

Analysis On Influence Of Low Back Pain In Daily Life Activities Of The People

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Abstract: The LBP(low back pain) is a common problem that has been seen almost all around the world. There is no definite cure for this problem. It is necessary for us to know what are the primary functions or the activities that will be affected for the LBP people in their daily life. The questionnaire is taken from the physiotherapy clinic department in Rims government hospital kadapa district. The research aims to know the prevalence of LBP in one particular Physiotherapy hospital over a period of 4 years from 2017 and 2021. The study involves the sample size of about N=385. The participants are from the age group of 30 to 65years. The area taken for the study is kadapa district, Andhra Pradesh, India. Multivariate logistic regression in order to evaluate the how the LBP is affecting the daily life activities. From the results of the study the severeness percentage of people who have reported LBP is as follows 4.72% in climbing stairs, 3% in walking stairs, approximately 8% in bending, 9.5% in dressing. From this we have concluded that the LBP prevalence is increasing along with the time period and precautions and measurements are needed to be taken so that people with LBP should suffer less with the functional limitations in their daily life.

Keywords: low back pain, daily life activities, chronic low back pain, regression analysis for LBP.

Introduction:

LBP is classified into 2 types acute and chronic LBP. It is seen that LBP is most common problem all around the world (Bever et al. 2017). When it comes to America which is considered as one of the most fast moving and developed country in the world is also seen that millions of people are suffering from the LBP. It is seen that some studies suggest that the older-adult people are seen to be suffering from the LBP at higher percentage compare to the younger people (Bever et al.

2017).Whereas the some studies stated that LBP is not dependent on age it may cause at any age and it is one of the primary cause for the people visiting the physiotherapist(Jacob and Kumar 2017). For older adults it is stated that to keep the track of the exercises they are taking so that they don't get exhausted from the exercises and should maintain the track record in order to avoid the injury same goes for the medicine which is taken more than the required amount may cause the side effects(Bevers et al. 2017). It is seen that there is no huge difference between mental parameters of body mass and percentage of body fat when it comes to the people suffering from the LBP(Verbunt et al. 2001).LBP is a condition where we cannot say that a single treatment can give the best results in curing the LBP. There is no definite treatment that has emerged as the 100% best effective in treating the LBP not even a surgery can promise the 100% effective results in treating the LBP(Vadhanan 2017).Exercises are seem to only method that are being proven to be effective in prevention of LBP(Van Tulder, Koes, and Bombardier 2002).LBP has been now accounted as one of the 10 diseases which are being caused worldwide around large amount of people(Jacob and Kumar 2017).It is stated that the older people who are undergoing the LBP treatment should also consider their age and take the precautions that are needed to be taken(Bevers et al. 2017).A study where 91 therapists were included in Chennai stated that the exercise therapy and the education about the LBP have shown the effective results in managing the LBP(Jacob and Kumar 2017).It is seen that the physiotherapist pain altitudes and viewpoint differ depending upon the choice of treatment(Alshehri et al. 2020).The physiotherapists are facing the difficulty in evaluating the pain that takes place in the LBP patients as there is no definite pain intervention procedure which can help the physiotherapists to evaluate the pain from which they can take the treatments according to the pain levels in the LBP patients(Vadhanan 2017).Having the surgical option for treating the LBP patients is not safe entirely because there are also some studies which showed that few patients who have undergone the surgery in treating the LBP has seen the side effects of the surgery such as superficial wound infection though the wound was cured with proper dressing but this shows us that the surgical option in treating the LBP has also its own draw backs which should be consider before considering going to the surgical options as many patients may also have the diabetes which faces problems in curing the wounds due to high sugar levels(Vadhanan 2017).LBP is one of the expensive treatments and less guaranty of 100% recovery(Froud et al. 2014).There are only few studies that has been conducted when we talk about lumber and LBP(Dhabi 2019).Lumber muscles are classified based on gender and age for getting the basic

data about the lumbar muscles. It is seen that lumbar nerve muscle increases as the age increases. The LBP is a condition which is experienced by everyone once in a life time. The LBP episode sometimes lasts short and sometimes it lasts long and results in long term disability (Van Tulder, Koes, and Bombardier 2002). A study conducted including 304 respondents in knowing how to manage the LBP where the 87.1% has supported the exercise therapy as a effective in treating the LBP and 82% stated that educating the patient about the LBP has shown the good results in managing the LBP where as 80.6% has shown the specific exercises which are designed to manage the LBP has shown the good results, electro therapy and soft tissue release contribute 61.9% and 58.8% and spinal mobilization has shown the 57.8% as the good effects to manage the LBP (Alshehri et al. 2020). Study involving about 23,089 participants among which 20.9% are reported to be suffering from the LBP from past 12 months (Alonso-García and Sarría-Santamera 2020). About 1 to 3 out of 10 people are seen to be suffering from the pain of the LBP even though they are recovered (Hush et al. 2009). C-reactive protein (CRP) which is commonly known as the acute phase protein. Which has shown its efficiency in treating the CLBP, chronic inflammation and in treating the musculoskeletal disorder (Macphail 2014). Proper diet and healthy life style can help in getting the best results of the CRP in the treating the chronic pain in patients. The accurate levels in which the CRP should be taken are seen to be 1mg/l (Macphail 2014). There are very little information on the prospection of the patient recording the recovery from the LBP. It is seen that the patients who are suffering from the LBP when asked about their recovery rate then it is seen that some said they are recovered but later the same patients remarked about the recovery from the treatments of the LBP. Well it is a fact that once you got the LBP then it is impossible to get recovered from the LBP (Hush et al. 2009). It is seen that when people who are suffering from the LBP when said be recovered from the LBP after taking effective treatment the first major recovery that is seem to be recovered are pain, numbness and the impact of pain while doing activities was also to be reduced. The second major recovery that be noted is even the patients who have seem to be having the still suffering from the pain but it is seen that the pain intensity is reduced and they are able to go back to their daily life activities up to a major extent (Hush et al. 2009). The social factors should be consider in the development of the effective treatment of the LBP (Froud et al. 2014). When it comes to other factors such as Factors such as physical training, awareness towards the LBP, mental levels influence the people with LBP (Grabovac and Dorner 2019). Even though there are many new methods that has been evolved in these days but there is need to improve in the

treatment process which will help to produce a technique which is more effective in producing the good results in treating the LBP and CLBP and other LBP relating problems which are facing by the people in today world(Ong and Hooper 2006).There are different methods and approaches that has been taken by different Physiotherapists but it should be make sure that the method adopted should improve the level of treatment results and help the people to deal with the LBP(Ong and Hooper 2006).Awareness programmes regarding LBP should be introduced to make people aware about the risk factors which causes the LBP(Van Tulder, Koes, and Bombardier 2002).The LBP has the higher rate of prevalence with at least one patient visiting the emergency departments and the diagnostic centers., visits to physiotherapists(Alonso-García and Sarría-Santamera 2020). LBP is a condition which is not only causing burden to the individuals who are suffering from the LBP but also to the society. The LBP not only affects the work life of the people but also the sexual function(Grabovac and Dorner 2019).In recent times the interested is shifted more towards the patient centered approach where the patients are asked to obey the doctor's orders which will increase the smooth communication between the doctor and the patient and will in turn result in effective treatment program(Ong and Hooper 2006).It is important to present the outcomes that come from the treatments of the LBP more precisely so that patients who are dealing with the LBP in their life have idea what will be the outcome from the treatments and deal the situation in a better way(Froud et al. 2014). Many studies state that the problem of LBP is going to be there for forever but the pain and the intensity can be reduced and healthy diet and healthy lifestyle will help the people suffering from the LBP(Hush et al. 2009). The affect of LBP is increasing from age, low literacy rate, increase in the body mass index, among which the females are seem to be more in percentage than the males(Alonso-García and Sarría-Santamera 2020). People who are suffering with the CLBP it is seem that there is no major difference between the physical activities if the normal healthy people and the people who are suffering from the CLBP(Verbunt et al. 2001).The LBP affects mostly on the daily life activities of the people so it is important the physiotherapists to measure how much the daily life activities of the LBP patients are effected then it will be easy in evaluating the effective treatment of LBP and also to know the origin of the LBP(Verbunt et al. 2001).LBP is a major problem which is facing by the society with risk factors contributing in LBP are age, weight, bad posture, heavy and improper exercises, depressive moods, obesity, etc(Jacob and Kumar 2017). LBP risk factor not only in one field but in every field such as psychosocial, individual, occupational risk factors. It is still a long way to go

when it comes to development of prevention strategies of LBP (Van Tulder, Koes, and Bombardier 2002). The LBP affects more on the daily life activities of the people making them restrict the activities such as forward bending, standing, lying down, walking and cycling is also affected (Deursen, Snijders, and Patun 2002). It is stated that if we have accurate and more amount of data available on how the daily life activities are being affected by LBP will play an important role in finding out the effective solution for the non-specific LBP. Since the data available on this is scarce (Deursen, Snijders, and Patun 2002). When we tend to do research on knowing how the daily life activities are affecting the people the clinics can provide us the most genuine data and apart from this we can also know how many patients are visiting the clinics with LBP as their cause of concern which will help to evaluate the prevalence of the LBP in hospitals and clinics of a specified area (Deursen, Snijders, and Patun 2002). Study conducted over a nationwide on prevalence of LBP over a time period has shown the results that the LBP is a common problem that has been suffering by the people and restricting many daily life activities of the people with LBP (Yiengprugsawan et al. 2017). LBP is not only causes pain it restricts the daily life activities such as walking, bending, difficulty in dressing, clinging through stairs cases etc (Yiengprugsawan et al. 2017). It is needed to know how much the LBP affects and how much it is needed to pay attention to public health and steps should be taken to make people aware about in time treatment that should be taken for the LBP (Yiengprugsawan et al. 2017). LBP affects the daily life activities (ADL) ability to work and sexual function (Grabovac and Dorner 2019). Factors such as physical training, education awareness program, medication have shown influence the LBP and day to day performance (Grabovac and Dorner 2019). There is need to further study about how to evaluate the sexual ability and sexual functioning for the people with LBP so that we can get a clear indication about how to deal and limit the influence of the LBP on ADL (Grabovac and Dorner 2019). It is seen that a study conducted over a year half of the population are seen to be suffering from the LBP and about 19% are suffering from the CLBP (Picavet and Schouten 2000). Factors such as awkward bending, awkward posture, similar posture for longer duration etc increase the risk of LBP in people (Picavet and Schouten 2000). The physical load and its relation with the LBP is different in working and non working people (Picavet and Schouten 2000).

Methodology:

In the present study is conducted to evaluate prevalence of LBP in Rims government hospital kadapa district and to know up to which extent the daily activities of the people with LBP are

affected. The questionnaire used is Thai cohort scale Sukhothai Thammathirat Open University distance learning (Yiengprugsawan et al. 2017) is used. The response rate obtained in the study is about 90% and the sample size is 385 and the respondents responded effectively are N=384. Number of people who are responded n= 347 in 2017 and n= 358 in 2021. In the present paper the study is focused on only Rims government hospital of Kadapa district, Andhra Pradesh, India. We are focusing to evaluate the prevalence of LBP over a period of 4 years 2017-2021 and also to know how much the LBP is affecting on the daily life activities of the people. Through this we will be able to provide the intensity of the LBP between a certain period where we can see whether the daily life activities are being influenced by the LBP or not whether the intensity of the LBP has increased or not in the respondents. Through this we can get the through idea how the rural areas of the India are facing and handling the LBP.

The formula used for calculation of the sample size:

$$\text{Needed sample size} = (Z\text{-score})^2 * \text{Std Dev} * (1 - \text{Std Dev}) / (\text{margin of error})^2$$

$$\text{Std Dev} = \text{Standard Deviation} = \pm 5\%$$

$$((1.96)^2 * 5(0.5)) / (0.5)^2$$

$$(3.8416 * 5) / 0.0025$$

$$0.9604 / 0.0025$$

$$384.16$$

$$\text{Needed respondents} = N = 385.$$

$$\text{Sample size } N = 385$$

$$\text{Response rate} = 90\%$$

$$\text{Number of respondents responded} = 347$$

LBP exposure and limitations of the daily life activities outcome:

The respondents were questioned as per the standardized questionnaire and asked whether the LBP they are experiencing is bad enough that their daily life activities are affecting or not. The questionnaire is divided as LBP and 'severe' LBP across the 3 years and the questions were asked

on the basis of following the pattern as Never-(‘No’ in 2017 and no in 2021), reverting indicate (‘yes’ in 2017 and ‘no’ in 2021); incident indicate (‘no’ in 2017 and ‘yes’ in 2021); and chronic indicate (‘yes’ in 2017 and no 2021)(Yiengprugsawan et al. 2017). In 2018 and 2020 respondents were asked about how the daily life activities such as climbing stairs, walking, bending, kneeling and dressing are affected.

Outcome:

Among the respondents who are selected in the study about 80% are males. The respondents are aged group between 30 to 50 years. Respondents are from rural and urban areas. When we see the response rate of respondents in 2021 approximately about 8% are facing the difficulty in bending, 3% walking for about 100 meters, 4.72% climbing stairs, 9.5% dressing themselves. It is seen that there is increase in the limitation in the daily life activities of the respondents.

Table: No:1 Cohort attributes by prevalence of low back pain (N = 347), Rims government hospital, Kadapa district (Yiengprugsawan et al. 2017):

LBP STATUS IN 2017(%) N=347	Longitudinal 2017-2021 LBP Dynamics			
	Never No - 2017 No - 2021	Reverting Yes -2017 No - 2021	Incident No – 2017 Yes – 2021	Chronic Yes – 2017 Yes - 2021
LBP	24% (83.28)	24% (83.28)	16% (56)	35% (122)
Severe LBP	15% (52.05)	18% (62.46)	20% (69)	47% (163)
Restoring Activities				
Sex < 35				
Male(35-45)	10%	43%	12.9%	28.3%
Female(45+)	8%	41%	18.8%	38%
Age group, Years				
<35-26%	10---3%	166---47.8%	66---18.9%	105---30.3%
35-44-46%	7---7.3%	50---49.9%	50---14.3%	99---28.5%
45+- 28%	10---9.8%	132---38%	45---12.9%	136---39.3%
Residence				
Urban (60.3%)	19---5.6%	204---58.9%	48---13.8%	75---21.7%

Rural (44%)	27---7.7%	98---28.3%	167---48.9%	52---15.1%
Occupation				
professional and manners(42%)	120---34.5%	124---35.85	55---15.9%	48---13.8%
Office assistant (27%)	135---38.9%	107---30.9%	38---10.9%	67---19.3%
Skilled workers elementary (21%)	108---31.2%	79---22.8%	66---18.9%	94---27.1%
Others/not working(10%)	142---40.95	48---18.3%	48---13.8%	94---27%
Work hours per week				
< 25 (6%)	116---33.4%	62---17.9%	59---16.9%	110---31.8%
25-40 (35.2%)	137---39.5%	74---21.3%	64---18.3%	73---20.9%
40+ (46.9%)	140---40.3%	69---19.8%	74---21.4%	64---18.5%
Not working (11.9%)	154---44.3%	74---21.3%	34---9.8%	85---24.6%
House hold Monthly income				
≤ 10,000 (10.4%)	128---36.9%	59---16.9%	50---14.3%	111---31.9%
>10,000 -30000 (48.9%)	125---36%	70---20.3%	64---18.37%	88---25.33%
>30,000 (40.7%)	118---33.9%	86---24.9%	36---10.3%	107---30.9%
Hours sitting per day				
0- 4(73.9%)	118---33.9%	62---17.9%	79---22.75%	88---25.45%
5-8(20.8%)	130---37.34%	74---21.3%	76---21.99%	67---19.37%
>8 (5.3%)	37---36.99%	67---19.3%	66---18.9%	86---24.81%
Hours standing per				

day				
0-4(19.8%)	38.34%	21.77%	15.8%	24.09%
5-8(68.3%)	35.39%	20.86%	14.99%	28.76%
>8(11.9%)	38.93%	19.34%	13.09%	28.64%
Physical activity sessions per week				
<3 (51.9%)	118---33.92%	66---18.90%	51---14.78%	112---32.4%
3-6(39.1%)	133---38.3%	76---21.78%	41---11.90%	97---28.02%
7+(9%)	107---30.9%	69---19.77%	48---13.97%	123---35.36%
Body mass index (Asian cut offs)				
Under weight BMI <18.5(5.3%)	135---39%	80---22.97%	49---14.03%	101---29.09%
Normal: BMI 18.5<23(39.0%)	135---39.0%	63---18.03%	49---14%	101---28.97%
Over weight BMI 23 to 25 (32.9%)	119---34.3%	73---20.90%	45---13.06%	110---31.74%
Obese 1: BMI 25 to < 30 (20.9%)	111---31.90%	66---18.91%	66---18.9%	105---30.29%
Obese 11: BMI 30+(4.4%)	135---38.91%	76---21.8%	66---18.90%	71---20.39%

Table 2: Questionnaire representing the functional limitations in people with LBP(low back pain)(Yiengprugsawan et al. 2017):

Functional Limitations	2017% 2021	Longitudinal 2017-2021 LBP dynamics by Functional Limitations(%)			
		Never No - 2017 No - 2021	Reverting Yes -2017 No - 2021	Incident No – 2017 Yes - 2021	Chronic Yes – 2017 Yes - 2021
Climbing					

stairs	80.9%(281)	85.7%(297)	82%(285)	75.2%(261)	76.22%(264)
Never					
A Little	11.9%(43.02)	9.0%(31)	10.9%(38)	18.9%(66)	19%(66)
A Lot	4.72%(10.41)	1.3%(5)	4.7%(16)	5.9%(20)	7%(24)
Walking					
100mts					
Never	83.61%(290)	85%(295)	82.8%(287)	75.2%(261)	71%(246)
A Little	13.39%(46)	11.50%(40)	12.9%(45)	18.9%(66)	21.9%(76)
A Lot	3.0%(10)	3%(10.41)	4.3%(15)	5.9%(20)	6.7%(23)
Bending/					
Stopping					
Never	60.9%(211)	72.6%(252)	62.9%(218)	55.9%(194)	39.9%(138)
A Little	38.5%(134)	22.7%(79)	36.1%(125)	47.6%(165)	53.7%(186)
A Lot	7.9%(27)	4.7%(16)	5.9%(20)	7.9%(27)	14.9%(52)
Dressing self					
Never	63.4%(220)	87.3%(302.931)	82.4%(286)	79.4%(276)	68.2%(237)
A Little	38.5%(134)	9.8%(34)	15.3%(53)	15.3%(53)	24.0%(83)
A Lot	9.5%(33)	1.9%(7)	5.3%(18)	5.3%(18)	7.8%(27)

Discussion and Conclusion:

From the results obtained from the survey it is clear that the LBP is common more than one third of the patients who are visiting the Rims government hospital (Physiotherapy department)Kadapa district are facing the LBP in both the years 2017 and 2021. The sample size obtained is 385 and the response rate obtained in 2017 is 358 and in 347 in 2021. About 90% of response rate was obtained in the study. the study conducted to know the prevalence of LBP patients in the physiotherapy clinics and to know limitations the LBP is causing on the daily life activities of the respondents.

Coherent characteristics of respondents are stated in table no.1, among total respondents about 25% respondents has no LBP in both the years 2017 and 2021,24% have experienced LBP in 2017 but not in 2021, 16% have experienced LBP in 2021 but not in 2017, 35% respondents have experienced the LBP in both the year 2017 and 2021. 15% of the

respondents have not experienced severe LBP limiting their daily activities in both the years 2017 and 2021. 18% respondents have experienced when it comes to severe LBP limiting the daily activities then 15% have stated No in 2017-2021, 18% said Yes in 2017 No in 2021. 20% said No in 2017 and Yes in 2021. 47% said yes in both the years 2017 and 2021. where Males were about 43% and females were about 57%. Among which about 26.1% respondents are less than 35years, 45.5% are between 35-44 years of age, 28.4% are above 45 years of age group. 60.3% of respondents are from urban area of kadapa district and 43.7% respondents are from rural area of kadapa district. About 41.9% are professional and managers, 27.4% are office assistant, 20.9% are skilled workers, 9.8% are from not working category. 6% work less than 25 hours per week, 35.2% work between 25 - 40, 11.9% come under not working. 10.4% income ranges less than 10,000, 48.9% income range between 10000-30000, 40.7% income range less than 30000. Respondents sitting hours per day between 0-4 are about 73.9%, about 20.8% respondents sitting hours are between 5-8, about 5.3% respondents sitting hours per day contribute less than 8hours. About 19.8% respondents stand less 0-4hours per day, about 68.3% respondents standing hours are between 5-8 hours, about 11.9% respondents standing hours less than 8 hours. About 51.9% respondents do less 3hours of Physical activity sessions. About 39.1% respondents do less 3-6 hours of Physical activity sessions. About 9% respondents do less 7+hours of Physical activity sessions. About 5.3% respondents are under weight. 32.9% respondents are overweight, 20.9% are obese I and 4.4% come obese II category.

In table 2 describe the functional limitations of the respondents. 4.72% face a lot of difficulty in Climbing stairs activity. 3% faced a lot of difficulty in walking. Approximately 8% face difficulty in bending. 9.5% face a lot of difficulty in dressing themselves. It is seen that there is a increase in limitation if functional activities due to LBP from time from never to reverting to incident to chronic. It is very evident that the among total number of patients visiting physiotherapy department of Rims government hospital about large amount patients are visiting in regards with the issue of LBP which shows that LBP incoming patients are more and the functional activity limitations such as walking, bending, dressing, climbing, in patients are also been seen evidently up to certain percentage. It is seen that the LBP patients are increasing from the time periods from 2017 to 2021 which shows that the evidence increasing prevalence of LBP. precautions and effective measures should be taken to reduce the increasing rate of LBP in people.

Future Scope:

In the study a time period of about 4 years is taken further increase in the time period may give more accurate values relating to the prevalence of LBP and the functional limitation in a person in regards to LBP. Future researchers are recommended to further increase of area may provide us prevalence of LBP with respect to geographical extent.

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