from top to bottom among all variable relationship with SLR.Intensity of pain and SLR value also have significant (.000) negative correlation (-3.26) that SLR value increased with decrease in intensity of pain.

Our work resembles with above mentioned variable, in a sense variable of heel height has 60 % responses towards 2-3 inches, making week correlation of SLR with high heels, using different variables.

Wedge heels increases the activation of para vertebral muscles of lumbar and cervical region because not only the heel height impact on muscular skeletal system but having the different in base of foot touching the ground also affects the deep muscles of back. when females wore wedge heels, stiletto , pumped , block heels , it was analyzed that heels height was the momentous than

the type of heels. In altering the muscle activation of back. (Han, 2015).

In research it was found the same changes, that wedge heel users produces the symptoms.

High heels might cause unnecessary sacromere overlie, due to disturbing length tension curve producing detrimental strain in muscle fascicles. ("On muscle, tendon and high heels | Journal of Experimental Biology," n.d.)

Therefore subjects reported, muscle fatigue and leg pain due to this phenomena may become victim of severe sciatica, if they chronic use the high heels for years.

In our study, variable which was selected by majority of subjects was 4 years. More years are required to develop the severe sciatica.

The results of relationship between intensity and above mentioned variable i.e. height, weight, stress, frequency of wearing of high heels, inches of high heels and in a day duration of wearing of high heels with low positive correlation (.058, .078, .001, .011, .011, .024) and insignificant p-value (.411, .274, .988, .879, .132, .739 p-value < .001) except stress .so it was concluded that intensity of pain increases with increase in above mentioned variables. This study accomplished only the symptomatic effects of sciatica, in lower extremity. Further studies are required to evaluate the long-term effects of high-heeled shoes and the mechanism of developing sciatic, with modification of these related variables.

CONCLUSION

There is huge research work has been accomplished and literature is present which shows the high heel impact on body biomechanics, posture and musculature, but correlation of sciatica with high heels has not been discussed or researched in previous studies so our objective is to locate those individuals who are wearing high heels in their daily routines either have sciatic pain or not. We have selected Ronald modified questionnaire with some more modification for sciatica evaluation, conducted study by collecting information from target subjects. It was concluded that duration, frequency, type and height of heels has positive correlation with pain pattern of sciatica. While straight leg raise show negative correlation with the symptoms, subject have presented wearing high heels. So it is concluded that high heels contribute to increase in subject symptoms of getting

sciatica as there will increment in each variable discussed above.

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