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# An Epidemological study on Low Back Ache (*Kati Shool*)

**Research Article**

**Geeta Vishwanath Sathavane[1*], Madhulika Tiwari[2], Darshana H Pandya[3], Pramod Khobragade[4], Samata V Tomar[5]**

1. Associate Professor, Rog Nidana Department, 2. Assistant Professor, Sharir Rachana Department
Datta Meghe Ayurved Medical College and Hospital, Wanadongari, Nagpur.
3.Assistant Professor, Rog Nidana Department
Institute of Post Graduate Teaching & Research in Ayurveda Jamnagar.
4. Professor and Head, Dravayaguna Department
Datta Meghe Ayurved Medical College and Hospital, Wanadongari, Nagpur.
5. HOD & Professor, UG and PG Department of Agadatantra, SSAM, Nashik.

## Abstract

The prime causative factors for all the disease is faulty life style and dietetics which is being followed frequently, leads to many diseases. Low back pain is one among them. Low back pain (*Katishoola*) is most expensive & benign condition in industrialized countries. It is one of the most frequent symptoms encountered by adults. The annual prevalence of LBP is 15-45%. Aims and objective-To evaluate the role of dietetics & life style modern era and working pattern in progression of low back ache. Material and method- Survey work was carried out on working group of Gujarat ayurveda university employees, OPD and IPD patients having low back ache on the basis of specially prepared proforma and questionnaires including present era lifestyle, working pattern and diet pattern. Total 91 patients were surveyed. Maximum numbers of patients were in age between 31-40 yr. The person doing mainly labour and/or clerical work, having shift and night duty, long time sitting on one place with improper posture, excessive walking (>3hr daily), bending posture, Standing type work (>3hr daily), >2hr travelling daily were affected more. *Vishamashana*, *abhishyandi aaharsevan*, consuming oily food, stress, irregular bowel habit, disturbed sleep, *ratrijagaran*, *vegdhaarana* etc. were observed as *nidana*. Conclusion- Faulty life style and diet pattern leads to accumulation and provocation of respective *dosha* and development of various life style related diseases and one of them is low back ache.

**Key Words:** *Katishool, Low back ache, Survey, Working pattern, Lifestyle.*

## Introduction

In present era, diseases affecting the locomotors system are seen increasingly which considerably reduces the human activity in terms of social and professional life. Now a day's human activities are totally contradictory to *Swasthavritta*. Regime and rules are opposite. Irregular food habit (*Vishambhojana*), suppression of natural urges *(Vegavarodha)*, stress (*Chinta*), lack of proper sleep and relaxation being common part of life. Excessive sitting for longer time at one place, improper sitting posture during work in offices (*Vishamaasana*), continuous and over exertion (*Atishrama*), jerky movements during traveling and sports (*Vishamcheshta*) etc. created undue pressure to the spinal cord. Mostly above said conditions & lifestyle patterns put maximum strain on spine & lower portion of pelvis and play an important role in producing low back pain (*Katishool*). In this way, this disease is now becoming a significant threat to the working population.

The lifetime prevalence of non-specific (common) low back pain is estimated at 60% to 70% in industrialized countries (one-year prevalence 15% to 45%, adult incidence 5% per year). The prevalence rate for children and adolescents is lower than that seen in adults but is rising. Prevalence increases and peaks between the ages of 35 and 55. (1) Epidemiological data suggests that extreme height, cigarette smoking, morbid obesity, job dissatisfaction, work condition, legal social factor, financial stressor, emotional circumstances heavily influence back disability. Heavy physical work ,weight lifting, prolong static work posture, simultaneous bending & twisting, long time sitting on one place may lead to back pain. Men & women are equally affected, but those female who are >60 yrs complain more than male.(2) In an overall assessment major number of patients presented to the hospital has some symptoms related with pain on low back and legs.

Low back pain can be compare with *Katishoola* which is listed as one of *Vatavyadhi* , in which *Vata* is essential causative factor. As *Asthi* & *Vayu* are inversely

*** Corresponding Author:**
**Geeta Vishwanath Sathavane**
Associate Professor
Rog Nidana Department
Datta Meghe Ayurveda Medical College and Hospital, Wanadongari, Nagpur, India
Email Id: geeta.sathavane@gmail.com

related with each other, the aggravation *Vata* particularly in *Aasthi* hampers the quality of *Asthidhatu*. (3) The weak *Asthidhatu* provides to set the disease process & when vitiated *Vata* gets settled into *Katipradesh* causes *Katishoola*. The Etiological factors and pathogenesis *o*f above disease i.e. *Katishool* are not given separately in classic but being one of the 80 *Nanatmaja Vatavyadhis* (4) the same *Nidana* of *Vatavyadhies* is applicable here.(5) Out of 5 types of *Vata*, *Vyana* & *Apana* are specially vitiated. In this condition many times *Katishoola* is seen alarming symptom for future disease condition like *Grudhrasi*, *Pakwashayagata Vata(6)*, *Gudagatavata(7) and so on.*

**Aims and objective**

To evaluate the role of dietetics & life style of modern era and working pattern in progression of low back ache.

## Materials and Methods

Proforma and questionnaires including present era lifestyle, diet pattern and working pattern were prepared to assess the subjects.

Special survey work was carried out in working group of GAU Employees.

Total 91 patients were surveyed for the study.

**Selection criteria**

**Inclusion criteria**

All the subject working in GAU campus and having complaints of backache at least more than 3 months and ready to give their inform consent for the participation were selected for the present study irrespective of their age, gender and work pattern.

Patients were having complaints of LBP and came to the IPGT&RA hospital for treatment was also selected for present survey study.

**Exclusion criteria**

All the subject working in GAU campus and having complaints of backache for less than 3 month and did not ready to give their inform consent for the participation were excluded for the present study.

Patients were not having complaint of LBP.

**Study period**

Total 91 patients were surveyed during year 2012.

## Observations and results

Out of 91 patients, 38 (41.76%) patients were laborer, 26(28.57%) patients were doing clerical / computer work. and 27 (29.67%) patients were housewives. (Table1)

**Table1: Nature of work of 91 patients**

| Nature of work | Number of patients | Percentage % |
|---|---|---|
| Housewife | 27 | 29.67 |
| Laborer | 38 | 41.76 |
| Clerical/Computer | 26 | 28.57 |

*Katishool* (Low back pain) was found in 100% of patients, *Stambha* (Stiffness in back*)* (63.74%), *Spandana* (Radiating pain*)* (40.66%) *Ruka* (constant pain in lumber region) (36.26%) *Toda* (Pricking type of pain) (10.99%) were observed as chief complaints. *Gaurava*( Heaviness in body) (48.35%), *Udaradhmana* (Gurgling sound with fullness in abdomen) (41.76%) *Tandra* (Sluggishenss) (29.67%), *Bhrama* (16.48%), *Arochaka* (Loss of taste) (13.19%), *Bhaktdwesha* (Loss of appetite) (13.19%) were observed as associated complaints. 35.16% patients were having symptoms from 2 m-1yr followed by 32.97% patients was having chronicity of 1 – 2 years. Maximum no. of patients were females (71.43%), from poor socioeconomic status (53.85%) and belonging to age group between 31-40yr (36.26%). 46.15% were of *Vatapitta Prakriti.* On taking a careful history it was observed that most of the patients were not following the code and conducts described in *ayurveda* for healthy eating. 48.35 % of patients' were daily taking fried food items (oily food). 40.66% of patients were daily taking Spicy food, daily potato in diet *(*26.37%), taking Curd more than 3times in week as it is *Abhishyandi* in nature was observed in 25.27% and specially taking curd at night in 15.38% of patients, taking *Atisheeta Ahara Sevena* such as icecream >3times in week. (17.58%), frequently soft drinks (24.18%), frequently fermented food items (18.68%) and Junk food and were observed. *Katu Rasa* (pungent) dominant diet was taking (56.04%) of patients, Followed by 37.36% were taking *Madhura Rasa* (sweet).Dietary habits like *Vishamashana* (irregularity in quantity and time of diet *(*40.66%), *Alpashana (*taking less quantity of food) *(*19.78%) *Adhyashana (*Taking meal on meal) (8.79%), *Viruddhashana* (consuming incompatible foods) *and Atimatrabhojana* (taking more quantity of food than digestive fire) (6.59%) were observed. (Table 2)

**Table 2: Distribution according to dietary haibts**

| Dietary habits | Number of patients | Percentage % |
|---|---|---|
| *Alpashana* | 18 | 19.78 |
| *Viruddhashana* | 6 | 6.59 |
| *Vishamashana* | 37 | 40.66 |
| *Atimatrabhojana* | 6 | 6.59 |
| *Adhyashana* | 8 | 8.79 |

82.41% of patients were habitual for tea more than thrice a day, while 31.86% of patients were taking tobacco in the form of chewing and smoking. And 3.30% of patients were Alcoholics. Disturbed appetite (*Vishamagni*) (36.26%), Disturbed sleep (*Khandita Nidra)* (46.15%), frequent awakening at night (*Ratrijagarana*) (21.98%), Irregular bowel habit (74.72%) was observed in patients. *Diwaswapa* (Day sleep) (79.12%) Travelling more than 1hr daily *(51.56%) Vegadharana* (Suppuration of natural urge) 37.36%, working in AC (*Ateesheeta)* more than 5hr daily was observed. H/o Laparotomy (29.67), H/0 Trauma (*Abhighata*) (35%), *Chinta* (stress) (71.43%), *Krodha* (angry nature) (28.57%) was observed in patients.

From Working pattern , working by sitting more than 3hr continuously (53.13%) and improper sitting posture (91.18%), long standing work more than 3hr (60.94%), Bending type of work more than 1 hr (29.69%) walking more than 2hr (42.19%) was noticed in patients. These are known risk factors for spine problems.25% of patients having shift duty while 20% having night duty 3times per week. (Table 3)

**Table 3: Working information of 64 employees**

| Nature of work | Number of patients | Percentage % |
|---|---|---|
| Sitting | 34 | 53.13 |
| Walking | 27 | 42.19 |
| Standing | 39 | 60.94 |
| Bending | 19 | 29.69 |
| Shift duty | 16 | 25 |
| Night duty | 13 | 20.31 |

**Table 4: Distribution according to working hours per day in 64 patients**

| Hr/day | Number of patients | Percentage % |
|---|---|---|
| 3-5 hr | 4 | 6.25 |
| 6-8hr | 44 | 68.75 |
| 8-12hr | 17 | 26.56 |

**Table 5: Sitting hours per day during working in 34 patients**

| Sitting Hr/day | Number of patients | Percentage % |
|---|---|---|
| 1-3hr | 13 | 38.24 |
| >3hr | 21 | 61.76 |

**Table 6: Sitting posture during working in 34 patients**

| Sitting posture | Number of patients | Percentage % |
|---|---|---|
| Proper | 3 | 8.82 |
| Improper | 31 | 91.18 |

**Table 7: Walking hours per day during working in 27 patients:**

| Hr/day | Number of patients | Percentage % |
|---|---|---|
| 1-2 | 16 | 59.26 |
| >2hr | 11 | 40.74 |

**Table 8: Standing hours per day during working in 39 patients:**

| Hr/day | Number of patients | Percentage % |
|---|---|---|
| 1-3hr | 19 | 48.72 |
| >3hr | 20 | 51.28 |

**Table 9: Bending hours per day during working in 19 patients:**

| Hr/day | Number of patients | Percentage % |
|---|---|---|
| <1hr | 8 | 42.10 |
| >1hr | 11 | 57.89 |

Most of the female patients were having past history of irregular; Scanty (oligomenorrhea), painful menses (dysmenorrhea) whereas 53.85 % (35).Female patients were in menopausal stage and 3.33 % of patients were having the complaint of White discharge. (Table 10)

**Table10: Distribution according to menstrual history in 65 patients**

| Menstrual History | Number of Patients | Percentage % |
|---|---|---|
| Regular | 23 | 76.67 |
| Irregular | 7 | 23.33 |
| Painful | 10 | 33.33 |
| Painless | 20 | 66.67 |
| Scanty | 16 | 53.33 |
| Heavy | 1 | 3.33 |
| Moderate | 13 | 43.33 |
| Menopause | 35 | 53.85 |
| White discharge | 13 | 43.33 |

Most of patients have one and more aggravating and relieving factors. Prolong standing (52.75%), walking (49.45%), forward bending (27.47%),Squatting position(24.18%), and lifting heavy weight (10%) were observed as aggravating factors.(Table 11)

**Table 11: Distribution according to aggravating factors**

| Aggravating factors | Number of patients | Percentage % |
|---|---|---|
| Prolong standing | 48 | 52.75 |
| Walking | 45 | 49.45 |
| Squatting | 22 | 24.18 |
| Lifting weight | 10 | 10.99 |
| Forward. bending | 25 | 27.47 |
| Winter season | 5 | 5.49 |

Lying down position (67.03 %), sitting position (23.08%), to have Analgesics (9.89%) and application of medicated oil, hot fomentation locally (*Snehan Swedan*)(3.30%) were observed as relieving factors in patients. (Table 12)

**Table 12: Distribution according to Upashaya (Relieving factors)**

| Relieving factors | Number of patients | Percentage % |
|---|---|---|
| Lying down | 61 | 67.03 |
| Sitting | 21 | 23.08 |
| Analgesics | 9 | 9.89 |
| *Snehan Swedan* | 3 | 3.30 |

## Discussion

*Katishool* (Low back pain), *Stambha* (Stiffness), *Spandana* (Radiating pain) *Ruka* (constant pain) *Toda* (Pricking type of pain) and *Udarshool (*abdomen pain) were observed as chief complaint while *Gaurava* (Heaviness in body), *Udaradhmana* (Gurgling sound with fullness in abdomen) *Tandra* (sluggishness*)*, *Bhrama, Arochaka* (Loss of taste), *Bhaktdwesha* (Loss of appetite*)* were observed as associated symptoms. This shows involvement of *Vata* and *Kapha Dosha* in

disease *samprapti*. Maximum number of patients between the age group 31-50 yr. It is most active period of life in which the various excessive physical activities are performed, Intervertebral discs begin deteriorating and growing thinner by age 30. (8) Highest incidence was observed in females followed by Laborers. Their low socio-economic status is often reflected in the poor quality of their accommodation and workplace, putting them further at risk of various diseases(9) Females have variety of physical work and sustained variety of posture during household works, which puts a strain on lumbar spine(10) Also labors have to Work in different postures i.e. lift many and varied weights and have to stand or work in unusual postures for long periods which sustain higher load on their spine. These are one of the causative factors for *Vata* vitiation.(11) *Vata-kaphaja* and *Vaatapittaja Prakruti* patients found to be more affected, it suggest that *Vata* plays a major role in the manifestation of the disease *Samprapti*. Most of patients were belonging to poor income group .Poor people are not able to take correct nutrition and hygienic diets. Due to lower education people have to do the job which is more strain full, which leads to *Dhatukshaya* and resulted in *VataPrakopa* in the form degeneration which further leads to causing the disease. Dietary habits *like Vishamashana*, *Alpashana*, *Adhyashana ,Viruddhashana and Atimatrabhojana* was observed. *Alpasana* leads to *Dhatukshayajanya* (depletion in body elements) *Vata Prakopa,* while *Vishamashana, Adhyashana, Viruddhashana and Atimatrabhojana are Margavarodhjanya (*obstructive) causative factors of *Vata Prakopa. Katurasa* dominant diet was taken by majority of patients followed by *Madhura rasa*. Excessive *Katu Rasa* sevana provoks *Vata*.(12) Also Excessive *Madhura Rasa Sevana* provokes *Kapha*.(13) which suggest involvement of *Vata* and *Kapha Dosha* in disease *Samprapti*. Frequently taking Dry regime (*Ruksh Anna Sevana),* cold regime (*Atisheetaanna* sevana) fermented food items , Junk food*, Abhishyandi* diet such as Taking curd at night, all are responsible for *Agnidushti* (vitiation of digestive fire). Disturbed appetite is the outcome of *Agnidushti* due to *Vata* vitiation which is seen in most of the patients. Addiction of Tea was observed in maximum no. of patients followed by Tobacco chewing and smoking. Tea contains *Kashaya Rasapradhana Dravayas* and provoke *Vata* .Smokers are at higher risk for back problems, because smoking decreases blood circulation and affect the overall spine health.(14)

In *Viharaja nidana Diwaswapa (79.12%)*, *Vegadharana (*37.36%), *Atisheeta (*9.89%) such as working in AC were observed in most of patients which *aggravates Vata* by *Margavarodha*.While *Ratrijagarana* (21.98%) causes *Rukshyata* in body and *provocates Vata*.(15). Daily Travelling >1hr, continuous jerks during travelling result in instability within intervertebral joints which causes spine problems. Sitting type of work > 3hr continuously and improper sitting posture, long time working in standing position >3hr, (60.94%), Bending type of work>1hr continuously (29.69%) was noticed. These are known risk factors for spine problems. Working in abnormal posture for long duration was the major cause of musculoskeletal morbidity (16) it put strain on ligaments and disturbs stability of intervertebral joints. (17) H/o Laparotomy such as Hysterectomy, LSCS, and Appendectomy was observed in patients. For such kind of surgery spinal anesthesia is given, *Khavaigunya* is created by local trauma in the form of inject able lumber anesthesia which leads to causation of disease. *Chinta*, *Krodha, Shoka Bhaya* were observed as *Manasikanidana*. These are the causes for *Vataprakopa* (18*)* researches shows that stressful condition of person increase 27% of pressure on the spine, it is more than enough to sub-luxate a spine and chances of occurrence of disease increases.(19) Previous history of external trauma (*Abhighata*) to back (*Katipradesha*) was reported .As it is one of the causative factors for the disease. This causes *Khavaigunya* in *Kati Sthana* and leads to further disease *Samprapti*. Previous traumatic back injury increases 2.5-fold risk of sciatica or Low back pain. (20)

Most of the female patients were having the History of irregular, painful menses. This shows vitiation of *Apanavayu* since long. Because menstruation is one of the functions of *Apana Vayu*. (21) *Apana Vayu* plays key role in formation of *Samprapti* of *Katishoola.* Most of the female patients (53.85%) were in menopausal stage. After the menopause, chances of occurrence of *Katishool* increases as they lose bone density due to less absorption of calcium and ultimately osteoporotic changes.(22) Irregular bowel habit, H/o Fissure, piles, renal stone Suggest the *Apana Vayu Dushti* in disease. Disturb sleep due to pain indicates severity of pain. Also disturb sleep causes *Vata Prakopa* and it is the one of the causative factor.

Prolong standing, walking, Squatting, lifting weight etc. was seen as aggravating factors. Above said posture put more strain on the spine and increase pressure on the vertebrae and discs result in disc degeneration, low back pain and sciatica.(23) Lying down position was observed as relieving factor in maximum Patients. This posture relaxes the muscle of lumber-sacral area and the strain on lumbar spine is relieved for some time and patient feels better. (24) Chronicity of 2month-2yr was seen, this shows that patients neglect the disease in initial phase and seek medical advice when it becomes unbearable or of higher intensity. chronicity is directly proportional to the prognosis of the disease i.e. if chronicity is less prognosis is good. The prognosis of a disease depends on many factors such as the strength of *Nidana* the strength of aggravated Dosha the *Sthana* of the disease, severity of signs and symptoms, duration of the disease etc.

## Conclusion

Faulty lifestyle, diet and Dietary habits Plays an important role in manifestation of *Katishool*. In Present study more *Vayu* dominant causative factors were observed, that provoked *Apana* and has shown symptoms of LBP. Employee and Laborers have more risk of low back pain due to their pattern of work. To

prevent above condition people should follow healthy lifestyle and dietary habits.

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